Minutes

of

140th OCC Meeting

Date: 27.12.2017

Eastern Regional Power Committee

14, Golf Club Road, Tollygunge

Kolkata: 700 033

Eastern Regional Power Committee

Minutes of 140th OCC Meeting held on 19th December, 2017 at ERPC, Kolkata

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

Member Secretary, EPRC chaired the meeting. He welcomed ED, ERLDC and all the other participants in the meeting.

Item no. 1: Confirmation of minutes of 139th OCC meeting of ERPC held on 27.11.2017

The minutes of 139th OCC meeting were uploaded in ERPC website and circulated vide letter dated 12.12.2017 to all the constituents.

Members may confirm the minutes.

Deliberation in the meeting

Members confirmed the minutes of 139th OCC meeting.

PART A : ER GRID PERFORMANCE

Item no. A1: ER Grid performance during November, 2017

The average consumption of Eastern Region for November - 2017 was 343 Mu. Eastern Region has achieved record maximum energy consumption of 358 Mu on 04th November-17. Total Export schedule of Eastern region for November - 2017 was 2161 Mu, whereas actual export was 1776 Mu.

ERLDC may present.

Deliberation in the meeting

ERLDC presented the performance of the Eastern Region grid during November 2017 and up to 14th December 2017. Presentation is enclosed at ***Annexure- A1****.*

ERLDC informed that there was an increase of 7.63% in time duration where the frequency of the grid is less than 49.9 Hz compared to that of the last year. This is due to the reduction in generation availability due to coal shortage and the reduction in availability of hydro generation.

ERLDC added that 125 MVAR bus reactor at 400kV Jamshedpur was charged on 1st December 2017 and 400/220kV ICT tap position is also changed at Jamshedpur. Hence, there was significant improvement in the voltage profile at 400/220kV Jamshedpur S/s during December 2017.

ERLDC informed that the reactive power absorption by Andal units during high voltage is not adequate and requested DVC to take appropriate action to improve the reactive power absorption.

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

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

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

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

1) 400kV Jhasuguda-Vedanta (Sterlite) DC charged for the first time as follows:
    a. Ckt 1: 18:27Hrs of 06/11/17
    b. Ckt 2: 18:53Hrs of 06/11/17
2) 500MVA ICT II at Pandiabili charged for the first time at 15:46Hrs of 17/11/17. Earlier it was charged on 12/07/16 but failed on 21/09/16 due to internal fault. It was replaced and first time charged at 15:46Hrs of 17/11/17
3) 125 MVAR Bus reactor at Jamshedpur charged on 15th November 2017

Installed capacity of Chuzachen HEP is revised from 99 to 110 MW w.e.f 28.09.2017 (CEA approval is enclosed at **Annexure-A2**).

Constituents may update.

Deliberation in the meeting

Odisha submitted the list of elements commissioned during November 2017 as follows:

- *New 132kV Muniguda S/s charged along with LILO of 132kV Theruvali-Kesinga line at Muniguda on 29-11-2017*

BSPTCL informed that the following elements charged during November 2017:

- *132kV Saharsa-Udakishanganj line II charged on 16-11-2017*
- *132kV Banka(old)-Banka(New) D/C line charged on 22-11-2017*
- *132kV Manjhaul-Bakhri S/C line charged on 15-11-2017*
- *132kV Balia-Bakhri S/C line charged on 16-11-2017*
- *132kV Purnea-Manihari S/C line charged on 19-11-2017*
- *132kV Manihari-Katihar S/C line charged on 19-11-2017*

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

In 139th OCC, West Bengal overdrawl pattern from the October to mid-November month was deliberated. West Bengal informed that corrective measures and arrangement of extra power will be done to mitigate such overdrawl. However, there was no substantial improvement noticed in real time operation.

Odisha overdrawl pattern was also deliberated in 139th OCC. SLDC, Odisha informed that the over drawl was mainly due to forced outage of units at GMR and Vedanta units. GMR Unit – 3 of 350 MW which was out since 15-11-2017 on coal shortage, synchronised on 29-11-17 at 00:26 Hrs. Vedanta all units except Unit – 2 were also in service from 29-11-17 on ward. Vedanta U-2 was out for maintenance work from 28-jun-2017. However, even after synchronization of above units there is no reduction in Odhsa overdrawl.

Overdrawl figure of West Bengal and Odisha from 01-12-2017 to 07-12-2017 are shown below:

State	West Bengal		Odisha	
Date	Over Drawl (MU)	Max. Over Drawl (MW)	Over Drawl (MU)	Max. Over Drawl (MW)
01-12-2017	1.53	287.07	4.09	389.32
02-12-2017	2.35	480.08	3.90	439.26

03-12-2017	2.19	512.66	2.40	404.48
04-12-2017	1.70	365.84	2.07	514.47
05-12-2017	3.38	429.64	3.32	424.48
06-12-2017	2.75	558.04	3.56	439.96
07-12-2017	3.81	489.10	3.16	497.66

West Bengal and Odisha may please deliberate the reason of continuous overdrawl and future action plan to mitigate such contingency situation.

West Bengal and Odisha are also advised to maximize their internal generation and increase their power purchase quantum in STOA/Power Exchange or from any other source to maintain their drawl as per schedule. In case of repetitive non-compliance of ERLDC instruction to curtail overdrawl during real time operation continues in future, ERLDC will have no other option but to approach appropriate commission with respect to erring entities.

ERLDC may present. WBSETCL and Odisha may explain.

Deliberation in the meeting

ERLDC made a detailed presentation highlighting the overdrawal pattern by both Odisha and West Bengal during November, 2017 and up to 14th December 2017. ERLDC informed that WBSEDCL operated PPSP under pump mode even during overdrawl situation. Odisha is overdrawing from the Grid even after availability of Vedanta units especially during morning peak hours. ERLDC also submitted that during the last OCC meeting also, the issue of overdrawal by both Odisha and West Bengal were discussed in details. Both the constituents were requested to ensure that drawal schedule from the grid is strictly adhered. Unfortunately, nothing positive in this respect has been observed.

SLDC, WB informed that they have sent several messages to WBSEDCL to control the overdrawal but response from WBSEDCL has not been forthcoming. Expressing their inability to control the overdrawal by WBSEDCL. SLDC, West Bengal suggested that ERLDC may disconnect the radial feeders to control the overdrawal, if necessary.

WBSEDCL representative was not available for discussion.

Odisha informed that even though Vedanta units are available they are not getting sufficient power from Vedanta. One unit of TTPS and some of the hydro generating units of Indravati HEP, Burla HEP and Balimela HEP were also not available for service. In view of above, they were compelled to overdraw from Grid.

Odisha added that their power supply position would improve within 20 days.

Member Secretary, ERPC observed that continous overdrawal by both Odisha and West Bengal showed that there is deficit in their respective system. They should meticulously balance their demand and supply in their respective system, if necessary, by entering into bilateral contract or other mode of procurement of power. They should not lean on the regional grid to bridge the difference between demand and supply. Continuous overdrawal is a gross violation of grid discipline and if the trend continues in future, ERLDC would have no alternative but to file petition before CERC to highlight the issue. Therefore it would be in the interest of both of these constituents that they exercise strict control over their drawl and adhere to the grid norms.

OCC advised SLDC, West Bengal to avoid Pump mode operation of PPSP during overdrawl situation.

After detailed deliberation, it was decided in the OCC meeting that ERLDC would monitor the drawal till first week of January, 2018. Thereafter, ERLDC would file a petition against West Bengal and Odisha in CERC if no appreciable improvement in drawal pattern is observed.

Item no. A4: OPERATION OF HYDRO POWER PROJECTS IN PEAKING MODE

CEA vide letter dated 18.07.17 informed that POSOCO has carried out operational analysis of various hydro stations in the country and observed that despite 40.6 GW of peaking hydro capacity only about 33 GW peak generation is carried out on all India basis. According to POSOCO, this is on account of a number of hydro stations, particularly in state sector, which are not being operated in peaking mode. In order to examine the above observation, a Sub-committee has been constituted by the MoP under Chiarperson, CEA with heads of POSOCO, NHPC, SJVN & THDC as members and Director (H), MoP as the Member Convenor. The Sub-Committee has held three meetings with the concerned hydro generating stations and concluded that there is scope for about 2000 MW additional power generation from hydro stations during peak hours.

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

ERLDC may present.

Deliberation in the meeting

ERLDC has presented the performance of the state hydro generators. Presentation is enclosed at ***Annexure-A4****.1.*

OCC advised GRIDCO to plan their hydro generation to meet their peak demand and avoid overdrawal from Grid.

ERLDC presented the generation schedule and dispatch of water of Teesta-III and Teesta V generators. Presentation is enclosed at ***Annexure-A4.2****.*

Teesta-III informed that Dikchu generation would not be available from 18th December 2017 to 1st week of January 2018. Teesta III requested to enhance their NOC during evening peak hours.

NHPC informed that consent for the enhancement of NOC from 782 MW to 1050 MW has been given to Teesta III up to 31st December 2017.

OCC advised Teesta-III to take consent from Teesta-V for enhancement of NOC.

Item no. A5: Performance of ISGS generators during RRAS

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

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

As per clause 9.13 of Detailed Operating procedure of RRAS

Quote -

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

- **Unquote**

Detailed performance of ER ISGS from RRAS point of view would be presented during the meeting.
ISGSs are therefore requested to exercise due care while declaring their respective DCs, so that actual generation as per the total schedule issued, can be maintained by them.

ERLDC may update.

Deliberation in the meeting

*ERLDC presented the performance of ISGA generators during RRAS. Presentation is enclosed at **Annexure-A5**.*

ERLDC informed that the performance of the NTPC generators during RRAS had improved.

ERLDC added that the performance of Farakka needed improvement.

NTPC informed that they are not able to maintain the generation as per schedule due to severe coal shortage. They are arranging imported coal and the coal shortage problem would be resolved soon.

Member Secretary, ERPC observed that NTPC Farakka should declare DC faithfully. Failure on the part of NTPC Farakka to adhere to the generation schedule would be construed as gaming.

OCC advised Farakka, NTPC to maintain the generation as per the schedule and advised to revise the DC if they can't able to maintain the schedule.

Item no. A6: Reactive Power performance of Generators

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

Power Plant	Max and Min Voltage observed for Nov 17 (KV)	Date for monitoring (Nov 17)
Farakka STPS	425, 409	11,13
Khalgaon STPS	432, 408	11,13
Talcher STPS	414, 403	23,11
Teesta	415,399	27,29
Bakreshwar TPS	412, 392	10, 11
Kolaghat TPS	430, 401	11,13
Sagardighi TPS	425, 405	11,13
MPL	423, 410	1,23
Mejia-B	426, 411	1,23
DSTPS	429, 414	1,23
Adhunik TPS	428, 409	23,11
Barh	433, 419	1,11
JITPL	420, 409	3,8
GMR	418, 405	3,8
HEL	429,394	10,11
Kodarma	424, 409	5,14

ERLDC may present the reactive performance.

Deliberation in the meeting

*ERLDC presented the performance of the generators. Presentation is enclosed at **Annexure-A6**.*

ERLDC informed that Khahalgaon, Barh and Sagardighi units are not absorbing VAR as per their capability curve during high voltage.

OCC advised NTPC and WBPDCL to absorb reactive power during high voltage condition as per their capability curve.

PART B: ITEMS FOR DISCUSSION

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

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

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	January 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	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
5	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) Hardware supplied and installed. 2) SAT completed for pilot state 3) Protection database management software (PDMS) put in live w.e.f. 30.03.17. 4) Training on PDMS organised at ERPC, Odisha, Bihar, WBSETCL, Jharkhand and DVC.
6	BSPTCL	Renovation and up-gradation of 220/132/33 KV GSS Biharsharif, Bodhgaya, Fatuha, Khagaul, Dehri -on-sone & 132/33 kV GSS Kataiya	11/5/2015	Feb'2017	64.22 crore	23.68 crore	Project is on going. Contract awarded for Rs.71.37 Cr till date.
7		Installation of capacitor bank at different 35 nos. of GSS under BSPTCL	5/9/2016	12th March 2019	18.88 crore		Approved (triparty agreement among NLDC, Govt. of Bihar & BSPTCL is in under process)

8		Renovation & up-gradation of protection and control system of 12 nos. 132/33 KV GSS under BSPTCL.		31st March 2018			Recommendation of appraisal committee is awaited. Estimated cost 54.69 crore.
9	DVC	Renovation and upgradation of control & protection system and replacement of Substation Equipment of 220/132/33 kV Ramgarh Substation	02.01.2017	01.06.2019	25.96 Cr	2.596 Crore	Work awarded for 1.07 crore. Price bid opened for 27.18 crore and is under evaluation.
10		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	16.05.2017	24 Months from the date of release of fund.	144.71 Cr.	Nil	First installment is yet to be received. Work awarded for 6.45 crores
11	WBPDCL	Implementation of Islanding scheme at Bandel Thermal Power Station			1.39 Cr		Award placed to ABB. Material delivery by Dec, 17.
12		Upgradation of Protection and SAS			26.09		Approved by Ministry of Power
13	OHPC	Renovation and up-gradation of protection and control system of 4 nos OHPC substations.			***22.35 Cr***		Tendering under progress.
14	Powergrid	Installation of STATCOM in ER		June 2018	***160.28 Cr***	*63.028 Cr*	work is in progress, eexpected to complete by June 2018
15	JUSNL	Renovation and up-gradation of protection system		*138.13 crores*			Approved by Appraisal Committee.
16a	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.
16b		Training on Power market trading at NORD POOL Academy for Power System Engineers of Eastern Regional Constituents					

In 139th OCC, all the constituents were advised to send the update on work progress and completion target dates to ERPC within 3 days.

Respective constituents may update.

Deliberation in the meeting

DVC, WBSETCL and Powergrid updated the latest status as mentioned in above table.

OCC advised OPTCL and BSPTCL to send the details of work progress and target date of completion to ERPC.

Item No. B.2: 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-B2**.

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

Constituents may update.

Deliberation in the meeting

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.

Item No. B.3: 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-B3**.

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 139th OCC, all the members were advised to submit their comments to ERPC vide mail (mserpc-power@nic.in) within five working days.

Members may discuss and decide.

Deliberation in the meeting

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

Item No. B.4: Status of UFRs healthiness installed in Eastern Region

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

OPTCL may submit.

Deliberation in the meeting

OPTCL submitted the healthiness certificate.

Item No. B.5: Healthiness of SPS existing in Eastern Region

GMR, JITPL, CESC, & NTPC (TSTPS) have submitted the healthiness certificate for the month of November, 2017.

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

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.

In 139th OCC, it was decided that testing of Rangpo SPS will be done on 15th day of every month.

Vedanta, Chuzachen and Powergrid may submit the healthiness certificate for November 2017.

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

Deliberation in the meeting

Powergrid ER-II & Odisha Projects have submitted the healthiness certificate.

OCC advised Powergrid ER-I, Vedanta and Chuzachen to submit the healthiness certificate.

Item No. B.6: Electricity Generation Targets for the year 2018-19 – CEA

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

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

i) The unit wise yearly generation (with unit -wise monthly breakup) proposed during 2018-19 as per the format given along with the fuel availability, the anticipated loss of generation on account of various reasons such as grid constraint, low schedule/ reserve shut down due to high cost, poor quality coal/lignite etc, if any, may also be furnished (**Annex-I (1 to 5))**

ii) Utilities who have their Power Purchase Agreement (PPA) with various Discoms, Trader, States etc, details may be furnished in MW for Long, Medium and Short term to enable us to assess the expected generation for next year (**Annex –I (point no 6)**).

iii) The details of coal linkage from coal agencies and availability of secondary fuel oil/gas/ liq fuel may also please be furnished (**Annex- I (point no 7 (a) and (b))**).

iv) Production cost, Unit wise cost of generation and rate of sale of power may also be furnished. **(Annex – I (point 8))**

v) Details of unit-wise schedule of Planned Maintenance as approved by the respective RPCs (Regional Power Committees), unit-wise R&M planned to be carried out during 2018-19, may also be considered for deciding the generation targets (**Annex- II**).

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

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

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

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

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

Members may furnish the above data at the earliest.

Deliberation in the meeting

OCC advised all the constituents to refer the annexure and send the relevant information at the earliest to CEA electronically at the email address ***targetopmcea@gmail.com, prathamkumar@gmail.com*** *with a copy to ERPC (e-mail:* ***mserpc-power@nic.in****).*

Item No. B.7: Data for preparation Load Generation Balance Report (LGBR) of ER for the year 2018-19

As per the IEGC, RPC Secretariat is responsible for finalization of the Annual Load Generation Balance Report (LGBR) for Peak as well as Off-peak scenarios and the annual outage plan for the respective region

To facilitate the preparation of LGBR of Eastern Region by ERPC Secretariat within the schedule period, the following data/information for the year **2018-19** in respect of the constituents/utilities of Eastern Region is urgently required:

i) The unit wise and station wise monthly energy generation proposed from existing units during 2018-19 (thermal/hydro/RES).
ii) Annual maintenance programme for each of the generating units (thermal and hydro both).
iii) Generating units under R&M / long outage indicating date of outage and reasons of outage and expected date of return (thermal and hydro both).
iv) Partial and forced outage figures (in %) of generating units for the last 3 years.
v) Month wise peak demand (MW) – restricted and unrestricted peak demand.
vi) Month wise off-peak demand (MW).
vii) Month wise energy requirement (in MU).
viii) Month wise & source wise power (both MU & MW) purchase and/or sale plan.
ix) Schedule of commissioning of new generating units during 2018-19 and unit-wise monthly generation programme (in MU).
x) Allocation of power from new generating units.
xi) Month wise and annual planned outage of transmission system (Transmission lines 220kV and above / ICTs / Reactors/ other elements.

Information may please also be submitted in the form of soft copy through email (mail ID: **mserpc-power@nic.in / pkderpc@gmail.com**).

Members may furnish the above data at the earliest.

Deliberation in the meeting

House was informed that LGBR meeting will be held on 20.12.2017(i.e. the next day) at ERPC, Kolkata.

OCC advised all the constituents to attend the meeting.

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

B.8.1. Status of commissioned Islanding Schemes in Eastern Region

At present, the following islanding schemes are in service:

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

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

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

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

NTPC vide letter dated 24.11.2017 informed the following

- Bay equipment, Auto transformers and protection system at both FSTPS and Lalmatia are healthy. However, bay equipment (CT, CVT, CB, isolators), Auto transformer and protection system are very old. Spares and service support from the OEM are not available due to obsolescence. In case of any equipment failure, defect and relay malfunction, the situation will be difficult to manage.
- NTPC, Farakka has already communicated the issue to ECL for urgent hand over of O&M of Farakka-Lalmatia transmission system.

Members may note.

Deliberation in the meeting

Members noted.

B.8.2. Bandel Islanding Scheme, WBPDCL

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

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

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

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

In 139th OCC, WBPDCL informed that the material would reach by December 2017.

WBPDCL may update the latest status.

Deliberation in the meeting

WBPDCL informed that most of the materials have reached the site and the installation would commence soon.

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

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

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

In 138th OCC, ERLDC informed that the feeders list needs to be reviewed in view of growth of network interconnection and change of load distribution.

SLDC, Bihar updated the feeders list as follows:

- 132kV Banka(PG)-Banka D/C line (60 MW)
- 132kV Banka(PG)-Sultanganj D/C line (80 MW)
- 132kV Ara(PG)-Jagdishpur S/C line (45 MW)

Jharkhand updated the feeders list as follows:

- 132kV Manique-Chandil line (35 MW)
- 132kV Patratu-Basal (32MW)

West Bengal updated the feeders list as follows:

- 220kV Dalkhola(PG)-Dalkhola(WB)
- 220kV Birpara(PG)-Birpara(WB)
- 132kV Malda(PG)-Malda(WB)

DVC vide mail dated 12th December 2017 informed that, for any constituents opening of any tie lines, thru which power is being drawn, may produce countervailing effects on the state remaining tie lines. Such act may further endanger the stability of the state. ERLDC may do, as a first step, that constituent's drawal/injection schedule may unilaterally be revised with the existing regulation of IEGC and may disconnect the radial lines, if any as a 2nd step for reduction of state demand. In case of DVC, it is sometime observed that over-drawal of some tie lines with neighbouring state create over-drawal by DVC and hence, disconnection of such tie lines will give desired affect towards reduction of demand and over-drawal by DVC.

Name of the tie lines are:
1. S/C, 132KV, MHS-Jamtara line.
2. S/C, 132KV, Chandil-Manikui.
3. D/C, 220KV, Waria- Bidhannagar.

OPTCL may update. DVC may explain.

Deliberation in the meeting

OCC opined that revision of schedule in this case is not possible.

DVC informed that they will submit the updated list of tie lines.

OCC advised OPTCL to update the list of feeders at the earliest.

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

OPTCL has submitted DPR of the ADMS planned by them. The scheme envisaged is summarized as follows:

- Automatic tripping of lower voltage level(33KV)

  The trip signals are initiated from the ADMS Server at SLDC Control Centre and are broadcast to the various substations via OPGW/MPLS/GPRS where appropriate feeder tripping is carried out to balance the grid. Generally the trip signals issued are for covering a relief of 150MW in steps of 40MW.The scope of the project includes the development of logic for initiation of remote trip signals and implementation at 100 Substations. (List of the s/s is not given)

- Redundancy of ADMS server (Both central and back up)
- Input will be taken from SLDC SCADA

Each DISCOM will presently be monitored for 5 Nos. Groups (Configurable up to 8Nos) having 5 Nos. substations (Configurable up to 8Nos) in each Group. End substations equipment i.e. AFTS will be capable to extend signal to minimum 8 different feeders and expendable up to 16 feeders. The tentative logic as per the present regulations is as given below. The logic is software implemented and may be modified from time to time.

1. System Frequency < 49.9 Hz
2. Odisha over-drawl > 150 MW
3. DISCOM over-drawl > (40 MW)

If these conditions get satisfied for more than 5 min, first group will be shed. After shedding of first group, ADMS for any particular DISCOM will be blocked for 30 min. If same condition prevails for the next 5 minutes (i.e. 31 to 35), next group will be shed and so on.

The following points may be clarified:
- Condition for re-connection of disconnected load.
- Remedial action for high O/D at frequency > 49.9 Hz

OPTCL may explain. Jharkhand and Bihar may kindly share the status of implementation.

Deliberation in the meeting

OPTCL informed that reconnection of disconnected loads will be done manually.

ERLDC has placed 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	Bihar	F <49.7 AND deviation > 12 % or 150 MW	Not Known	F <49.9 AND deviation > 12 % or 150 MW
2	Jharkhand	Yet to provied		
3	DVC	F <49.7 AND deviation > 12 % or 150 MW	17.06.2016	F <49.9 AND deviation > 12 % or 150 MW
4	Odisha	1. System Frequency < 49.9 Hz 2. Odisha over-drawl > 150 MW 3. DISCOM over-drawl > (40 MW)	10 Months	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
5	West Bengal	F <49.7 AND deviation > 12 % or 150 MW	25.11.16	F <49.9 AND deviation > 12 % or 150 MW

OCC felt that ADMS is demand management scheme and it is not an emergency scheme. Hence it should be linked with normal IEGC operating frequency range and not to the emergency frequency limits. With frequency < 49.7 Hz logic, the purpose of ADMS would be defeated.

Constituents expressed that there would be frequent tripping of lines with the logic, frequency < 49.9 Hz.

OCC advised all the constituents to implement the ADMS scheme first. Then the logic would be reviewed after implementation.

Jharkhand informed that they have to install new RTUs for implementation of ADMS and it would take around 9 months.

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

B.11.1. 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 139th OCC, BSPTCL informed that the line will be commissioned by 30th November 2017.

BSPTCL may update the latest status.

Deliberation in the meeting

BSPTCL informed that the line was tripped on busbar protection. Testing is in progress and the line would be commissioned by 31st December 2017.

B.11.2. Long outage of 400 kV Barh – Motihari D/C

400 kV Barh – Motihari – D/C were out since 14th Aug, 2017 as 24 numbers of towers were submerged in Gandak River due to flood like situation. Right Now Motihari is drawing radial power from Gorakhpur S/S of Northern region through 400 kV Gorakhpur – Motihari D/C. Due to outage of 400 kV Barh - Motihari D/C, one inter regional link between Eastern and Northern region was out, which need to be restored with utmost priority to maintain all India reliable and safe power system operation.

In 138th OCC, It was informed that work for dismantling of bulged towers and establishment of ERSS tower of Barh-Motihari 400kV Line has just been started . As the location is not easily approachable, it would take 2 to 3 weeks to restore power flow through the line.

DMTCL vide letter dated 7th November 2017 informed that the line will be restored using ERS tower and submitted the schedule as follows:

400 kV Barh – Motihari line 1	by 7th December 2017
400 kV Barh – Motihari line 2	by 24th December 2017

DMTCL requested to consider the outage as deemed available as the lines were taken under shutdown due to Natural Calamity.

DMTCL need to submit fort-night progress report to ERLDC and ERPC till restoration.

DMTCL vide letter dated 11th December 2017 informed that the ERS Towers needs to be erected on the river bed for restoration of the line. However due to non-availability of proper anchorage, the erection of ERS towers is taking more than the anticipated time.

Also, there is no approach available for shifting of manpower & material at the locations and the same is being done with the help of boats.

In view of the above specified challenges being faced at site, this is to inform you that both the Ckts of above transmission line will be restored by 31st Dec 2017.

DMTCL may update. Members may discuss.

Deliberation in the meeting

DMTCL made a detailed presentation highlighting the difficulties they are facing in restoration of the line.

DMTCL informed that ERS Towers are to be erected on the river bed and both the Ckts of above transmission line would be restored on ERS towers by 31st Dec 2017.

DMTCL requested to consider the outage as deemed available as the lines were taken under shutdown due to Natural Calamity.

After detailed deliberation in OCC, it was unanimously decided that the outage of the lines may be considered as forced majeure condition and as such, would be eligible for deemed availability certification. OCC advised ERPC to issue certification of deemed availability to the extent the transmission licensee is able to recover the fixed charge of the concerned line(s) (not the incentive) during the period under the shut down.

B.11.3. 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.

DGPC added that they will discuss the issue with BPC in their coordination meeting scheduled to be held in November 2017 and update the action plan in next OCC meeting.

In 139th OCC, DGPC informed that the insulator replacement work is in progress.

OCC advised DGPC to place the completion schedule in next OCC meeting.

DGPC may update.

Deliberation in the meeting

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.

B.11.4. 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.

Powergrid added that the issue has been informed to Sikkim vide letter dated 20th September 2017.

Powergrid and Sikkim may update.

Deliberation in the meeting

It was informed that ERPC has communicated the issue to Sikkim vide letter dated 13th December 2017.

This agenda could not be discussed due to continuous absence of Sikkim representative.

B.11.5. 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 the work would be completed on availability of shutdown.

B.11.6. 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 Mar 2018*
2	Kishanganj	±200	2x125		*70% civil work completed. 30% switchyard equipment supplied. Expected to complete by June 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 the latest status as mentioned in above table.

B.11.7. Bus Splitting of Powergrid Sub-stations

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

- 400 kV Maithon ---Completed
- 400 kV Durgapur--Completed
- 400 kV Biharshariff— Completed

OCC advised ERLDC to operationalize the bus splitting scheme at Maithon in coordination with NLDC and Powergrid.

In 139th OCC, ERLDC informed that NLDC has given the concurrence to operationalize the bus splitting scheme at Maithon. Now 400kV Maithon-Raghunathpur line is under shutdown. The bus splitting scheme at Maithon will be put in service once all the lines available at Maithon by December 2017.

ERLDC may update.

Deliberation in the meeting

ERLDC informed that the bus splitting scheme at Maithon will be put in service by 1st week of January 2018.

B.11.8. Bus Splitting of Kahalgaon STPS Stage I&II, NTPC

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

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

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

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

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

In 138th OCC, NTPC informed that the bus splitting would be implemented by December, 2018.

NTPC may update.

Deliberation in the meeting

NTPC informed that Bus reactor is at site and Banka line I & II would be shifted by March 2018.

B.11.9. 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.

B.11.10. 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	*By Dec, 2017* *Bays at Ramchandrapur switchyard are not yet ready and the line is idle-charged from Chaibasa(JUSNL).*
2.	**Daltonganj 400/220/132kV S/s:**	
a.	Daltonganj (POWERGRID) – Latehar 220kV D/c	By Dec, 2017. 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.

B.11.11. 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***)	***Dec, 2017***
2.	**2x500MVA, 400/220kV Rajarhat ---**	
a.	Rajarhat-N. Town-3 (WBSETCL) 220 kV D/C line	Matching
b.	Rajarhat-N. Town-2 (WBSETCL) 220 kV D/C line	June, 2018
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. B.12: Status of 400 kV IndBharat – Jharsuguda – D/C Chief Electrical Inspector, CEA clearance-ERLDC

400 kV IndBharat – Jharsuguda D/C lines were charged with provisional Chief Electrical Inspector, CEA clearance up to 31st October, 2017, where in M/S IBEUL agreed to complete the diversion of the 400 kV IndBharat – Jharsuguda D/C line for increasing the height of the conductor over the four railway crossing of OPGC proposed railway line within time limit. Till date ERLDC neither have any update from Chief Electrical Inspector, CEA for any further extension after 31st October, 2017 nor any update from M/S IBEUL/ OPGC regarding completion of above diversion work.

Under the circumstances, ERLDC shall have no other option but to open both feeders of IBEUL from Jharsuguda, Powergrid end with effect from 00:00 Hrs 20-12-2017.

IBEUL and OPGC may update. Members may decide.

Deliberation in the meeting

IBEUL informed that they could not complete the work because of severe ROW issues and requested for the extension till March 2018 to complete the diversion of the 400 kV IndBharat – Jharsuguda D/C line.

OCC felt that since the original time frame was given by Chief Electrical Inspector, CEA, the time extension to complete the diversion of the line can not be granted by the OCC forum.

OCC advised IBEUL to approach Chief Electrical Inspector, CEA for time extension and advised to submit the CEA clearance by 31st December 2017. Otherwise the 400 kV IndBharat – Jharsuguda D/C lines would be opened from both ends as per the regulation.

ERLDC informed that payment of DSM charges are due to from IBEUL.

IBEUL agreed to clear the dues by January 2018.

Item No. B.13: 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 139th OCC, KBUNL informed that tender has been floated and the work will be awarded in November 2017. The work will be completed by March 2018.

KBUNL may update.

Deliberation in the meeting

It was informed that tender has been floated and the work will be awarded by end of December 2017.

Item No. B.14: Third Party Protection Audit & Inspection of Under Frequency Relays (UFR)

1. Status of 1st Third Party Protection Audit:

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

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	37	68.52
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	38	64.41
JUSNL	34	21	61.76
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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

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

DPRs have been submitted to PSDF committee.

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

Members may comply.

Deliberation in the meeting

Odisha and Bihar have submitted the latest status. The substation wise status of compliance are available at ERPC website.

2. Schedule for 2nd Third Party Protection Audit & UFR testing

Sl No	Proposed Date	Protection Audit Substations	UFR testing
1	1st week of Jan, 2018	400kV Jaypore(PG)	• UFR Testing at Jeynagar and Sunbedha • UFR Testing at Theruvali
2		220kV Jeynagar (OPTCL)	
3		400kV Indravati (PG)	
4		400kV Indravati (OHPC)	
5		220kV Theruvali (OPTCL)	

The 2nd third party protection audit observations of competed substations are available in the ERPC website in important documents.

PCC advised all the constituents to comply the observations at the earliest.

Members may note.

Deliberation in the meeting

Members noted for compliance.

Item No. B.15: 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 for compliance.

Item No. B.16: Certification through BIS as per IS 18001:2007 to all generating/ transmission units.

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

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

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

Members may note and update the status.

Deliberation in the meeting

Members noted for compliance.

Item No. B.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.

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

138th OCC advised all the respective constituents to ensure the availability of telemetry data to ERLDC.

ERLDC may present.

Deliberation in the meeting

*ERLDC presented the latest status of telemetry. Presentation is enclosed at **Annexure-B17**.*

ERLDC informed that New Farakka SCADA data is not available.

ERLDC placed the list of state wise substation data availability to ERLDC.

OCC advised all the respective constituents to go through the Annexure and ensure the availability of telemetry data to ERLDC.

ERLDC added that due FO communication link issue at Farakka-Malda OPGW , data of more than 18 nos of substations got disturbed and no telemetry & Voice was available from 17:34 Hrs 06-12-17 to 09:48 Hrs 07-12-2017.

OCC advised Powergrid to implement standby communication of the above OPGW.

Powergrid agreed explore.

a) Frequent failure of JITPL data to ERLDC:

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

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

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

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

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

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

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

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

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

In 139th OCC, ERLDC informed that JITPL data through PLCC is not yet restored.

JITPL may update.

Deliberation in the meeting

ERLDC informed that JITPL data through PLCC is not yet restored.

JITPL representative was not available in the meeting.

Item No. B.18: Need for expediting reactors at Subhashgram, Jamshedpur and Behrampur 400KV substations and adequate absorption of reactive power by power stations

Voltage of the following substations was above the allowable upper limit of 420kV for significant duration during October and November 2017:

Sub-station	% Duration >420kV October-17	% Duration >420kV November-17 (upto 19-11-17)
Jamshedpur	99	100
Baharampur	32	49

Subhasgram	25	37
Arambag	92	100
Farakka STPS	27	57
Barh STPS	100	76
Sagardighi TPS	20	21
PPSP	26	44
HEL	20	33

Further, one circuit of the following D/C lines is being frequently switched off to control high voltage during off-peak:

- 400kV Kharagpur – N. Chanditala
- 400kV Kharagpur – Kolaghat
- 400kV N. PPSP – Arambag
- 400kv Alipurduar - Bongaigaon
- 220kV Madhepura – N. Purnea

Therefore, Farakka, SgTPS, PPSP, Barh, HEL are requested to maximize reactive power absorption by their respective generating units. PGCIL may endeavour to commission the 50 MVAR line reactor at Subhasgram end of 400kV SgTPS – Subhasgram line, 2nd 125 MVAR bus reactor along with 50 MVAR old bus reactor which was out for commissioning work at Jamshedpur and new 125MVAR bus reactor at Baharampur at the earliest.

In 139th OCC, ERLDC informed that KTPS units are absorbing 20 MVAR during high voltage but there is a scope for absorbing 80 MVAR as per the capability curve. Sagardhigi units are not giving reactive power support during high voltage. ERLDC advised WBPDCL to provide GT tap position of Sagardhigi units.

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.

Powergrid informed that at Jamshedpur one reactor has been installed on 15th November 2017 and the other reactor will be installed by end of November 2017.

WBSETCL vide letter dated 6th December 2017 requested for opening of lightly loaded 400kV lines during lean hours to control high voltage.

Members may discuss.

Deliberation in the meeting

WBSETCL informed that the following lines may be opened during high voltage condition at lean hours:

- *One ckt of 400kV Sagardhigi-parulia D/C line*
- *One ckt of 400kV Chaibasa-kharagpur D/c line*

ERLDC opined that further opening of transmission lines is not advisable and they cannot operate the Grid with deficient transmission network. Instead of opening transmission lines, KTPS and Sagardhigi generators can absorb VAR as per their capability curve during high voltages.

ERLDC added that they will take a judicious decision during high voltage condition.

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 January 2018.

Powergrid informed that at Jamshedpur third reactor has been installed on 1st December 2017.

Item No. B.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-B19** 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.

Members may update.

Deliberation in the meeting

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

Item No. B.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-B20**.

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.

Constituents may update.

Deliberation in the meeting

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.

Item No. B.21: 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 December-2017 is given below:

Sl No	State/Utility	TTC import(MW)	RM(MW)	ATC (Import) MW
1	BSPTCL	4665	145	4520
2	JUSNL	980	60	920
3	DVC	1092	52	1040
4	OPTCL	1822	81	1741
5	WBSETCL	4700	300	4400
6	Sikkim			

In 139th OCC, ERLDC informed that the network data should be updated regularly on monthly for realistic calculation of ATC, TTC figures. A procedure has been made as follows:

- Updated Base case of Previous month both for peak and off peak case to be circulated by ERLDC by 2nd day of every month
- States have to update their network changes in the same case circulated by ERLDC till date and then load the LGBR of the upcoming month
- Updated case and calculated TTC of the upcoming month to be sent to the ERLDC by 10th of the current month

OCC felt that one base case should be circulated among the constituents in sequence so that whole ER network will be updated in same file.

ERLDC informed that base case along with network data of Eastern Region as per November, 2017 was circulated on 08-12-17 through mail. States were requested to update the network changes occurred in till date and send TTC along with base case updated with load generation balance as per estimated node wise load and generation pattern in the month of January, 2018.

Members may update. DVC may furnish net export capability.

Deliberation in the meeting

OCC advised all the states to update the network in PSSE file.

ED, ERLDC informed that they are planning for a workshop on computation of ATC & TCC computation and procedure of updating the network in PSSE.

Item No. B.22: Time correction of SEMs in Eastern Region – Replacement of heavily drifted SEMs

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

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

In 133rd OCC, Powergrid informed that 22 meters were replaced except Purnea. ERLDC informed that the performance of 22 newly installed meters are satisfactory and suggested that all other meters can be replaced.

OCC advised Powergrid to replace next 10% of heavily drifted meters as per the list.

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

In 138th OCC, Powergrid informed that 09 SEMs are yet to be replaced.

Further OCC decided to hold the replacement of SEMs till interfacing of Genus meters with AMR is resolved.

So far in Phase-II, 12 Meters has been replaced and Time Correction for 06 meters has been done. Details of meter to be replaced is as follows:

List of drifted meters to be replaced in Phase-II

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

In 139th OCC, It was informed that in view of removal of LILO of 400kV Rourkela-Raigarh line 1 at Vedanta, SEMs at Vendanta end are not required to change. Three numbers of SEMs are required to be changed in Phase-II.

OCC decided to change the pending three numbers of SEMs in Phase-II.

OCC decided to hold next phase SEM replacement till interfacing of Genus meters with AMR is resolved.

Powergrid/ ERLDC may update.

Deliberation in the meeting

Powergrid informed that interfacing issues of Genus meters with AMR have been resolved.

It was informed that all the Phase-II meters have been replaced except Kharagpur.

OCC advised ERLDC to prepare the list of meters to be replaced in next phase.

Item No. B.23: 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		220 KV Subhasgram(PG) S/C	WBSETCL/PGCIL	Charging of Line	
	3. Bantala		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

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

Deliberation in the meeting

BSPTCL informed that they cannot able to extract NPGC data.

OCC advised BSPTCL to communicate the issue to Powergrid.

WBSETCL was advised to install the meters at the earliest.

Item No. B.24: Integration of Genus Make meter in AMR-- ERLDC

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

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

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

In 138th OCC, Powergrid informed that integration of Genus meters with AMR is pending because time block identification problem. This problem will be resolved through software by TCS on payment basis within 15 days.

In 139th OCC, Powergrid informed that integration of Genus meters with AMR will be completed within 20 days. Powergrid added that additional financial implication of 10 Lakhs (approx) has been taken into consideration as per LOA.

Powergrid may please update the status.

Deliberation in the meeting

Powergrid informed that the integration issues of Genus meters with AMR have been resolved.

Item No. B.25: Accounting of Tertiary Loading Arrangement at PGCIL s/station in ER

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

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

In 138th OCC, ERLDC informed that they are not getting the data of Biharshariff and Rengali.

Powergrid informed that SEMs are to be replaced at Biharshariff and Rengali. They will replace the SEMs and send the data.

It was also decided that the energy through Tertiary as state drawal and the meter reading will be sent to ERPC with immediate effect.

Accordingly Tertiary drawl of PGCIL S/s has been added to the respective state drawl wef 23.10.17.

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

List of PGCIL substation with Tertiary Loading in ER & Odhisa Project								
ER-I								
S. No	**S/Station**	**Loc ID**	**Meter No**	**Make**	**CTR**	**PTR**	**Remarks**	**Data Receipt**
1	Banka	ES-88	NP-7458-A	L&T	50	33000/110		Yes
2	Lakhisarai	ES-94	NP-8870-A	L&T	50	33000/110		Yes
3	New Ranchi(765)	ES-87	NP-8752-A	L&T	50	33000/110		Yes
4	New Purnea	ES-98	NP-5249-A	L&T	50	33000/110		Yes
5	Patna	ES-89	ER-1285-A	Genus	50	33000/110		Yes
6	Pusauli	ET-06	NP-8646-A	L&T	50	33000/110		Yes
7	Muzaffarpur	ET-02	NP-5231-A	L&T	1000	415/110		Yes
9	Kishanganj	ES-90	NP-8876-A	L&T	50	33000/110		Yes
11	Ara(220)	ES-99	NP-8893-A	L&T	50	33000/110		Yes
12	Chaibasa	ET-15	ER-1254-A	Genus	50	33000/110		Yes
13	Ranchi(400/220)	ET-14	ER-1251-A	Genus	50	33000/110		Yes
14	Jamshedpur	ET-20	ER-1259-A	Genus	50	33000/110		Yes
15	Gaya(765)	EM-99	ER-1263-A	Genus	50	33000/110		Yes
16	Biharshariff	ET-01	NP-2355-A	SECURE	1000	415/110		No
ER-II & Odhisa Project								
1	Angul	ES-95	NP-5942-A	L&T	1000	415/110		Yes
2	Pandiabili	ES-39	NP-7462-A	L&T	1000	415/110		Yes
3	Rangpo (33 kv TRF)	ES-96	NP-7940-A	L&T	1000	415/110		Yes
4	Rangpo (11 KV AUX TRF)	ES-97	NP-7941-A	L&T	1000	415/110		Yes
5	Sundergarh	ES-93	ER-1019-A	Genus	50	33000/110		Yes
6	Maithon	ET-07	NP-7934-A	L&T	1000	415/110		Yes
7	Baripada	EM-69	NP-5909-A	L&T	1200	400/110		Yes
8	Durgapur	ET-04	NP-6024-B	L&T	200	400/110		Yes
9	Keonjhar	ET-11	NP-7921-A	L&T	50	33000/110		Yes
10	Subhashgram	ET-12	ER-1105-A	Genus	1000	415/110		Yes
13	Jeypore	ET-10	NP-5965-A	L&T	20	430/110		Yes
11	Bolangir	ET-03	NP-7951-A	L&T	1000	415/110		Yes
12	Rengali	ET-05	ER-1020-A	Genus	1000	415/110		Yes

Since Darbhanga and Motihari DMTCL S/S Tertiary is also loaded, Meters at Tertiary Tr/f of above s/s is required to be installed and Drawl should be accounted in BSPHCL net drawl.

ERLDC and Powergrid/DMTCL may update.

Deliberation in the meeting

DMTCL informed that meter has been installed at their tertiary and the details have been submitted.

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

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

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

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

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

POWERGRID may update the status.

Deliberation in the meeting

*Powergrid submitted the latest status of PMU installation, which is enclosed at **Annexure-B26**.*

Item No. B.27: Status of Disturbance Recorder, Stand alone Event Logger and Time Synchronization equipment.

The status of DR/EL and GPS as updated in previous OCCs is enclosed at **Annexure-B.27**.

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

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

Members may update.

Deliberation in the meeting

Members noted.

Item No. B.28: Status of Emergency Restoration System (ERS Towers) for Eastern Region constituents

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

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

Latest status is enclosed at **Annexure- B.28**.

In 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 update the latest status.

Deliberation in the meeting

Members noted.

Item No. B.29: Mock Black start exercises in Eastern Region – ERLDC

i) <u>The status of black start exercises</u>

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	*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 30th November 2017
4	U. Indarvati	3rdweek ofJune 2017	November 2017	2ndweek of February2018	*January 2018*
5	Subarnarekha	1stweek of October 2017	Done on 14th October 2017	1stweek of January2018	
6	Balimela	3rdweek of October 2017	November 2017	1stweek of March 2018	*January 2018*
7	Teesta-V	2ndweek of Nov 2017		Last week of February2018	Last week of December 2017
8	Chuzachen	Last Week of May2017	May, 2017	January2018	
9	Burla	Last Week of June 2017	Dec, 2017	Last week of February2018	Feb. 2018
10	TLDP-III	1stWeek of June 2017	After 12the Dec, 2017.	2ndWeek of January2018	
11	TLDP-IV	Last Week of June 2017	After Mansoon	1stWeek of February2018	
12	Teesta-III		December 2017		6th January 2018

OHPC informed that the black start operation of Unit-3 of Rengali P.H. has been successfully completed on 30.11.2017 at 11:54Hrs.

Members may update.

<u>Deliberation in the meeting</u>

Members updated the schedule as mentioned in above table.

<u>Testing of DG sets meant for Black start</u>

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

Constituents may kindly ensure compliance.

<u>Deliberation in the meeting</u>

Members noted for compliance.

Item No. B.30: 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-B35**.

Analysis of governor response for the following event:

(1) On 12.11.17 at 07:14 Hrs, all outgoing lines from Talwandi Sabo TPS (in Punjab) tripped causing loss of 1097 MW generation due to loss of evacuation path. Frequency of the national grid dropped by 0.06Hz.

Members may update. ERLDC my present.

Deliberation in the meeting

*ERLDC presented the performance of the generators. Presentation is enclosed at **Annexure-B35A**.*

ERLDC added that generator response calculated by individual generators was received from MPL, DVC and CESC.

OCC advised all the generators to go through the details in Annexure-B35A and take appropriate action to improve the performance. OCC also advised to calculate the response and send the results to ERLDC with all the details.

Item No. B.31: Ratification of projected Demand and generation for POC transmission charges and loss calculations for Q4(2017-18)

The projected Demand and Generation of ER constituents to be considered in the base case for POC transmission charge and loss calculations for Q4 (Jan 18-March 18) are attached at **Annexure-B36** for ratification by the constituents.

Members may kindly go through and confirm.

Deliberation in the meeting

Members noted.

Item No. B.32: Schedule for reactive capability tests

The following was status of regarding reactive capability testing:

a. Adhunik TPS(both units) –Yet to be confirmed by Adhunik
b. JITPL(both units) – After the emergent inspection of OEM(BHEL)
c. Barh TPS – November 2017
d. Raghunatpur – by December 2017
e. GMR (Three units)- January 2018
f. Haldia TPS –Done in October 2017

Members may update.

Deliberation in the meeting

GMR informed that testing of their generating units can be done in January 2018.

Item No. B.33: Non Payment of dues--Powergrid-Odisha

A. **JITPL**: Rs. 1.67 Crore from M/s JITPL (Rs. 1.12 Crore towards bay maintenance + Rs. 52.38 Lakh towards interest charges + Rs. 2.36 Lakh towards project consultancy)
B. **GMR**:Rs.37.99 Lakh is due from M/s GMR towards Bay maintenance charges

C. **Ind-Bharath Energy(Utkal) Ltd(IBEUL):** Rs.74.16746 Lakh is due from M/s Ind-Bharath (Utkal) Energy Limited towards Bay maintenance and Interest charges.

Deliberation in the meeting

GMR informed that they have cleared the dues.
IBEUL agreed to clear the dues by January 2018.

Item No. B.34: 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.

It is requested to deliberate the matter so as to facilitate recovery of such loss to the Generators."

Members may discuss.

Deliberation in the meeting

It was informed that ERPC and ERLDC would study the issue in details and place the details in next OCC meeting.

Item No. B.35: 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.

Members may discuss.

Deliberation in the meeting

It was informed that ERPC and ERLDC would study the issue in details and place the details in next OCC meeting.

PART C:: OPERATIONAL PLANNING

Item no. C.1: Anticipated power supply position during January'18

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of January'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-C.1**.

Members may confirm.

Deliberation in the meeting

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

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

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

- Teesta V Unit #2 shutdown from 23rd December 2017 to 12th January 2018 for Annual Maint.
- Teesta V Unit #3 shutdown from 14th January 2018 to 3rd February 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 January, 2018 is given at **Annexure-C.2**.*

1. **Requisition of S/D of 400kV D/C Binaguri-Bongaigaon line for Conductor repairing work --Powergrid**

400kV Binaguri-Bongagigaon D/c lines were kept under S/D time to time due to over-voltage constraints as per ERLDC instructions. During this S/D periods, at several locations, outer-layer of conductor has been theft by miscreants. Presently we are planning to rectify all those locations through replacement with fresh conductors where damage is severe and through conductor lapping where few strands have been cut.

In order to carry-out the above work, S/D is required for 10 days each ckt at a time wef 15th Jan-2018.

In 139th OCC, it was informed that shutdown would be available subjected to NLDC approval.

Members may note.

Deliberation in the meeting

Members noted.

2. **SHIFTING OF TWO NOS. TOWERS OF RAILWAY CROSSING (HOWRAH-NEW DELHI ROUTE) NEAR SHIVSAGAR(LOC NO.338 & 339) OF 765Kv GAYA-VARANASI CKT-2 DUE TO BENDING OF MAIN LEG--Powergrid**

During patrolling of lines after monsoon season the railway crossing location no.338 & 339 of 765 Gaya-Varanasi ckt-2 near Shivsagar have been found damaged. From the nature of damage of towers it is being suspected that the tower would have damaged due to severely localized cyclone in that area. The condition of towers is very critical and it may collapse any time due to high wind pressure. During this monsoon season POWERGRID Eastern Region-I witnessed tower collapsed of other three lines also which have restored.

The commencement shifting of tower location 338 & 339 have been planned from 1st week of January'2018 and completion by mid of January-18. During the restoration work the said line will be under continuous shutdown.

In view of the above, the said outage period may be treated as force majeure condition i.e. beyond the control of POWERGRID and the outage shall be excluded for the purpose of availability.

Members may approve.

Deliberation in the meeting

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

3. RECTIFICATION OF DEFECT OF 765Kv GAYA-VARANASI-TRANSMISSION LINE-I AT TOWER LOCATION NO.448--Powergrid

During routine patrolling of 765kV Gaya-Varanasi-I transmission line, main diagonal member of one leg of tower at location no.448(A+3) found bent and twisted. From the nature of damage of towers it is being suspected that the tower would have damaged due to severely localized cyclone in that area. The condition of towers is very critical and it may collapse any time due to high wind pressure. During this monsoon season POWERGRID Eastern Region-I witnessed tower collapsed of other three lines also which have restored.

The commencement shifting of tower location.448 have been planned from 3rd week of January,2018 and completion by mid of February,2018. During the restoration work the said line will be under continuous shutdown.

In view of the above, the said outage period maybe treated as force majeure condition i.e. beyond the control of POWERGRID and the outage shall be excluded for the purpose of availability.

Members may approve.

Deliberation in the meeting

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

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

(i) Thermal Generating units:

Sr. No	Generating Station	Unit Number	Capacity(MW)	Reasons For Ouatge	Outage Date
1	MPL	1	525	OVER HAULING	27-Oct-17
2	KAHALGAON	1	210	OVER HAULING	15-Nov-17
3	TALCHER	1	500	ANNUAL OVERHAULING	25-Nov-17
4	MEJIA B	8	500	VIBRATION PROBLEM IN BEARING	7-Aug-17

				,turbine blade damage	
5	VEDANTA	2	600	MAINTENANCE	28-Jun-17
6	BUDGE BUDGE	2	250	MAINTENANCE	24-Nov-17
7	ADHUNIK	2	270	FLAME FAILURE INITIALLY ,LATER GENERATOR VIBRATION	7-Sep-17
8	JITPL	2	600	HEAVY BONNET LEAKAGE FROM EMERGENCY BOILER DRAIN VALVE	9-Nov-17
9	RAGHUNATHPUR	1	600	COAL SHORTAGE	14-Nov-17
10	KOLAGHAT	6	210	STATOR EARTH FAULT	11-Jun-17
11	MEJIA	5	250	INITIALLY OUT ON BTL,PRESENT PROBLEM IS IN BARRING GEAR	22-Sep-17
12	WARIA	4	210	TUBE LEAKAGE	5-Dec-17
13	SANTALDIH	5	210	ROTOR EARTH FAULT	30-Apr-17
14	SAGARDIGHI	4	500	COAL SHORTAGE	9-Nov-17
15	SAGARDIGHI	2	300	BOILER TUBE LEAKAGE	16-Nov-17
16	KBUNL STG II	2	195	COOLING WATER PROBLEM	3-Nov-17

(ii) Hydro Generating units:

Sr. No	Generating Station	UNIT NO	CAP(MW)	REASONS FOR OUTAGE	OUTAGE DATE
1	BURLA	5	37.5	R & M WORK	25.10.2016
2	BURLA	6	37.5	R & M WORK	16.10.2015
3	CHIPLIMA	3	24	R & M WORK	15.10.2015
4	BALIMELA	1	60	R & M WORK	05.08.2016
5	U.KOLAB	2	80	Repair of MIV & Draft tube gate leakage	28.05.2017
6	RENGALI	5	50	Hoist gate problem	21.03.17
7	RENGALI	1	50	Stator Earth fault	08.09.17

(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 MOTIHARI-BARH-I & II	DMTCL	14.08.17	24 NO OF TOWERS IN GANDAK RIVER WHERE WATER LEVEL IS HIGH
220 ALIPURDUAR SALAKATI D/C	POWERGRID	17.11.17	TOWER BENDING IN LOCATION 196
220 KV BUDHIPADAR KORBA- I	POWERGRID	1.11.17	MULTI CKT TOWER ERECTION AND DIVERSION WORK FROM LOC 29 to 40

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

Members may update.

Deliberation in the meeting

Members noted.

Item no. C.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	400kV Sterlite-Jharsuguda D/C	
7	765kv Anugul-Srikakulum D/C	
8	400kV Sasaram-Daltonganj D/C &Daltonganj S/Stn	
9	400 kV Ranchi-Raghunathpur D/C	
10	220 kV TLDP-IV – NJP ckt-2	
11	220 kV Bidhansai-Cuttack D/C	
12	220kV Gola- Ranchi	

Members may update.

Deliberation in the meeting

Members noted.

PART D:: OTHER ISSUES

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

System frequency touched a maximum of 50.27 Hz at 06:02 Hrs of 19/11/17 and a minimum of 49.62 Hz at 06:40 Hrs of 07/11/17. 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. D.2: Non-compliance of directions issued by SLDC

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

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

No report from any constituent has yet received. Hence, ERLDC would be considering 'Nil' report for all constituents for November'17.

Members may note.

Deliberation in the meeting

Members noted.

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

Sr No	GD	Disturbance Place	Date	Time	Gen loss (MW)	Load loss (MW)	Remarks
1	GD-I	Motipur	02/11/2017	13:18	0	66	At 13:18 Hrs total power failure occurred at Motipur, Musari, Darbhanga, Madhubani, Jainagar, Phoolparas due to tripping of 220 KV Darbhanga-Motipur D/C due to Y-B-N fault. At the same time, 220 KV Muzaffarpur (MTPS)-Motipur D/C also tripped.
2	GD-I	Birpara(WB)	03/11/2017	14:43	0	70	Total power failure occurred at 132 KV Birpara S/S (WB) when 132 KV Birpara-Birpara D/C tripped due to failure of B phase LA of 132 KV Birpara-Birpara-II at WB end. At same time, 132 KV Birpara-Birpara-I tripped from WB end on directional E/F
3	GD-I	Tashiding	12/11/2017	01:36	40	0	At 01:30 hrs 220 kV Tashiding - New Melli S/C and 220 kV Tashiding - Rangpo S/C tripped in Y-N fault resulting generation loss of 40 MW due to loss of evacuation path.

4	GD-I	Sultanganj	13/11/2017	02:50	0	38	Total power failure occurred at Sultanganj and Hatidah after tripping of 132 kV Banka – Sultanganj D/C, Ckt I tripped from Sultanganj only and Ckt II tripped from Banka only.
5	GD-I	Patratu	23/11/2017	11:56	0	145	220 kV main bus II at Patratu was under shutdown. So all elements were connected to main bus I. At 11:55 hrs 220 kV TVNL - Patratu S/C and 220 kV Hatia - Patratu D/C tripped resulting total loss of power supply at 220/132 kV Patratu S/S. Delayed fault clearance was observed in Y & B phases. During restoration both units at TVNL were tripped at 12:52 hrs. Voltage fluctuation was reported at TVNL bus.
6	GD-I	Melli	29/11/2017	05:52	0	32	Due to flashing of PG clamp of line bay of 66 kV Kalimpong - Melli S/C, 132 KV Sagbari-Melli S/C, 132 KV Siliguri-Melli S/C and 132 KV Rangpo-Melli S/C were switched off resulting total power failure at 132/66 kV Melli S/S and its surrounding area

Members may note.

Deliberation in the meeting

Members noted.

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

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

Members may note.

Deliberation in the meeting

Members noted.

Item no. D.5: Additional agenda

Meeting ended with vote of thanks to the chair.

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Annexure - A

Participants in 140th OCC Meeting of ERPC

VENUE: ERPC CONFERENCE ROOM,KOLKATA **TIME: 12:00 HRS** **DATE:19.12.2017 (TUESDAY)**

Sl. No.	Name	Designation & Organisation	Contact Number	E-mail Id	Signature
1	J.BANDYOPADHYAY	MS,ERPC	9432326351	mserpc-power@gov.in	
2	P.MUKHOPADHYAY	ED,ERLDC	9869438073	pmukhopadhyay@posoco.in	
3	G. MITRA	DGM, ERLDC	9831297392	goralmitra@posoco.in	
4	S.BANERJEE	DGM, ERLDC	9433041823	surajit.banerjee@powergrid.in	
5	S.K. HAZRA	DGM, PowerGrid	9433041809	SKhazra@powergridindia.com	
6	B. Pan	CE-I/SLDC/DVC	9903247102	bpan.dvc@gmail.com	
7	S.K. Sharma	AGM(OS), ER-I, NTPC	9471008359	skshamra06@ntpc.co.in	
8	S.K. MISHRA	DGM(OS), ER-II, NTPC	9438233207	SKmishra05@ntpc.co.in	
9	S.P. RATH	MGR.(E), TEESTA-V PS NHPC LTD	8170005662	Sekti1975@gmail.com	
10	Md. Yusuf	Asst. Manager(E) NHPC LTD	9650010255	mdyusuf1987@gmail.com	
11	M. PRASAD	HEAD(PMD), DGPC CO	+975 17610621	m.prasad400@druknet.com	
12	C. [illegible]	Manager	17672736	[illegible]	
13	Biplab Chatterjee	GH (OPS)	9204857100	bpbab.chatterjee@tatapower.com	
14	Raj Protim	Sr. Engr. (ERLDC)	9903329591	rayprotim@posoco.in	
15	T.R. Mohapatra.	Manager (ERLDC)	9433041873	trmohapatra@posoco.in	
16	Rajesh yadav	manager(DMTCL)	8750804671	rajesh.yadav@infra.essel groups.com	
17	Amit Kumar	GM - DMTCL	9717196796	amit.kumar1@infra.essel group.com	
18	Brajesh Shukla	Lead (POWERLINK) Eastern Region	9800013837	brajesh.shukla@tatapower.com	
19	M. Viswanadh	CM, ERLDC	9433041871	mviswanadh@posoco.in	
20	Amit Chowdhury	Engineer, ERLDC	8584072089	AKchowdhury@posoco.in	

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

Participants in 140th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 19.12.2017 (Tuesday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
21	Biben Agarwal	ERLDC,	9903071710	biben@posoco.in	[signature]
22	Manoj Ku. Thakur	ERLDC	9432351832	manoj.thakur@posoco.in	[signature]
23	Jitendra Prasad Malik	Manager GMR	9777456737	jitendra.malik@gmrgroup.in	[signature]
24	Jigme Dorji	Engineer/BPCL	17661748	jigmedorjicst@gmail.com	[signature]
25	Tshewang Jamtsho	EE, DGPC	17315227	t.jamtsho791@druknet.com	[signature]
26	S. Wangdi	EE/CHP	+975-17702091	[illegible]@gmail.com	[signature]
27	Tenzin Wangda	Engineer/KHP	+975-17597374	tenzinwangdakhp@gmail.com	[signature]
28	B. B. Bhoi	Dy Mgr ERLDC	9432351830	[illegible]@gmail.com	[signature]
29	ANJAN KR. DAS	CM/POWERGRID	9434740029	anjandas@powergridindia.com	[signature]
30	S. K. SAHU	CM/POWERGRID	9078883643	sksahu@powergridindia.com	[signature]
31	S. A. Ansari	Dy. Manager	9431820252	shabbir.bit9@gmail.com	[signature]
32	S. Koner	Ch. Mgr	9436335370		[signature]
33	Chandan mallick	Engr ERLDC	9007053660	chandan.mallick@posoco.in	[signature]
34	Nadim Ahmad	Manager ERLDC	9432351831	nadim@posoco.in	[signature]
35	N. G. Saha	DGM (OS)	8336903700	ngsaha@wbsedcl.co.in	[signature]
36	D P Bhargava	TVL	9958833995	dpbhargava@teestavurja.com	[signature]
37	SK BHOWMICK	TPTL	9958008265	swapan.b@tuptl.com	[signature]
38	R. C. Mohapatra	IBEUL	9437044660	rcmohapatra1@gmail.com	[signature]
39	BIRENDRA SAH	OPGCL	9778350001	birendra.sah@opgc.co.in	[signature]
40	H. P. Mahapatra	OHPC	7328840015	hpm.ohpc@gmail.com	[signature]

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Participants in 140th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 19.12.2017 (Tuesday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
41	P.K. Mishra	SGM(PS), SLDC, Bbsr	9438907402	sgm.ps@sldcorissa.org.in	
42	U.N. Mishra	CGM (GRIDCO)	9438907774	sgm.pp@gridco.co.in	
43	Umakanta Sahoo	GM (GO) SLDC, BBSR	9438907403	ek.umakanta@sldcorissa.org.in	
44	ARUNAVA SEN GUPTA	DGM (System Control)	9831802682	arunava.gupta@rp-sg.in	
45	U.K. Pal	SM(O)/DPL	9434735982	ukpaldgp@gmail.com	
46	RAJENDRA PRASAD	AEE TVNL	9031049936	rp.ttps@gmail.com	
47	RAJESH KUMAR PANDEY	EEE SLDC, JUSNL	9934138298	k.rajesh.p@gmail.com	
48	Pramjeet Kumar	ESE/SLDC BSPTCL	7763817711	pramjeet75@gmail.com	
49	DEEPAK KUMAR	A.Ex.E/SLDC/Patna	7763817776	dkumar27107@gmail.com	
50	A. De.	AEE, ERPC	9681932906	alik.erpc@gov.in	
51	T. G. Rao	EE, ERPC	9547891353	eeeb_cea@yahoo.co.in	
52	D. K. Bauri	EE, ERPC	9883617236	eeop.erpc@gov.in	
53	Alok Kr Mahto	AGM - NTPC	9650993786	alokmahto@ntpc.co.in	
54	PRACHI GUPTA	AEE/SLDC/Patna	7635072515	Prachigupta@gmail.com	
55	BIBHA KUMARI	AEE/SLDC/Patna	7091097885	bibhak11@gmail.com	
56	Tushar Ranjan	AEE/SLDC/Ranchi	9326374226	ranjtushar@gmail.com	
57	C.K. Haldar	ACE, WBSLDC	9432209503		
58	A. Bardhan Roy	ACE, WBSLDC WBSETCL	9434910302		
59	S. K. BAG	SE, CPD WBSETCL	9434910093	sajalkbag@yahoo.co.in	
60	P. P. Jena	AEE, ERPC	9776198991	ppjena.erpc@gov.in	

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Participants in 140th OCC Meeting of ERPC

Venue: ERPC Conference Room, Kolkata Time: 11:00 hrs Date: 19.12.2017 (Tuesday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
61	B. Devendra Kumar	AGM/TUL	9800940936	devendra.b@teestavutta.com	
62	Ashesh Bhatt	Sr. Engg./T.P.T.L	8116600778	ashesh.b@tvptl.com	
63	P.K. Kundu	CE, SLDC WBSETCL	9433910030	ce.wbsldc@gmail.com	
64	U.K. Sahoo	DGM, GRIDCO	9437185507	u.sahoo.puri@gmail.com	
65	R. Biswas	SM/DDC	9434735985	ranjanbiswas@gmail.com	
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Highlights for the month of November-17

Frequency Profile

Average Freq:- 49.96 Hz

Avg FVI: - 0.058

Lowest FVI:- 0.031

Max- 50.27Hz on 19th November' 17

Min- 49.62 Hz on 07th November' 17

73.53% of the time freq was with in IEGC Band

Peak Demand

ER: 18422 MW on 07th November 2017 at 17:58 hrs

% Growth in Average Demand Met w.r.t. last year- 1.79%

BSPHCL : 3730 MW ; ON 02/11/17

JUVNL: 1116 MW; ON 23/11/17

DVC: 3162 MW; ON 07/11/17

GRIDCO: 4105 MW; ON 27/11/17

WB: 7206 MW; ON 10/11/17

SIKKIM: 104 MW; ON 16/11/17

Energy met

Max. 357 MU on 04th Nov 2017

%Growth w.r.t. last year on Max energy – (-)3.06%

Avg. 343 MU in November *2017*

%Growth w.r.t. last year on Avg. energy – 3.31%

New Element

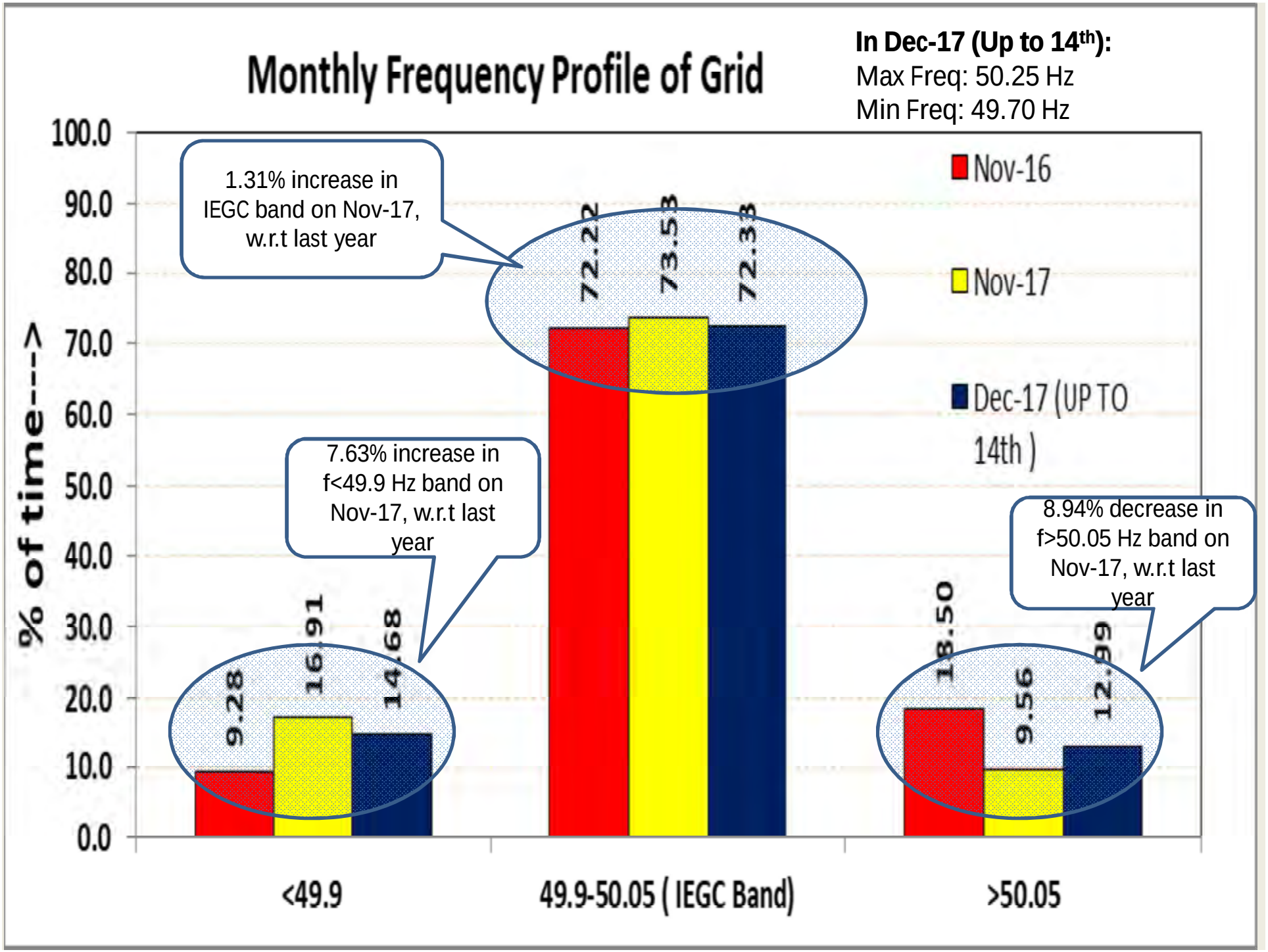
Generating Units-NIL

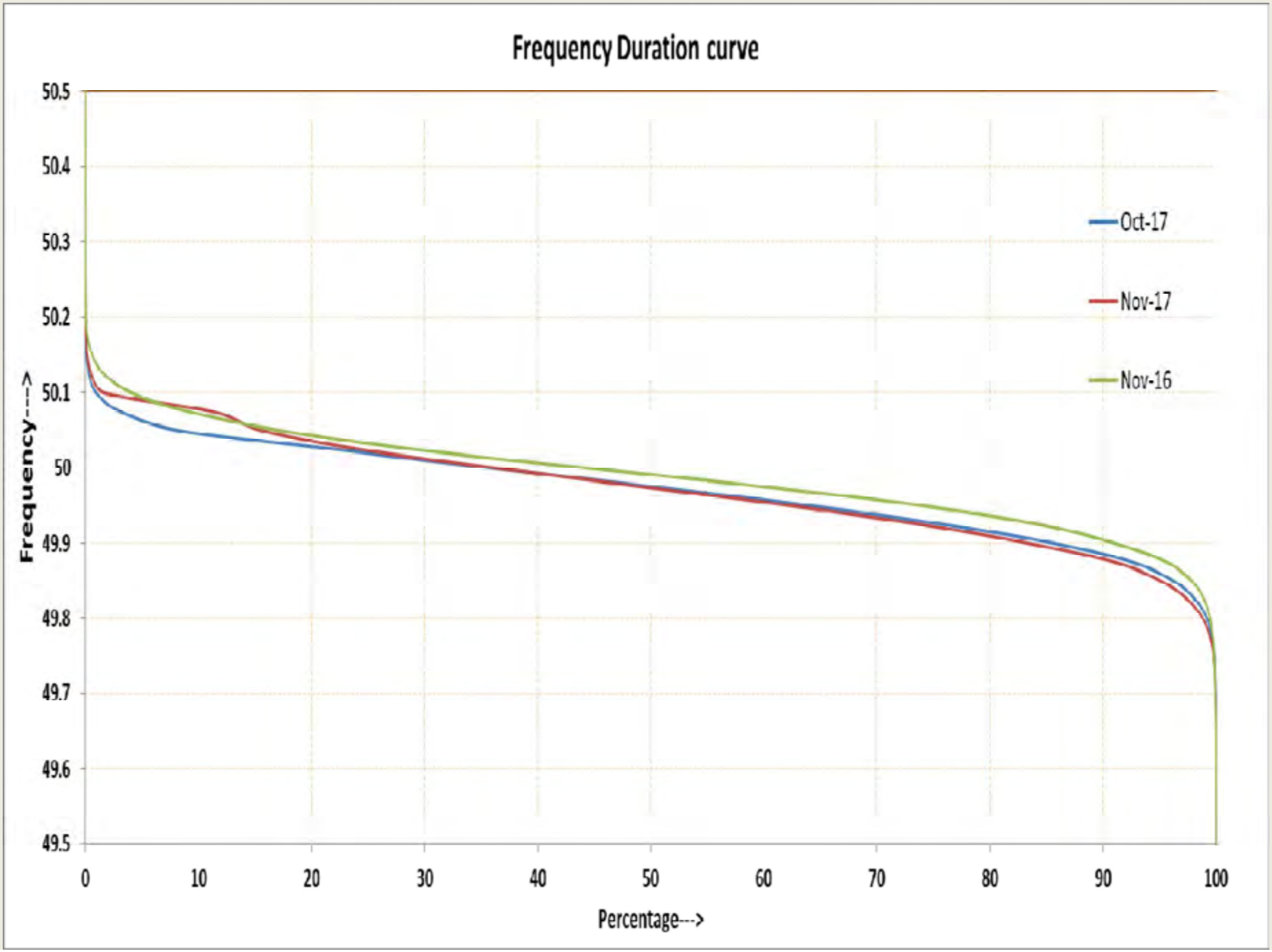
Transmission Lines-90 CKM

Open Access

STOA transactions approved -153 nos.

Energy Approved- 354.14 MUs


Monthly Frequency Profile of Grid
In Dec-17 (Up to 14th):
Max Freq: 50.25 Hz
Min Freq: 49.70 Hz
1.31% increase in IEGC band on Nov-17, w.r.t last year
7.63% increase in f<49.9 Hz band on Nov-17, w.r.t last year
8.94% decrease in f>50.05 Hz band on Nov-17, w.r.t last year
Nov-16
Nov-17
Dec-17 (UP TO 14th)
% of time--->
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
9.28
16.91
14.68
72.22
73.53
72.33
18.50
9.56
12.99
<49.9
49.9-50.05 (IEGC Band)
>50.05

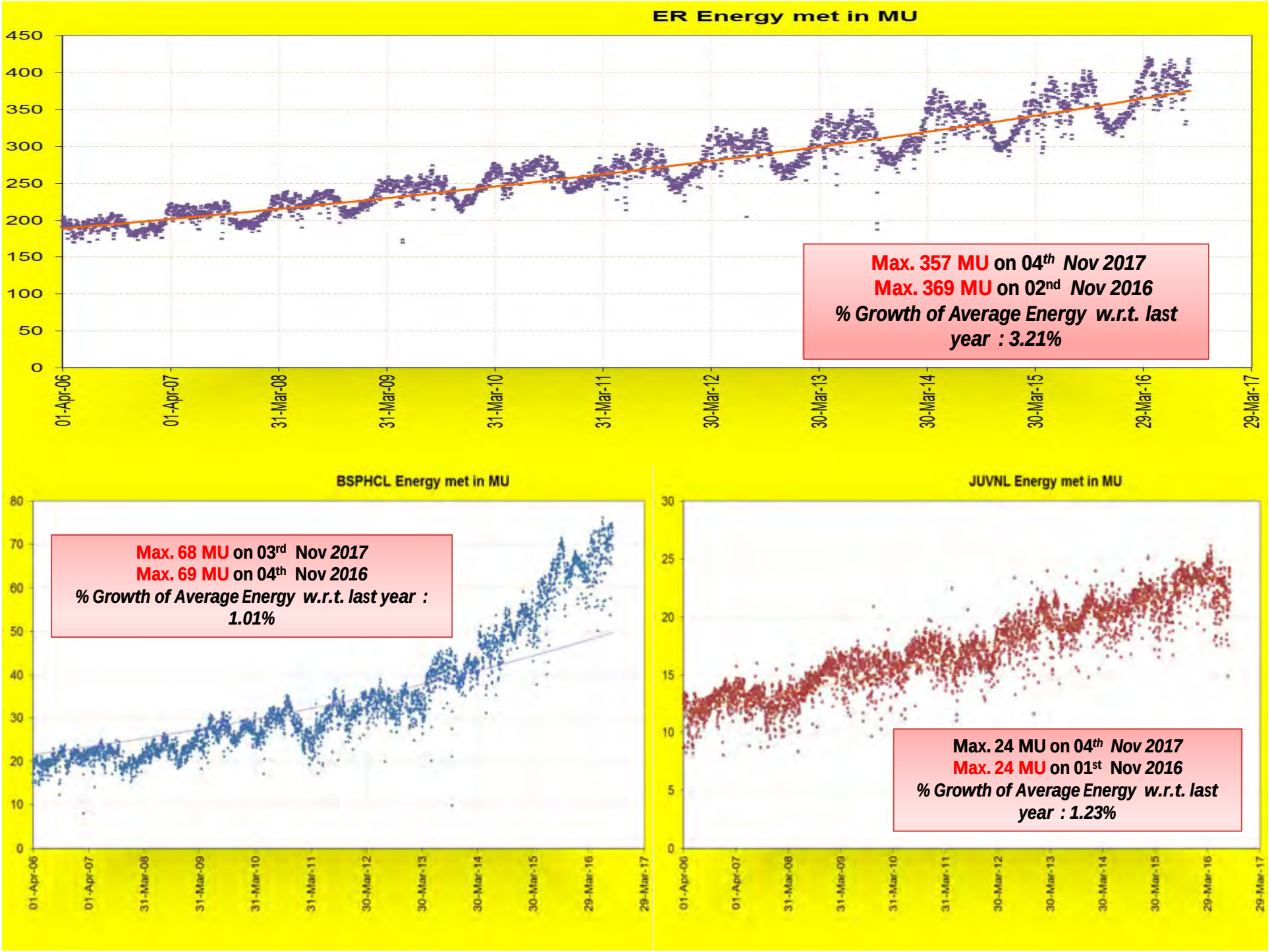

Frequency Duration curve
50.5
50.4
50.3
50.2
50.1
50
49.9
49.8
49.7
49.6
49.5
Frequency--->
0
10
20
30
40
50
60
70
80
90
100
Percentage--->
Oct-17
Nov-17
Nov-16

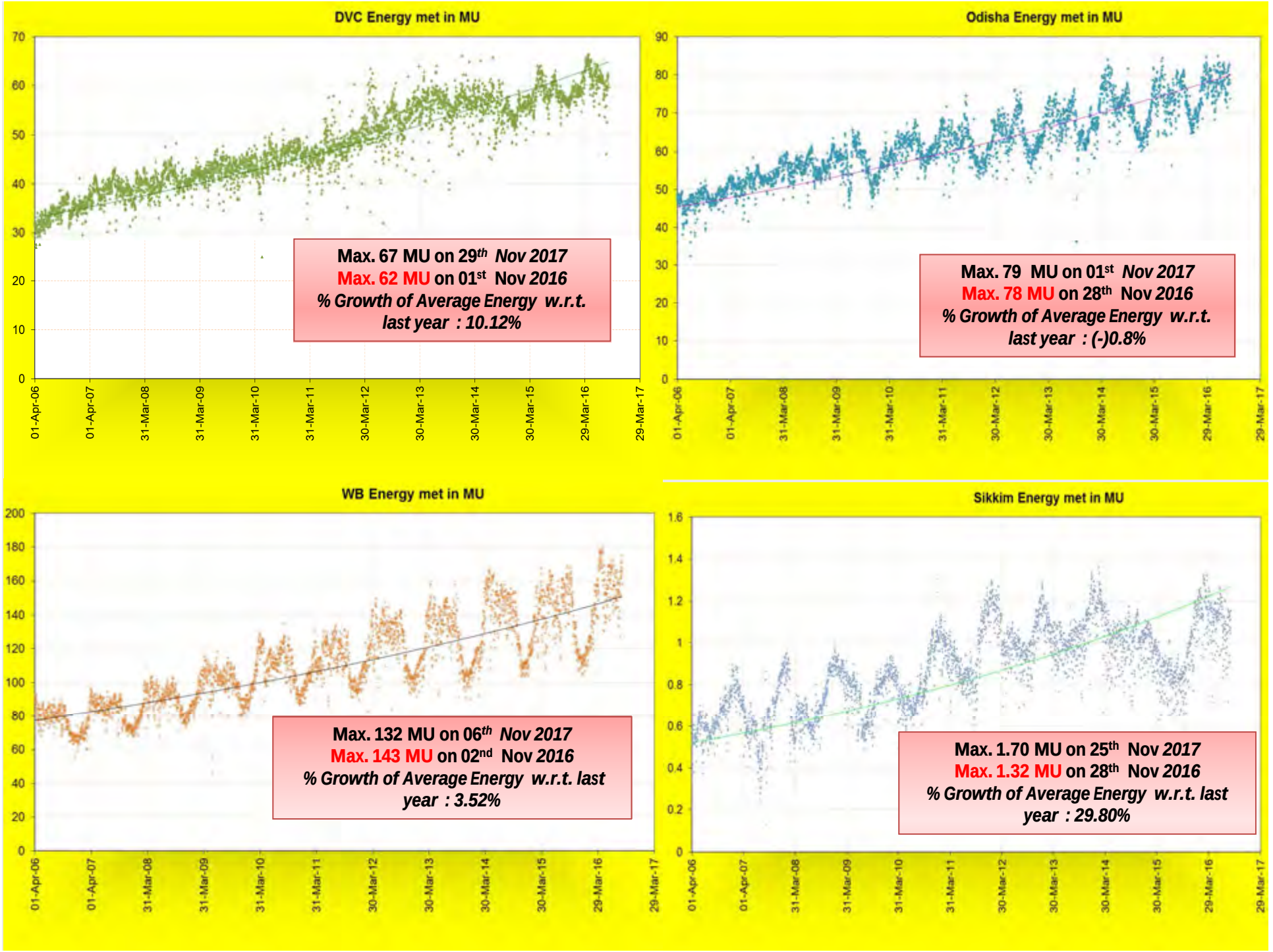
So Far Highest Demand

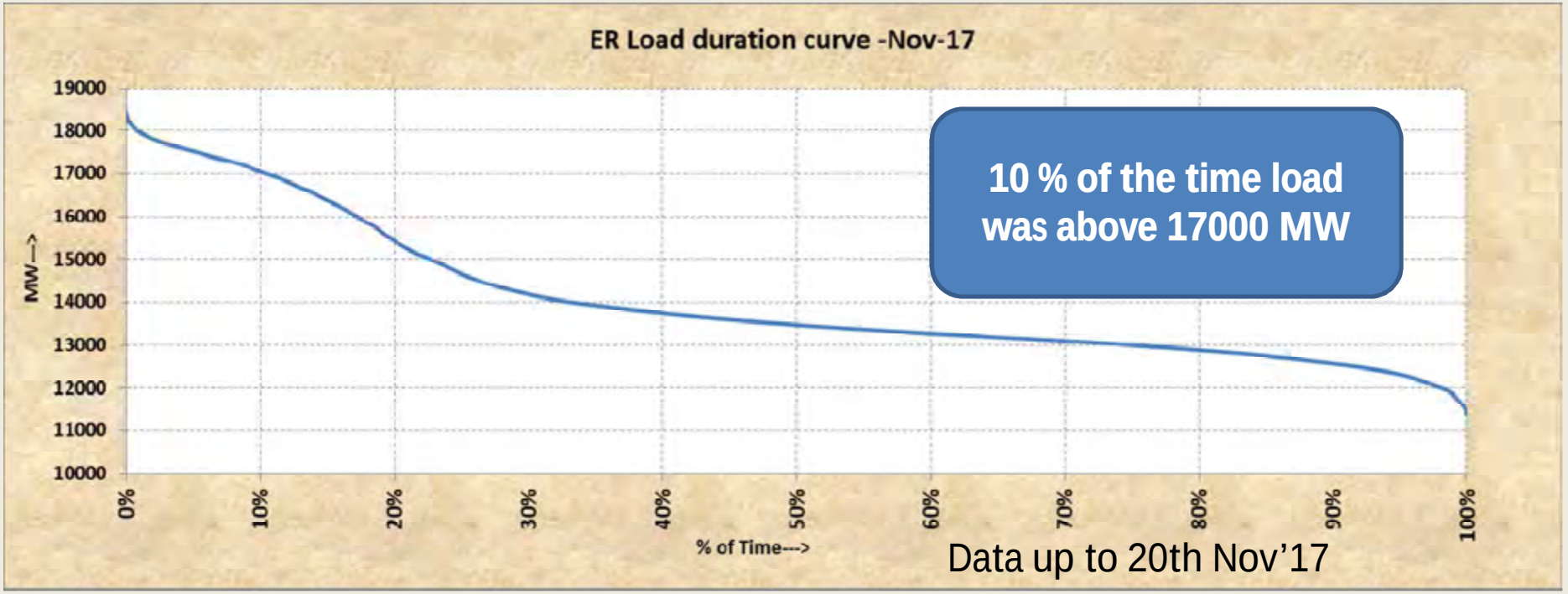
Constitute	Demand (in MW)	Date	Time	Dmd met on 11th Dec'17(max dmd met day)
Bihar	4488	09-Oct-17	20:38	3738
DVC	3333	10-Apr-16	20:57	2955
Jharkhand	1262	10-Jun-17	19:54	1180
Odisha	4656	10-Oct-17	19:37	3714
W. Bengal	8605	12-Apr-17	19:56	6193
Sikkim	117	28-Oct-16	18:59	100
ER	21116	18-Oct-17	19:43	17622

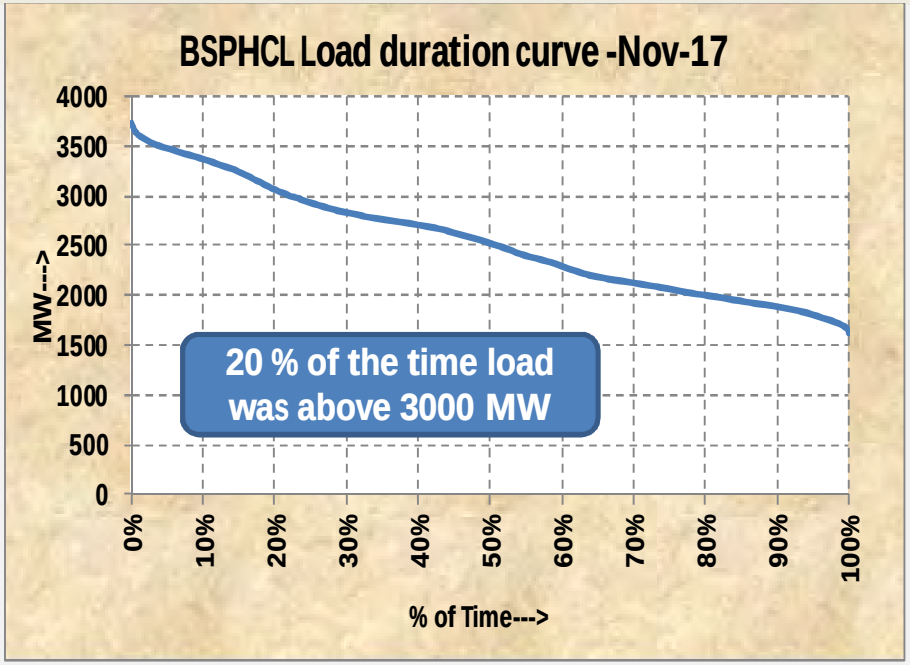
So Far Highest Energy Consumption

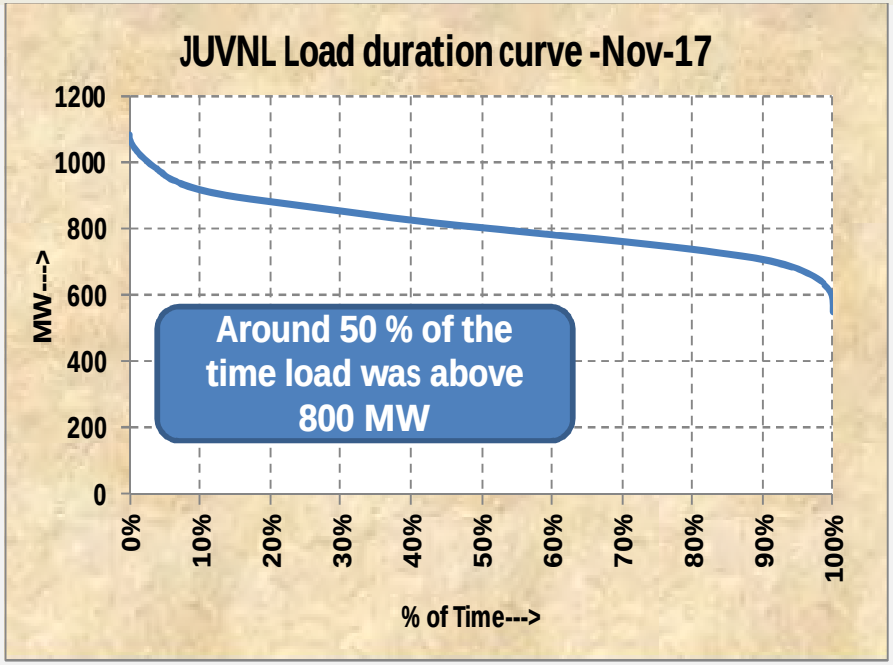
Constitute	Energy consumption (in MUs)	Date	Dmd met on 11th Dec'17(max dmd met day)
Bihar	90.3	26-Sep-17	62.1
DVC	75	23-Mar-17	63.4
Jharkhand	26	20-Apr-16	22
Odisha	91.5	16-Sep-17	64.8
West Bengal	181	27-Apr-16	103
Sikkim	2	24-Mar-17	1.6
ER	451	26-Sep-17	323


ER Energy met in MU
Max. 357 MU on 04th Nov 2017
Max. 369 MU on 02nd Nov 2016
% Growth of Average Energy w.r.t. last year : 3.21%
BSPHCL Energy met in MU
Max. 68 MU on 03rd Nov 2017
Max. 69 MU on 04th Nov 2016
% Growth of Average Energy w.r.t. last year : 1.01%
JUVNL Energy met in MU
Max. 24 MU on 04th Nov 2017
Max. 24 MU on 01st Nov 2016
% Growth of Average Energy w.r.t. last year : 1.23%

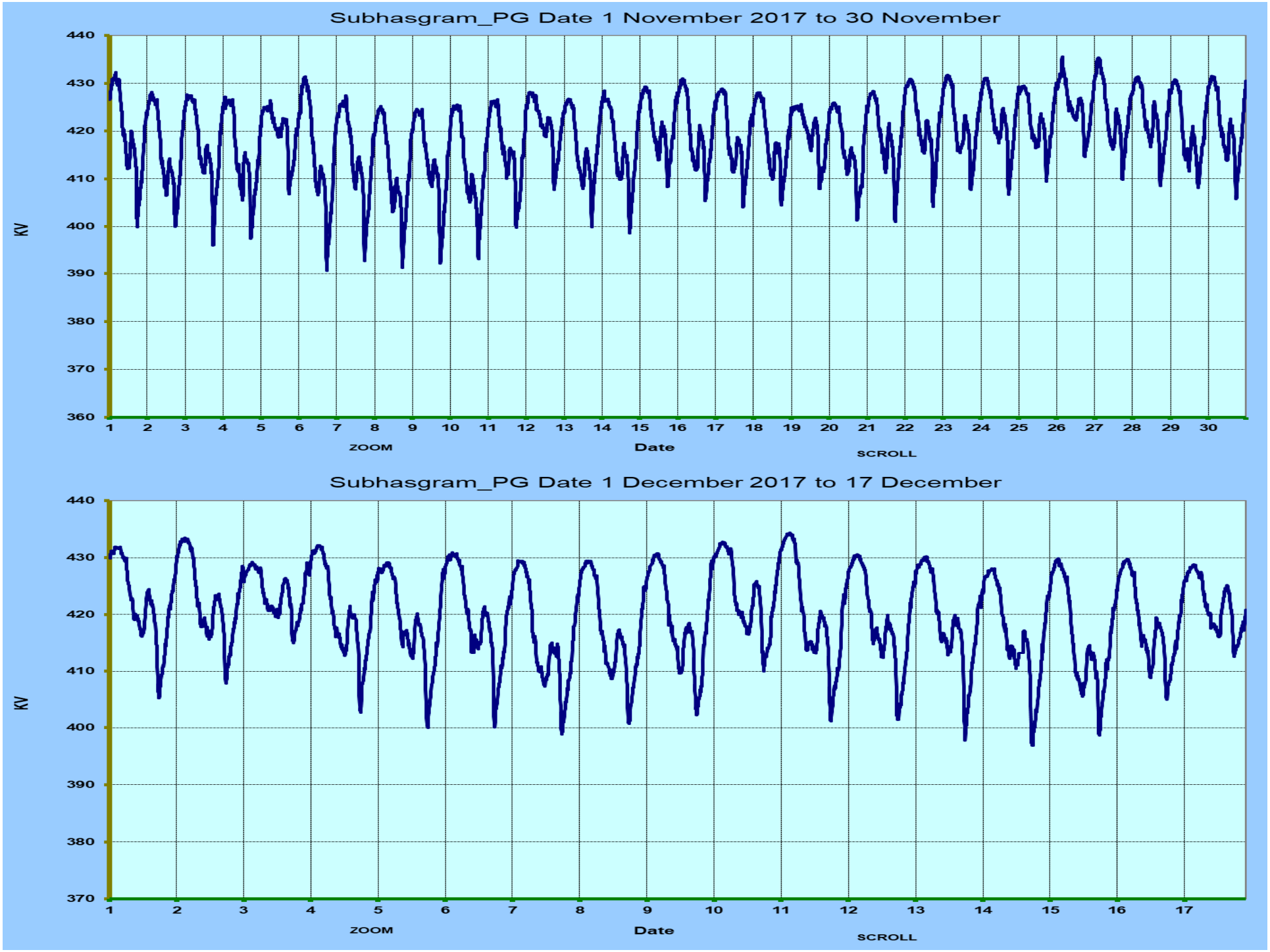

DVC Energy met in MU
Max. 67 MU on 29th Nov 2017
Max. 62 MU on 01st Nov 2016
% Growth of Average Energy w.r.t. last year : 10.12%
Odisha Energy met in MU
Max. 79 MU on 01st Nov 2017
Max. 78 MU on 28th Nov 2016
% Growth of Average Energy w.r.t. last year : (-)0.8%
WB Energy met in MU
Max. 132 MU on 06th Nov 2017
Max. 143 MU on 02nd Nov 2016
% Growth of Average Energy w.r.t. last year : 3.52%
Sikkim Energy met in MU
Max. 1.70 MU on 25th Nov 2017
Max. 1.32 MU on 28th Nov 2016
% Growth of Average Energy w.r.t. last year : 29.80%

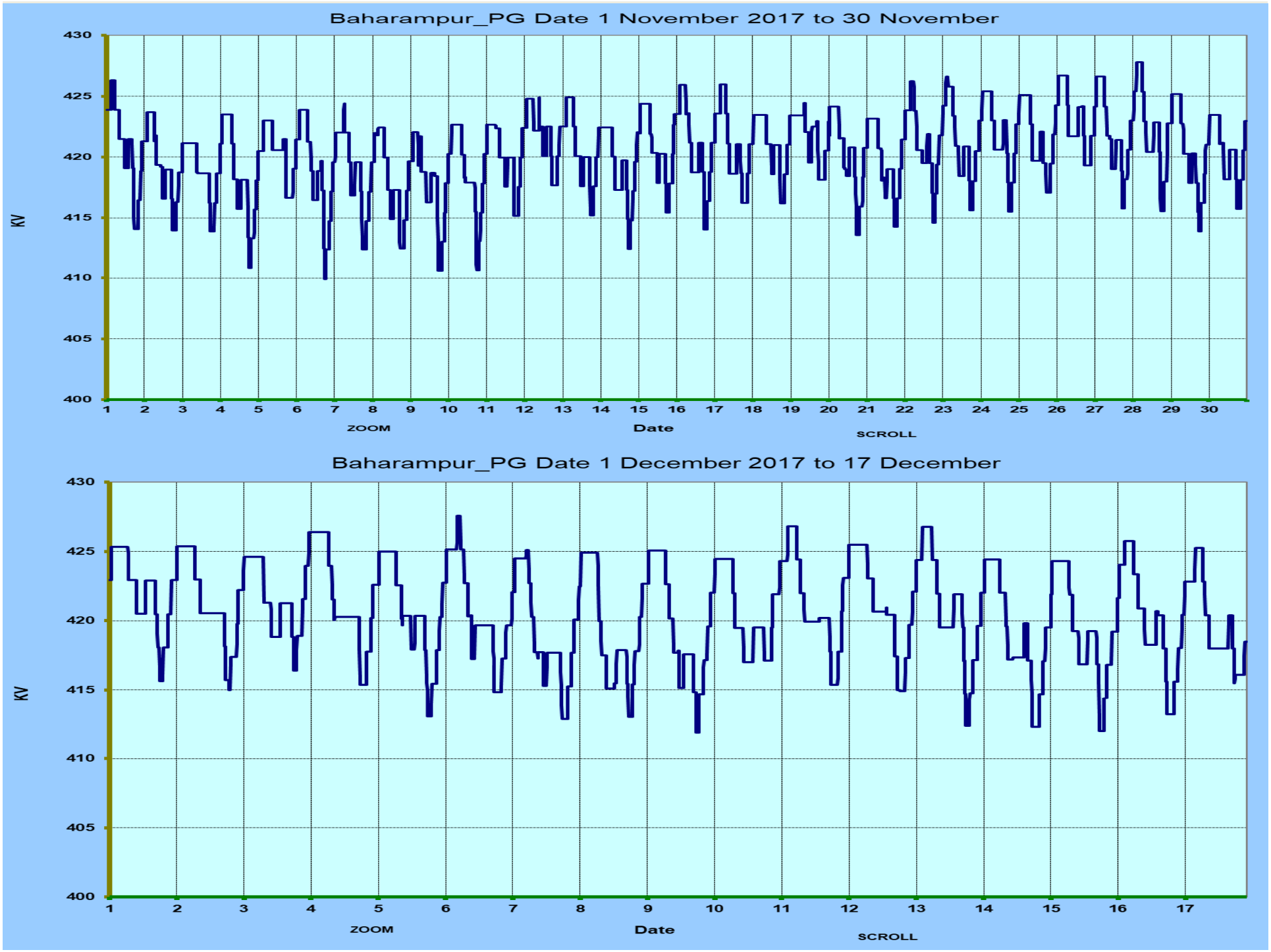

ER Load duration curve -Nov-17
MW--->
% of Time--->
10 % of the time load was above 17000 MW
Data up to 20th Nov'17

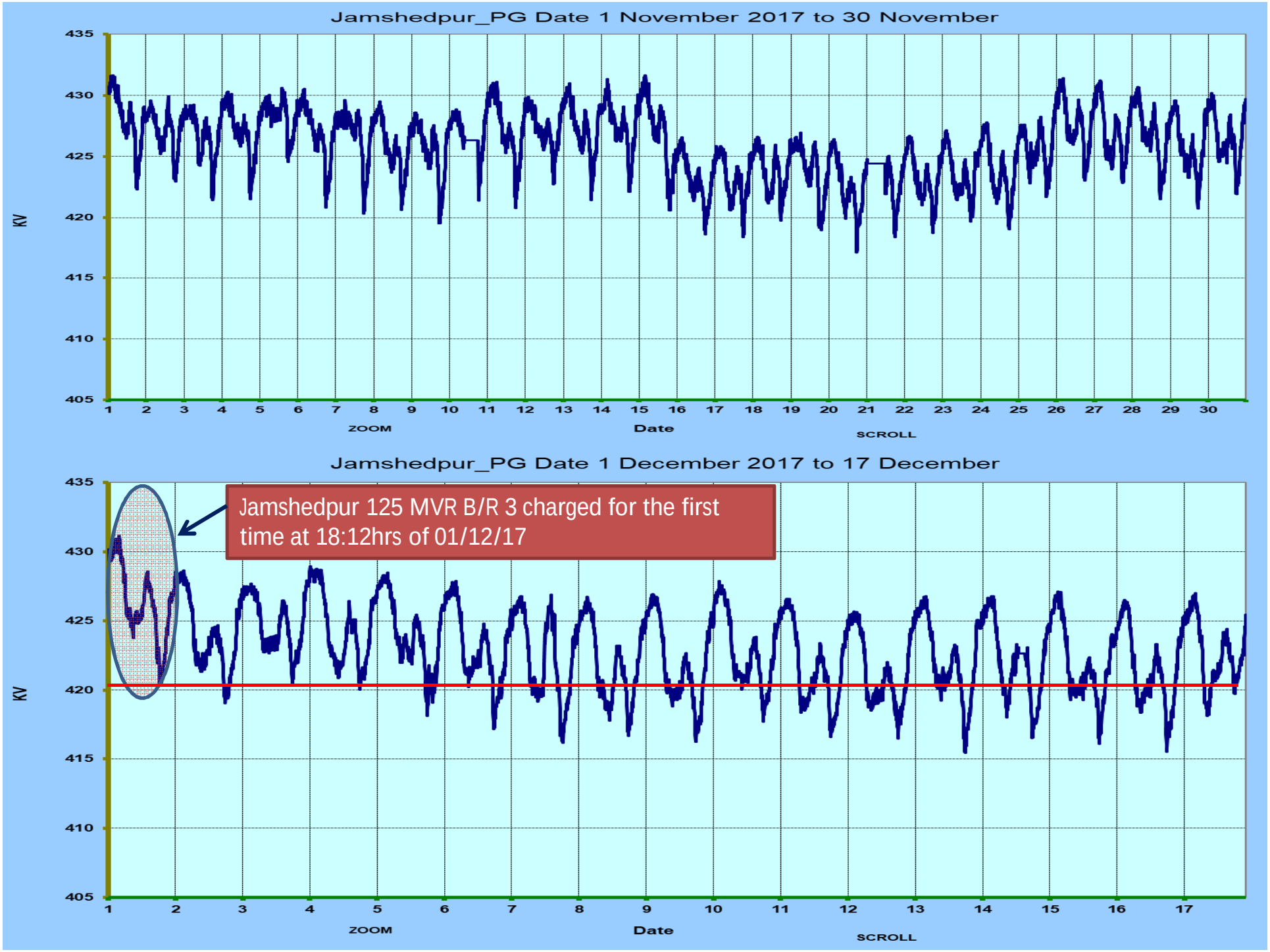

BSPHCL Load duration curve -Nov-17
MW--->
% of Time--->
20 % of the time load was above 3000 MW


JUVNL Load duration curve -Nov-17
MW--->
% of Time--->
Around 50 % of the time load was above 800 MW

Voltage Pattern


Subhasgram_PG Date 1 November 2017 to 30 November
KV
440
430
420
410
400
390
380
370
360
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
ZOOM
Date
SCROLL
Subhasgram_PG Date 1 December 2017 to 17 December
KV
440
430
420
410
400
390
380
370
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
ZOOM
Date
SCROLL


Baharampur_PG Date 1 November 2017 to 30 November
KV
430
425
420
415
410
405
400
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
ZOOM
Date
SCROLL
Baharampur_PG Date 1 December 2017 to 17 December
KV
430
425
420
415
410
405
400
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
ZOOM
Date
SCROLL

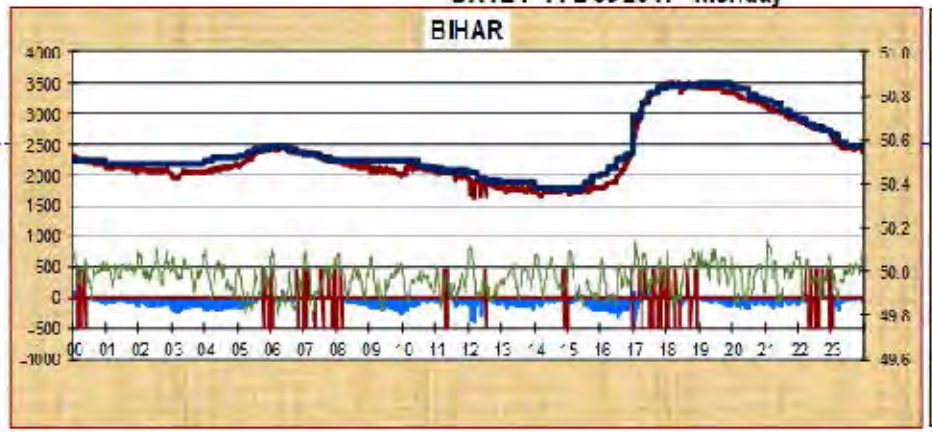

Jamshedpur_PG Date 1 November 2017 to 30 November
KV
435
430
425
420
415
410
405
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
ZOOM
Date
SCROLL
Jamshedpur_PG Date 1 December 2017 to 17 December
Jamshedpur 125 MVR B/R 3 charged for the first time at 18:12hrs of 01/12/17
KV
435
430
425
420
415
410
405
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
ZOOM
Date
SCROLL


Jamshedpur Voltage Duration curve
Voltage (KV) --->
440
435
430
425
420
415
410
405
400
395
390
385
380
0
10
20
30
40
50
60
70
80
90
100
Percentage--->
Dec-17
Nov-17

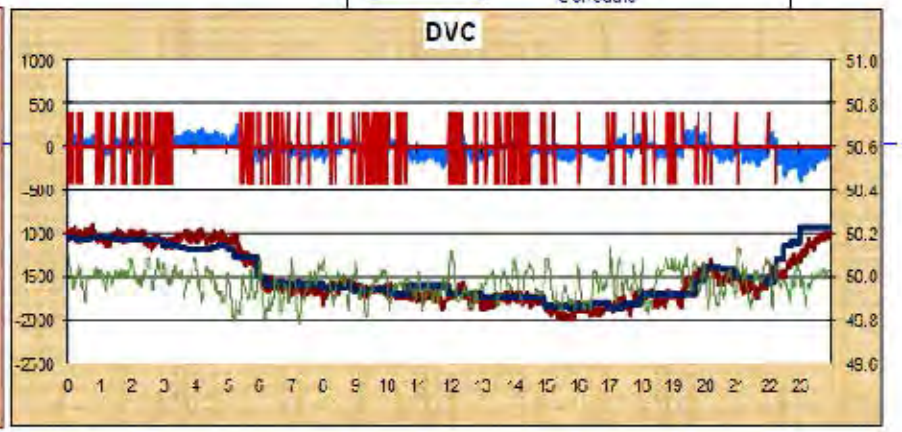
Performance of constituents/Utilities on maximum demand day in December 2017

CONSTITUENTWISE SCHEDULE& ACTUAL EXCHANGE

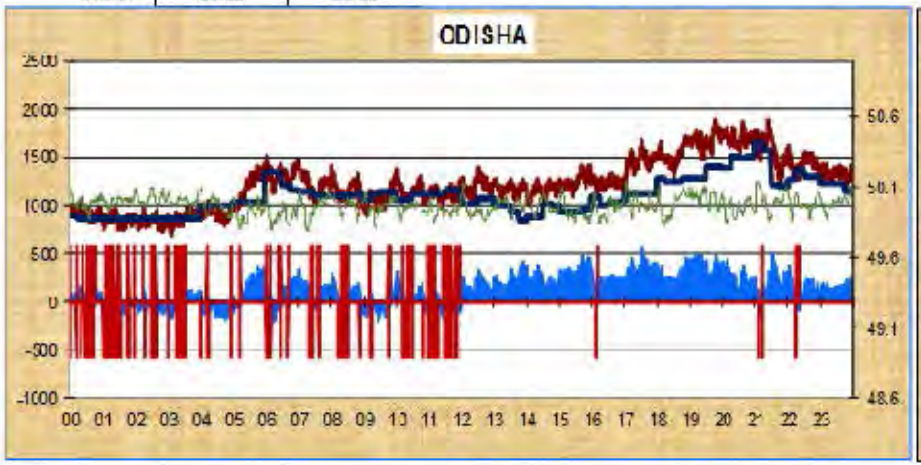
DATE : 11 Dec 2017 Monday



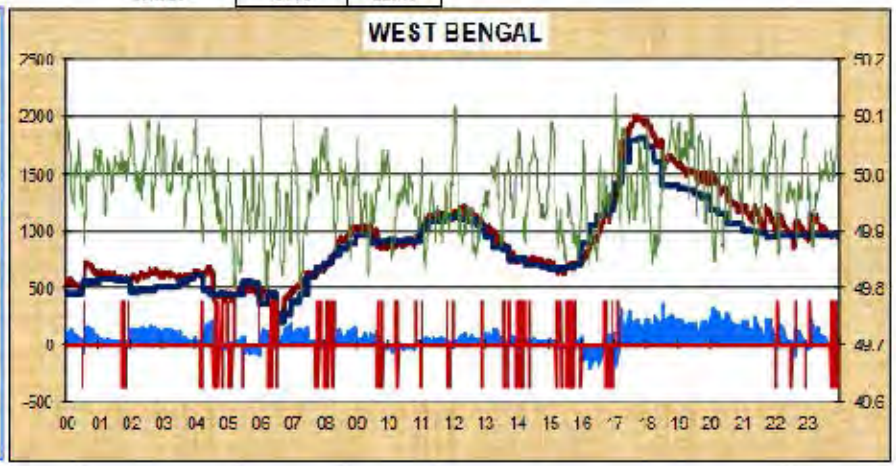
Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
56.6	3503	1645	0.47	1.98	58.53
Time:	18:23	12:32			



Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
36.1	898	2000	0.45	0.61	35.51
Time:	0:46	15:47			



Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
29.3	1308	684	0.36	2.95	26.34
Time:	21:23	3:07			

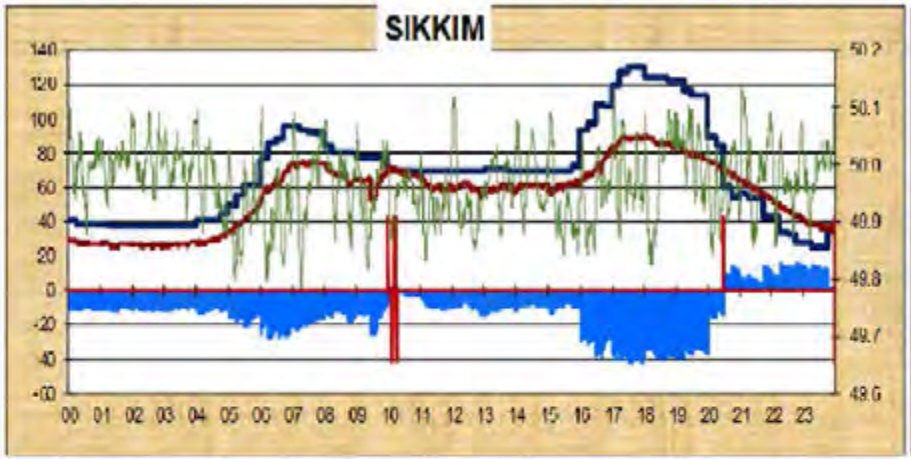


Act MU	MAX	MIN	Min/Max	UI	SCHEDULE
22.2	2012	201	0.10	1.53	20.56
Time:	17:44	6:32			

CONSTITUENTWISE SCHEDULE & ACTUAL EXCHANGE

DATE : 11 Dec 2017 Monday

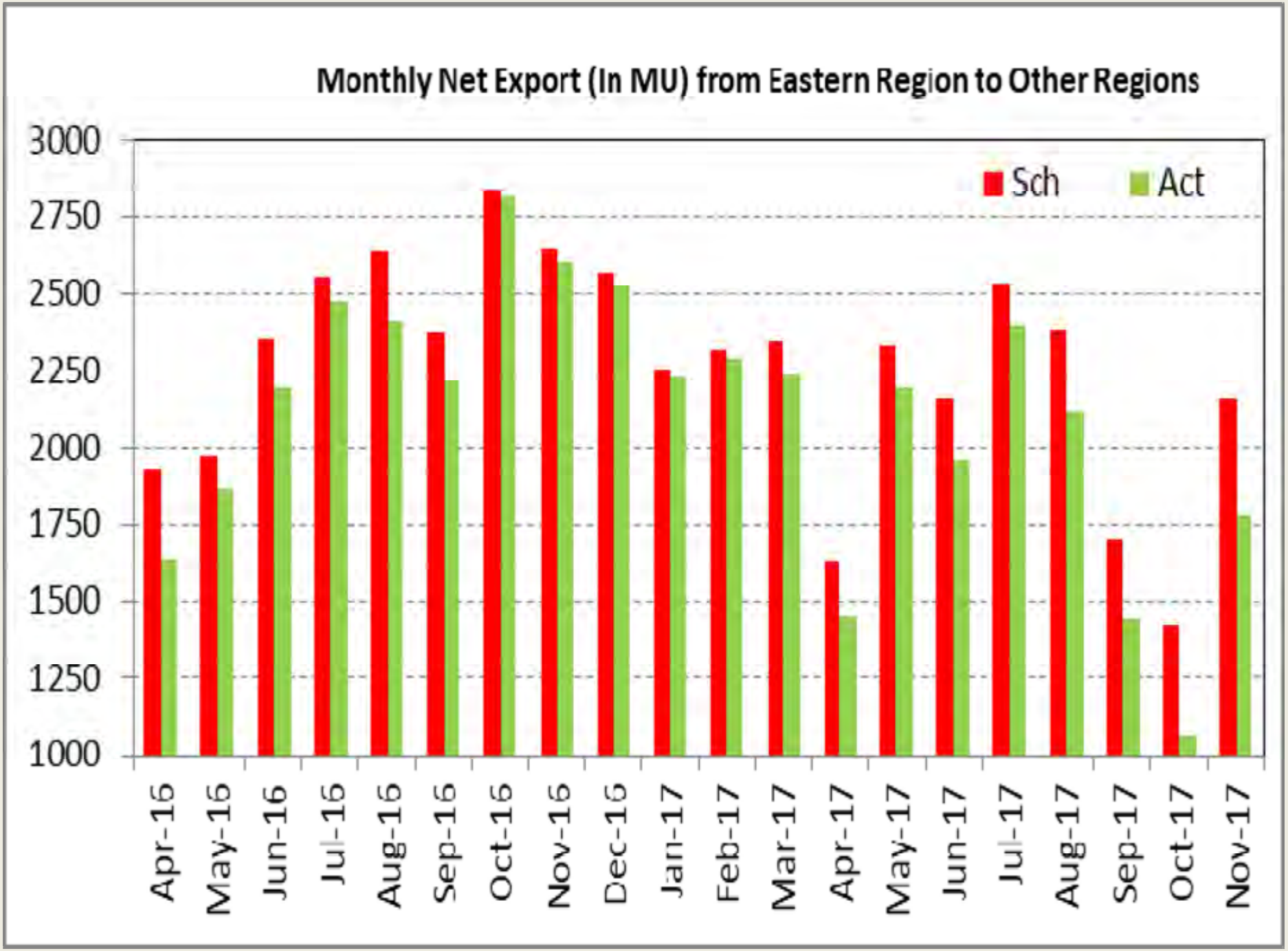
SIKKIM

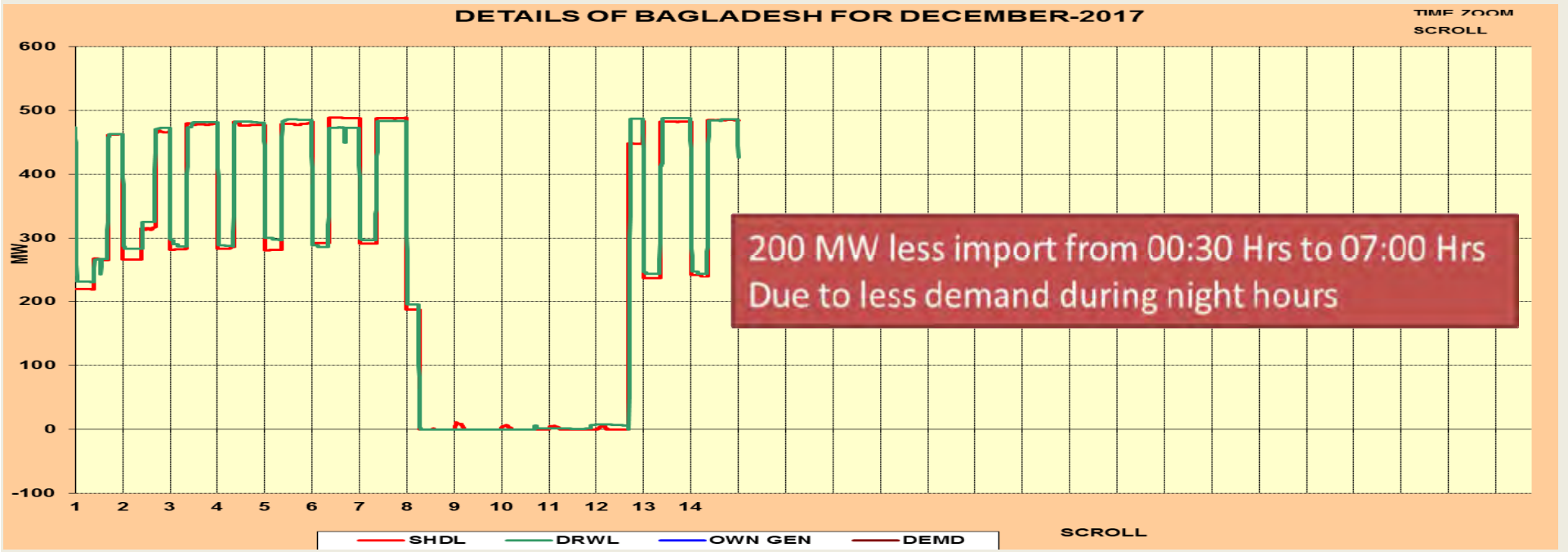


MU	MAX	MIN	Min/Max	UI	SCHEDULE
1.4	90	25	0.28	-0.31	1.66
Time:	18:03	1:29			

JHARKHAND

Act MU	MAX	MIN	Min/Max	UI	schd MU
13.52	822	337	0.41	0.04	13.48
Time:	6:50	16:24			


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

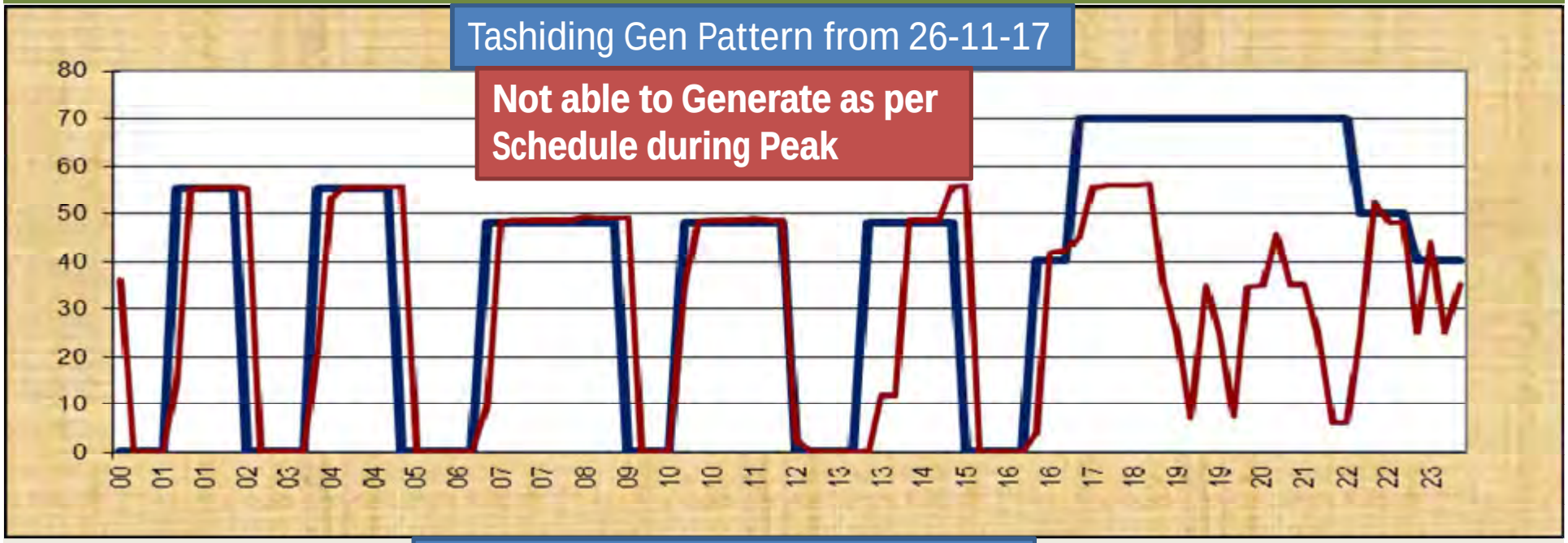

DETAILS OF BAGLADESH FOR DECEMBER-2017
TIME ZOOM
SCROLL
MW
600
500
400
300
200
100
0
-100
1 2 3 4 5 6 7 8 9 10 11 12 13 14
200 MW less import from 00:30 Hrs to 07:00 Hrs
Due to less demand during night hours
SHDL
DRWL
OWN GEN
DEMD
SCROLL


DETAILS OF Tala+ chukha FOR DECEMBER-2017
TIME ZOOM
SCROLL
MW
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14
SHDL
DRWL
OWN GEN
DEMD
SCROLL

Improvement of Tashiding Gen

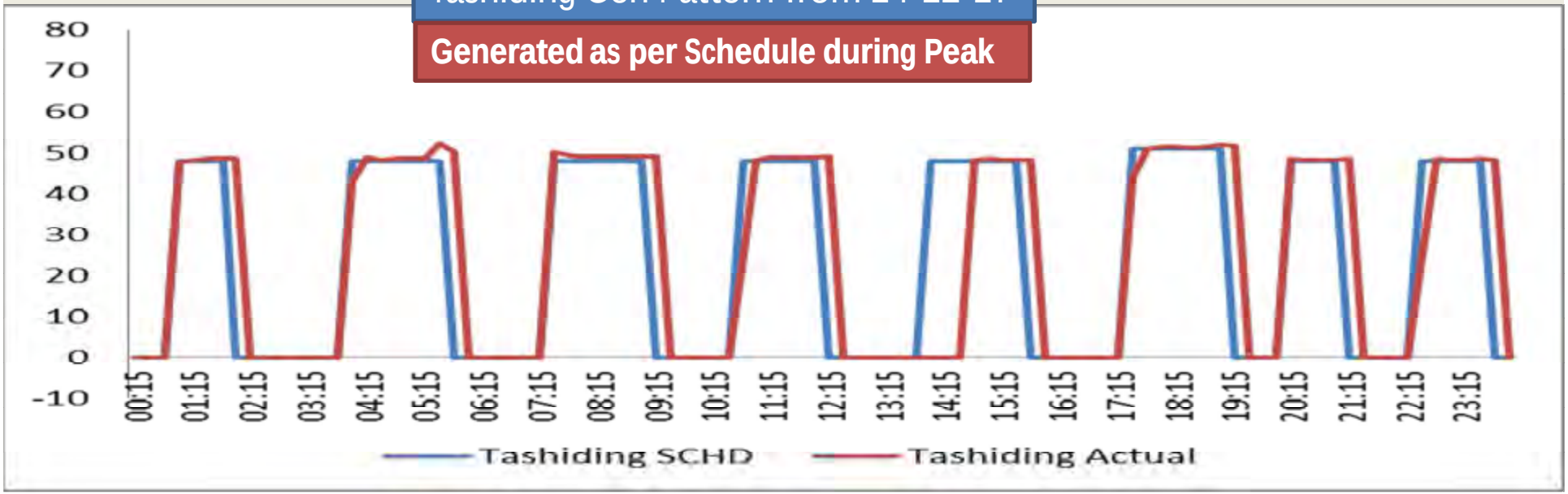
Tashiding Gen Pattern from 26-11-17

Not able to Generate as per Schedule during Peak



Tashiding Gen Pattern from 14-12-17

Generated as per Schedule during Peak



Annexure-A2

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
पी .डी एम .प्रभाग

No.CEA/PLG/PDM/566/2017/

Dated: 04.12-2017

To,

S.K. Upadhyay,
President & Director-Projects,
M/s Gati Infrastructure Power Private Limited,
Plot No. KH 14/19/2
Old Delhi Gurgaon Road,
Samalkha, New Delhi-110037

Subject: - Uprating of Unit No. 1 & 2 of Chuzachen Hydroelectric Project from 2x49.5MW (99MW) to 2x55MW (110MW)- regarding.

Ref: GIPL/HO/CEA/17-18-09/002 dated 28/09/2017

Sir,

This is with reference to your above referred letter regarding change in Installed capacity of Chuzachen H.E.Project from 99 MW (2x49.5MW) to 110 MW (2x55MW).

It is seen that the capacity of the project has been enhanced from 99 MW to 110 MW. The details furnished by M/s. Gati Infrastructure Power Private Limited have been seen by the Central Electricity Authority. It is also seen that all the required approvals and clearances for the enhancement of the installed capacity from 99 MW to 110 MW of Chuzachen H.E. Project has been obtained by M/s. Gati Infrastructure Power Private Limited from Government of Sikkim and Ministry of Environment, Forest & Climate Change, Government of India. It is also seen from the ERLDC, POSOCO Daily Operation Report that the plant is operating at a peak capacity of over 110 MW.

Based on the information furnished by M/s. Gati Infrastructure Power Private Limited, after considering all necessary approvals & clearances, the capacity of Chuzachen H.E.Project is being changed from 99 MW(2x49.5MW) to 110 MW (2x55MW) in the data base of All India Installed Capacity with effect from 28.09.2017.

Yours faithfully

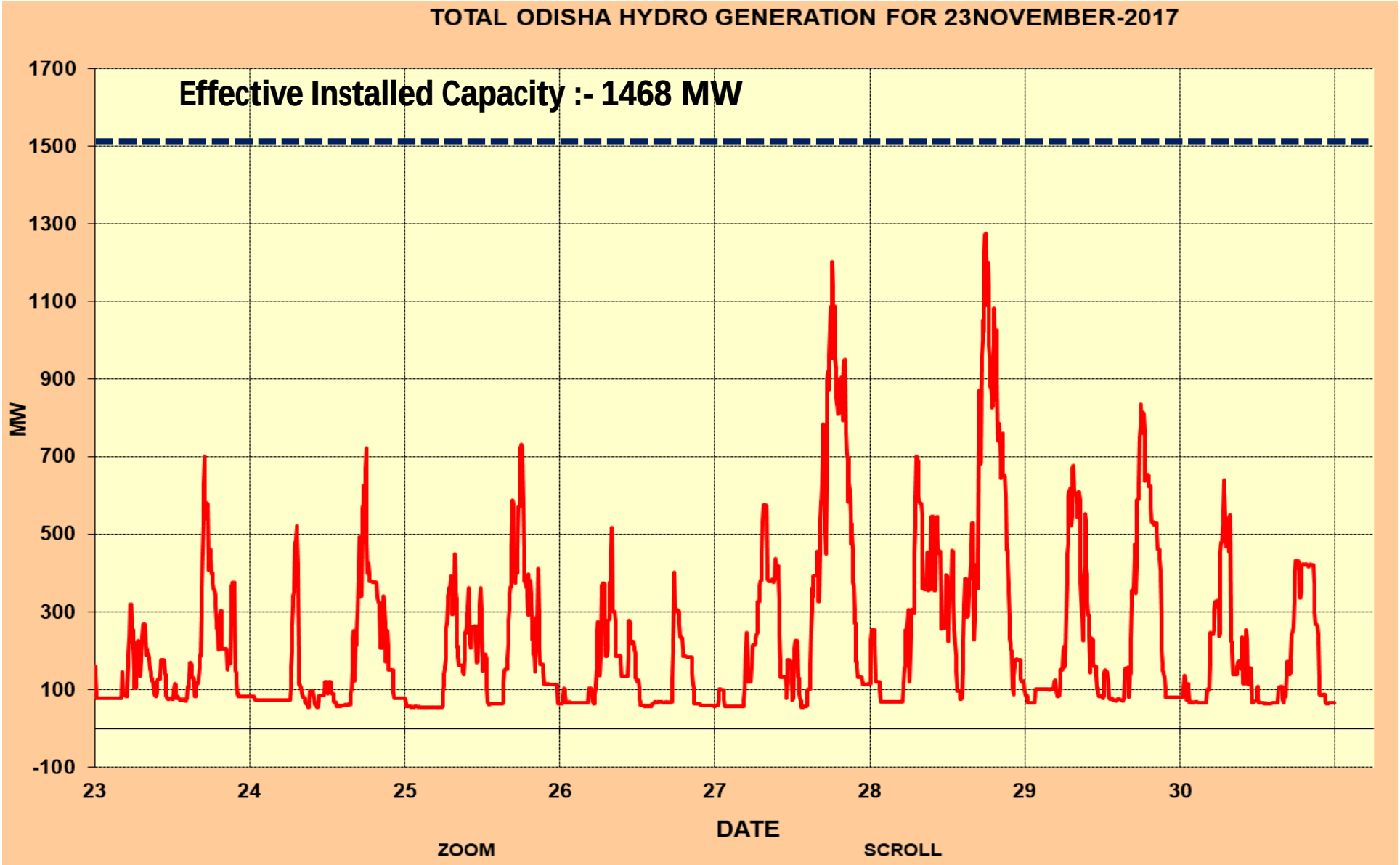
4/12/17

(P.C.Kureel)
Secretary, CEA

Copy for information to:

1. PPS, Secretary, MoP
2. SA to Chairperson, CEA
3. SA to Member (Planning/Hydro/Thermal/ E&C/ GO&D/PS), CEA
4. All Chief Engineers of CEA
5. All Heads of Subordinate offices, CEA
6. IT Division, CEA for uploading on CEA website

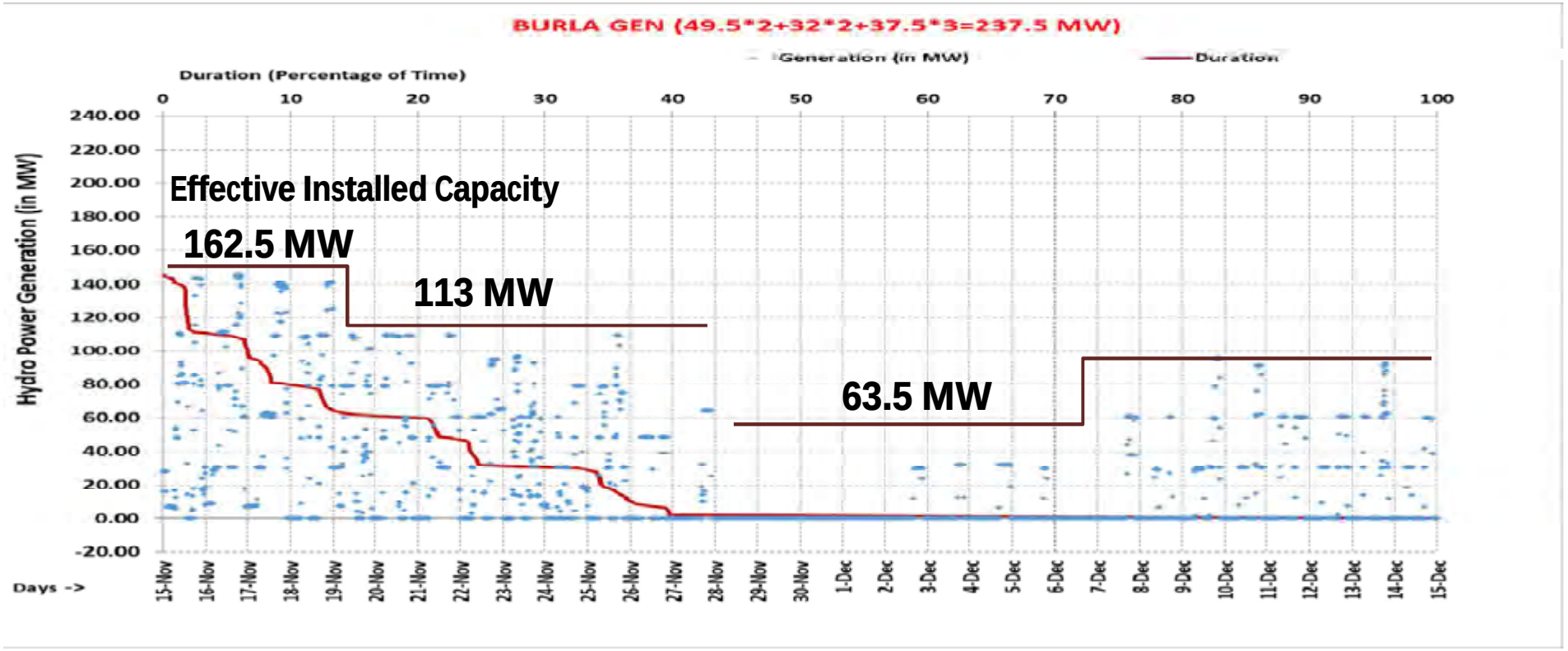
State Hydro Generators Performance

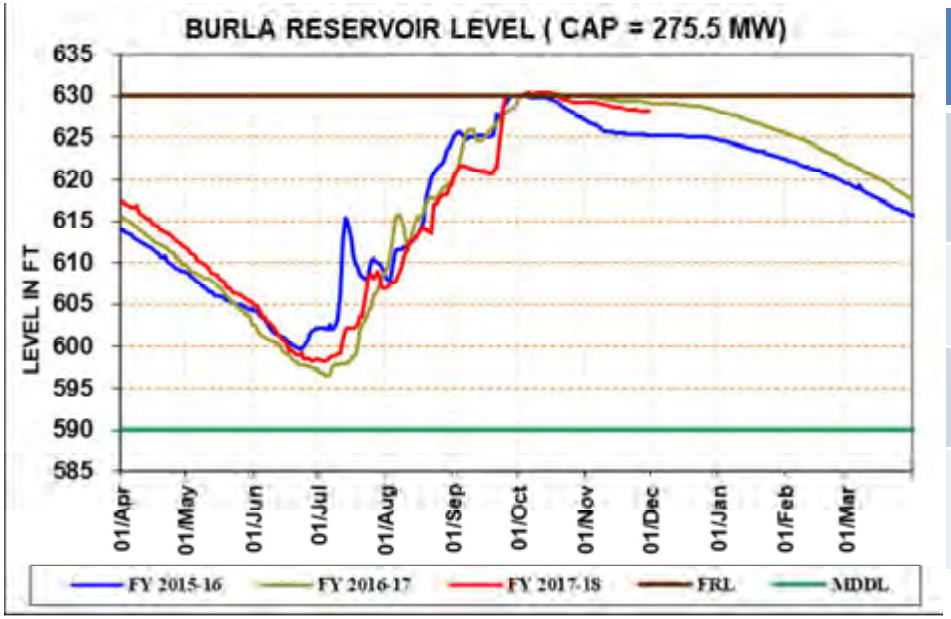


Total Installed Capacity of Odisha Hydro = 1917.5 MW

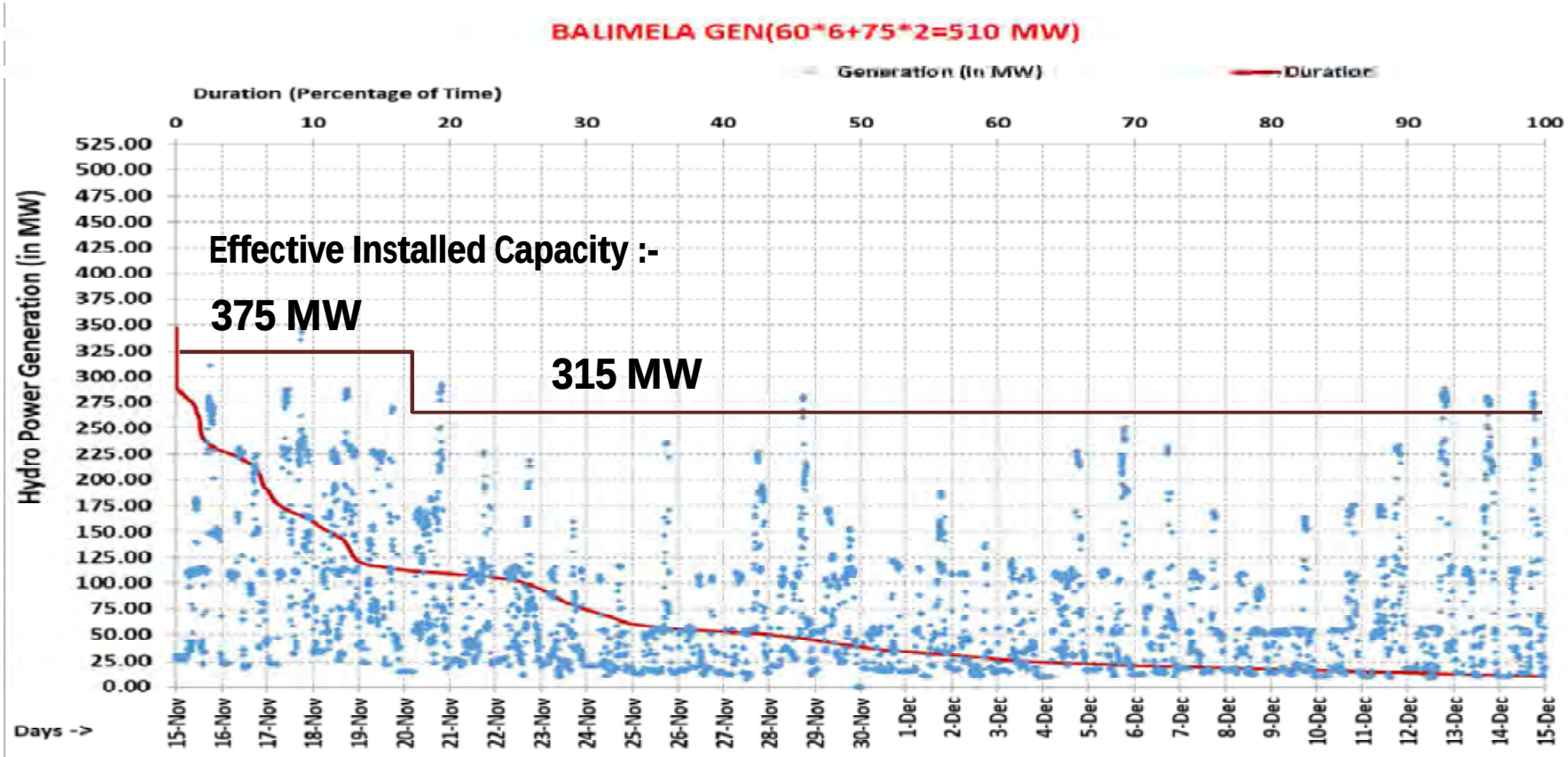
Total Effective Installed Capacity* = 1468 MW

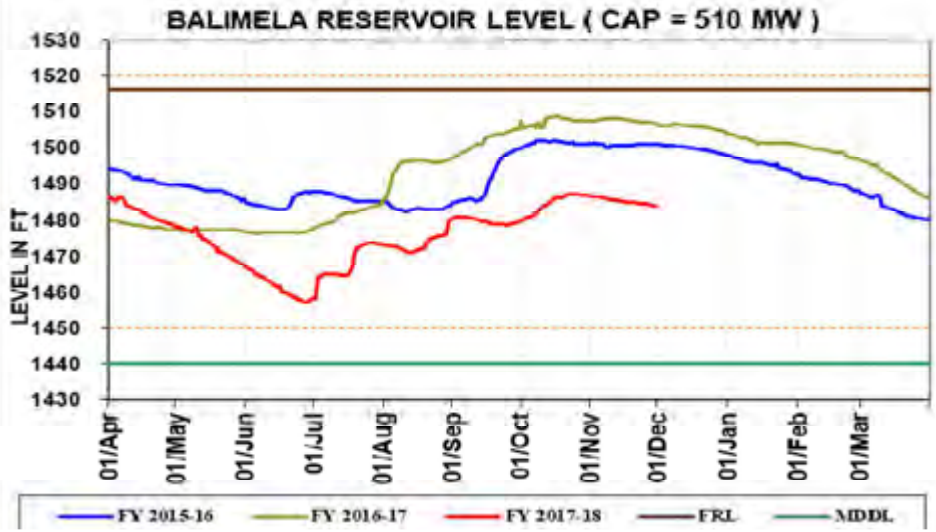
**Effective Installed capacity is calculated considering units on bar at different Hydro Stations*



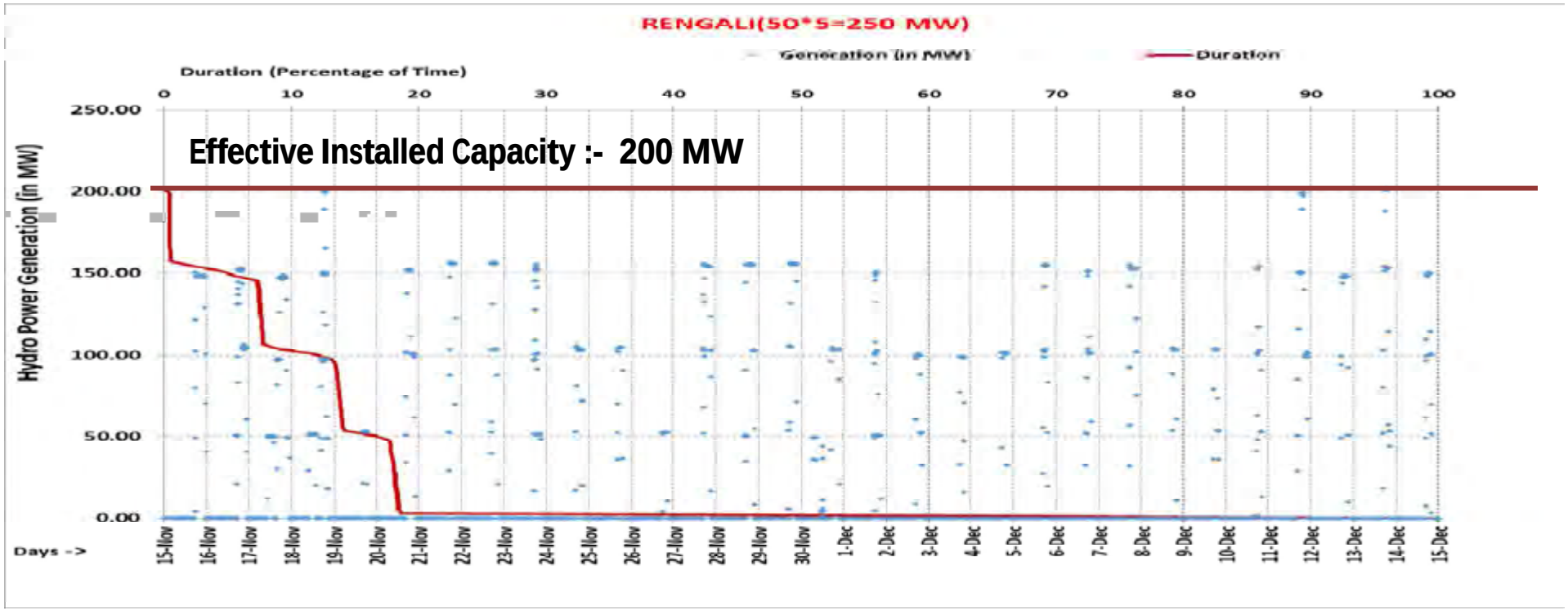


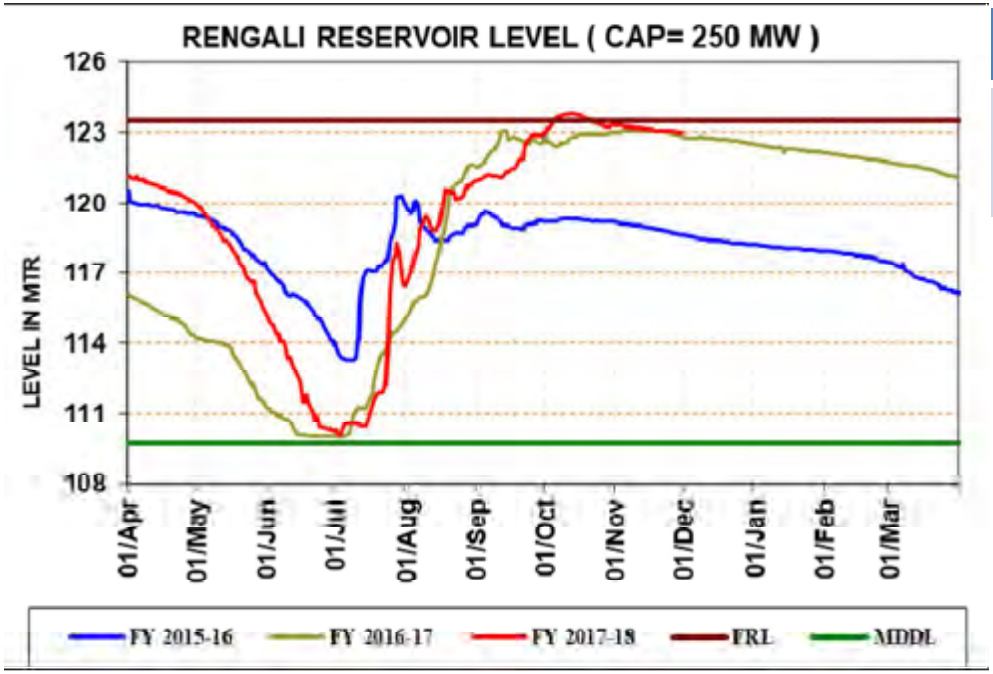
Unit No	Date of Outage	Reason
U - 1	19.11.17(19:00)	Gen. UGB oil temp high
U - 2	01.12.17(08:30)	Annual Maint.
U - 5	25.10.2016	R & M Work
U - 6	16.10.2015	R & M Work





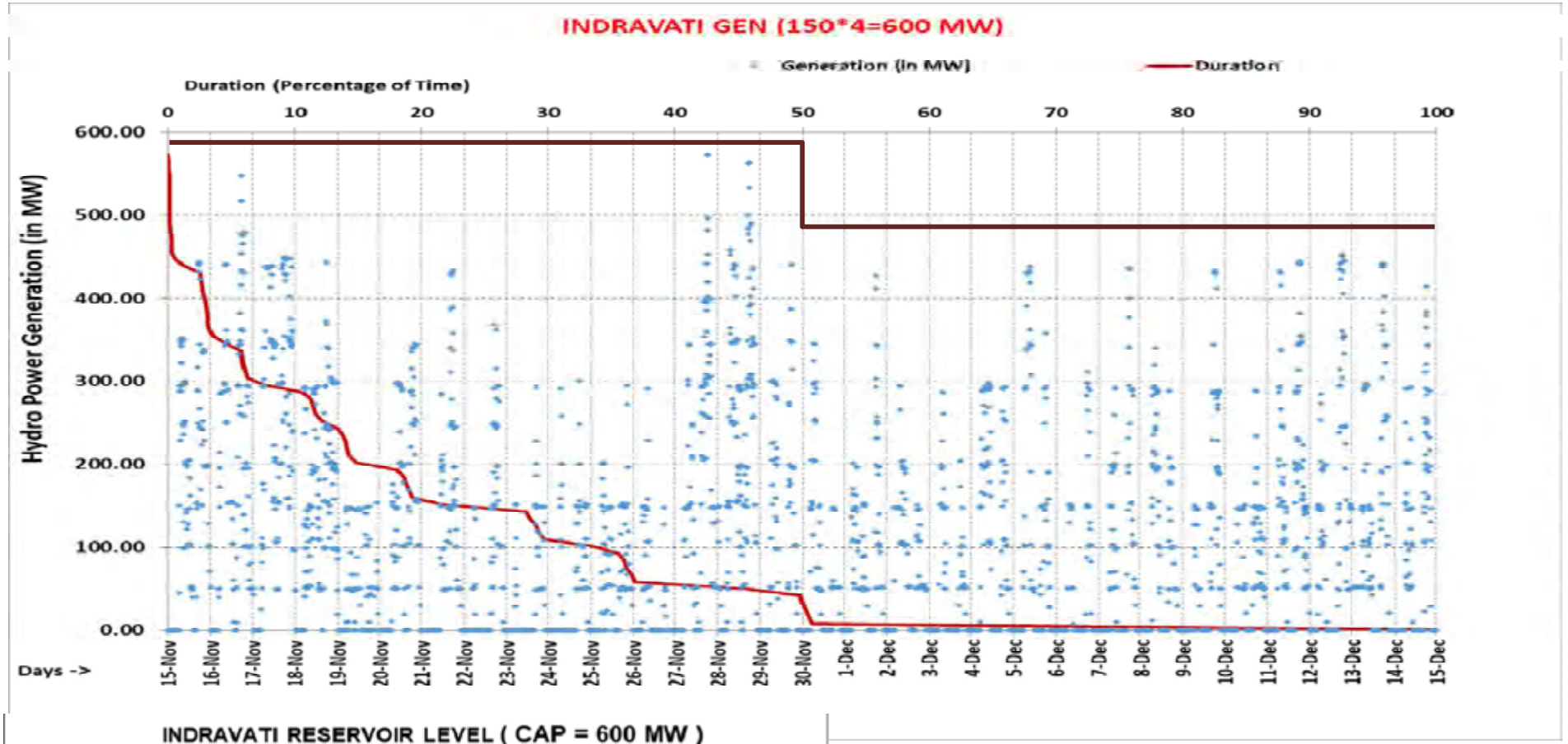
Unit No	Date of Outage	Reason
U – 1(60 MW)	05.08.16	R & M Work
U – 7 (75 MW)	12.10.17(17:30)	Generator problem
U – 2(60 MW)	20.11.17	R & M Work

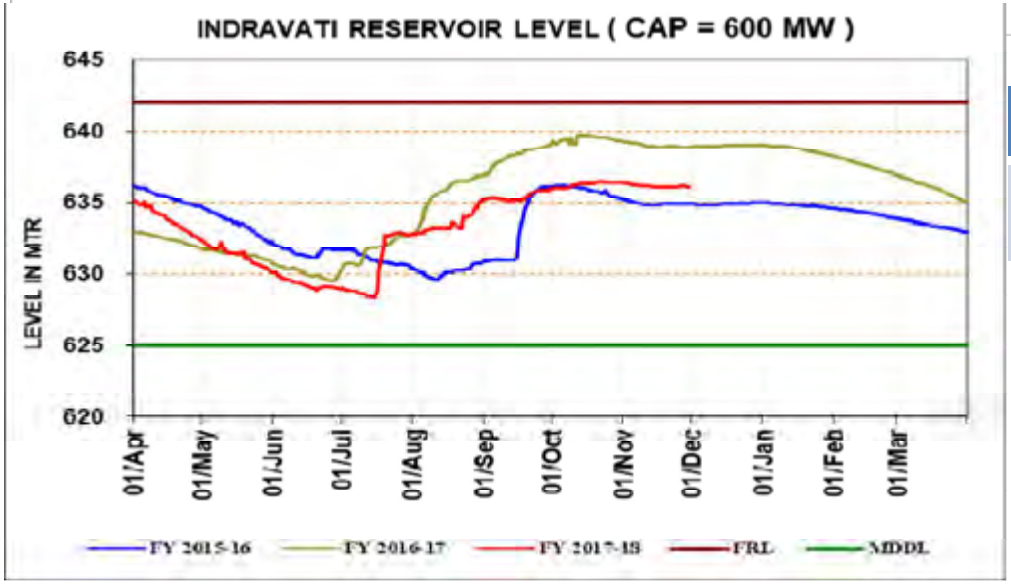




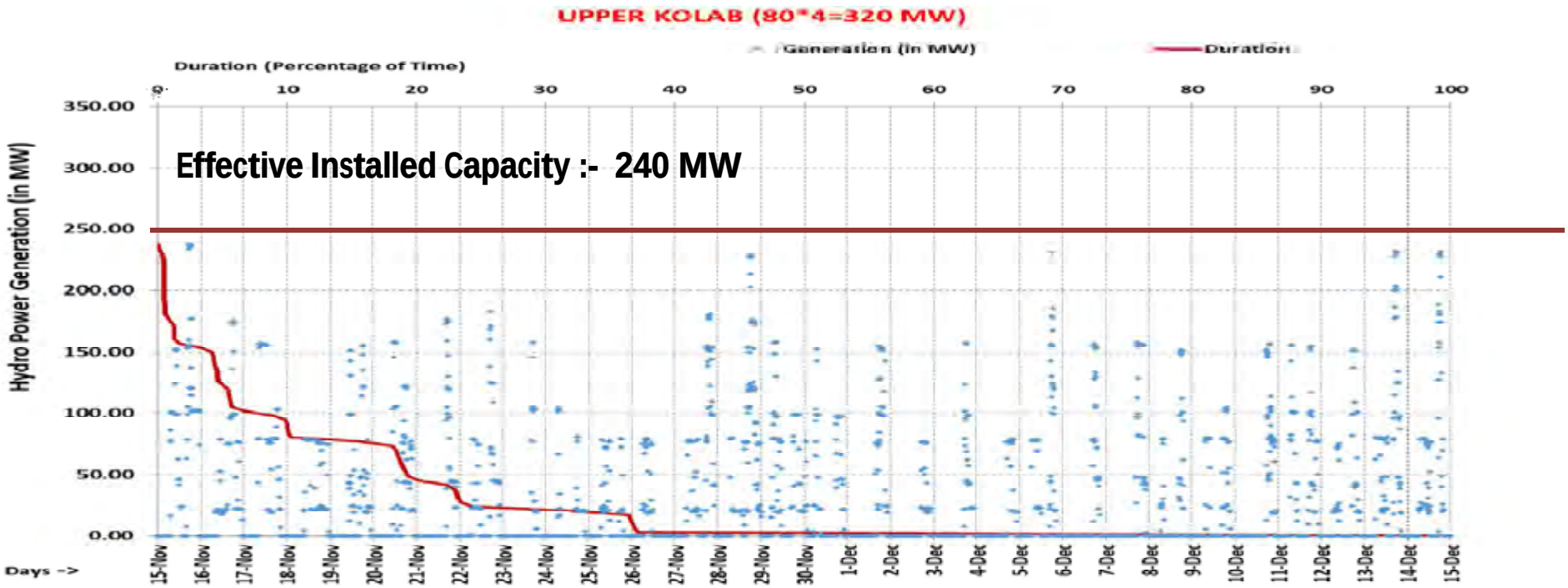
Unit No	Date of Outage	Reason
U - 5	21.03.2017	Hoist Gate Problem

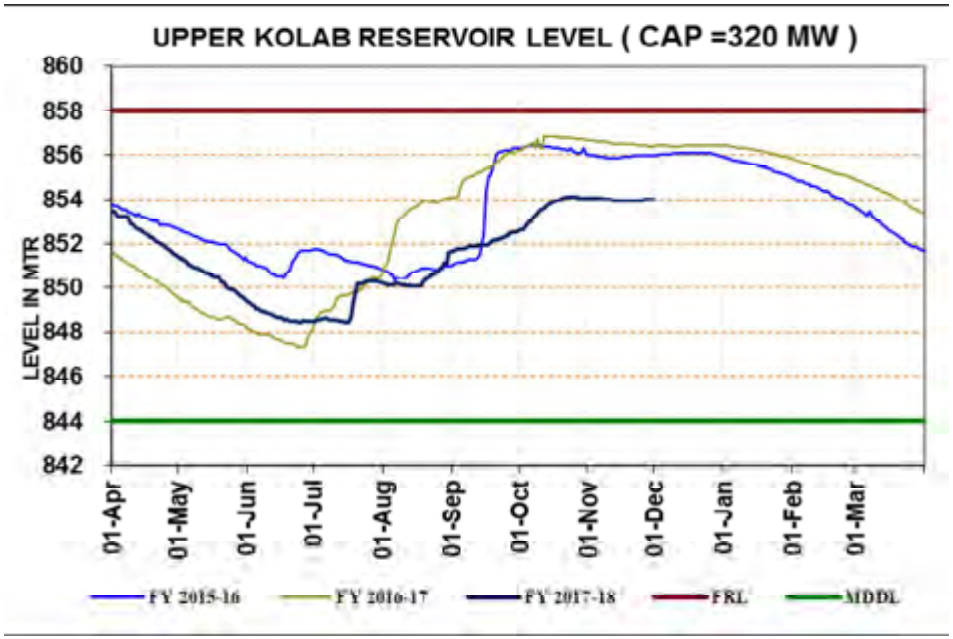
U-1 synchronized during November



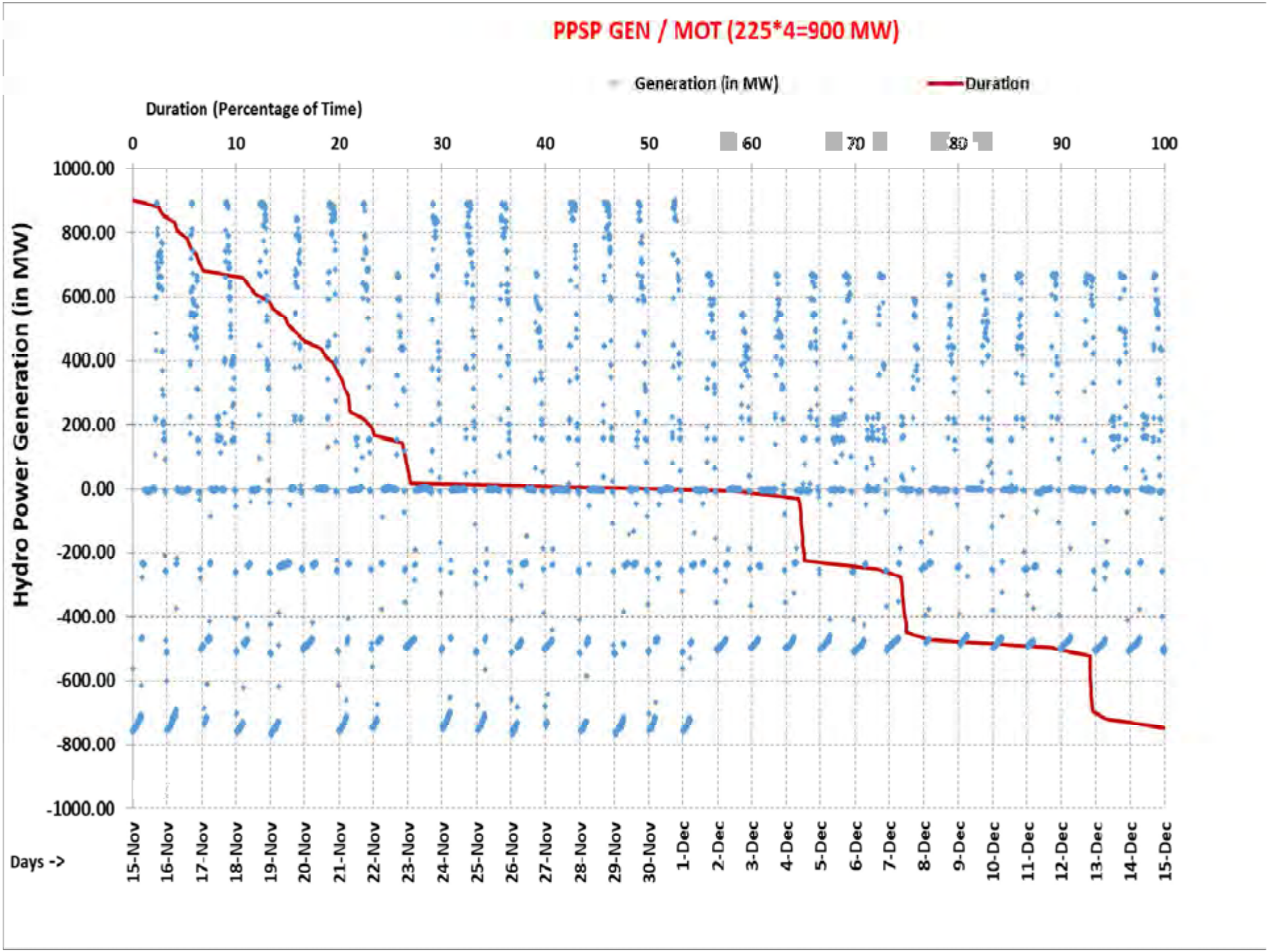


Unit No	Date of Outage	Reason
U - 1	01.12.2017	Annual Maint

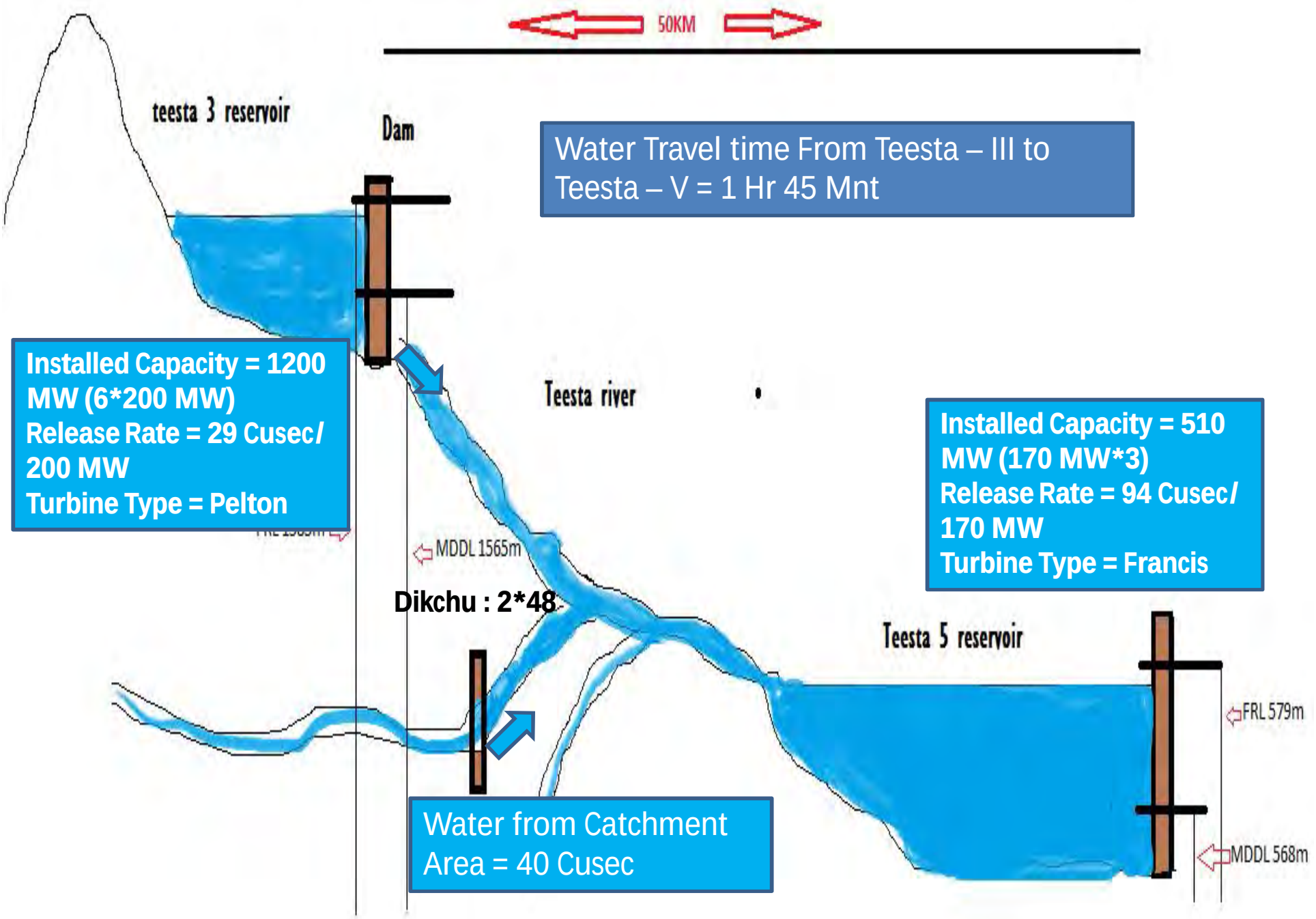


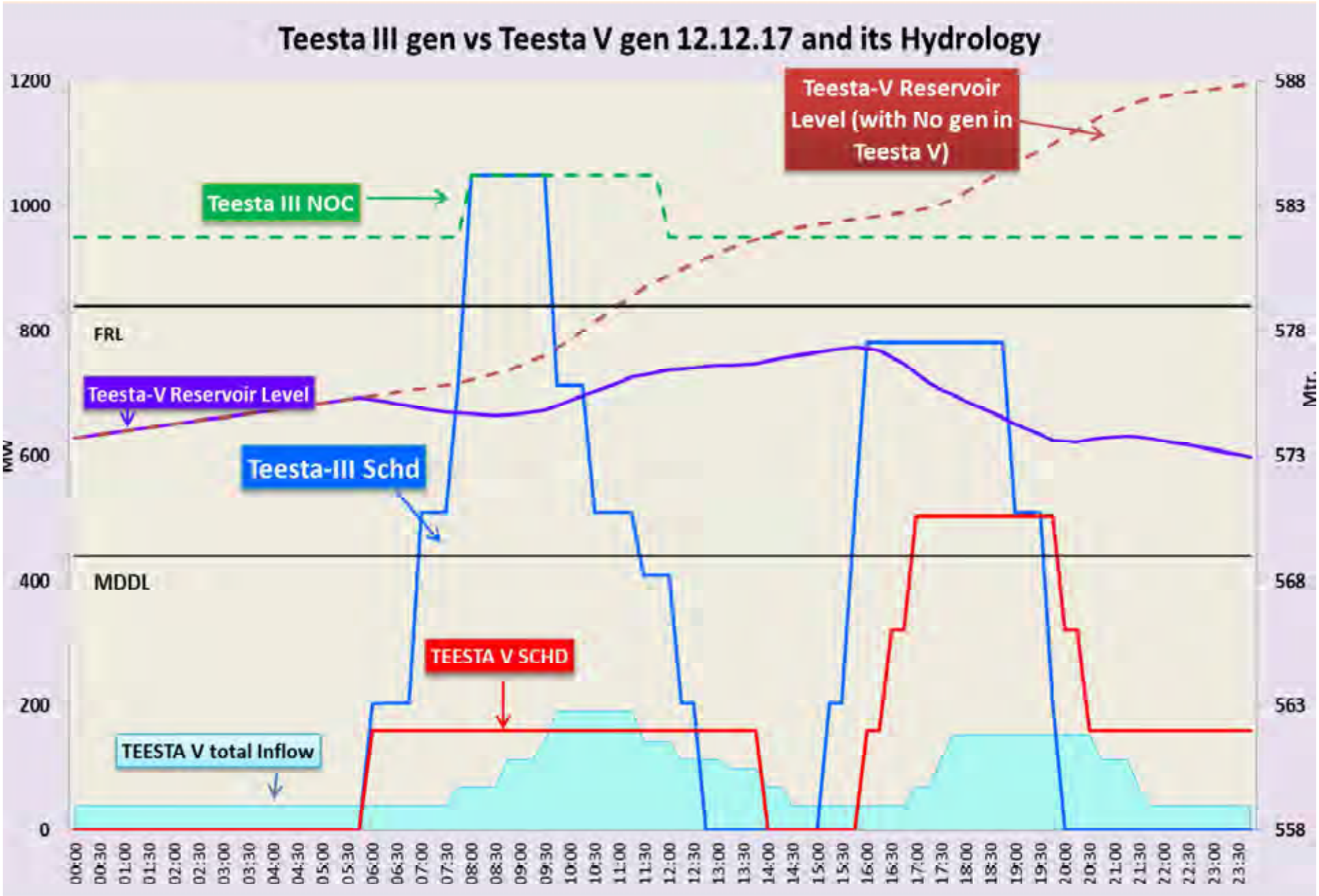


Unit No	Date of Outage	Reason
U – 2(80 MW)	28.05.2017	Repair of MIV & Draft Tube Gate leakage

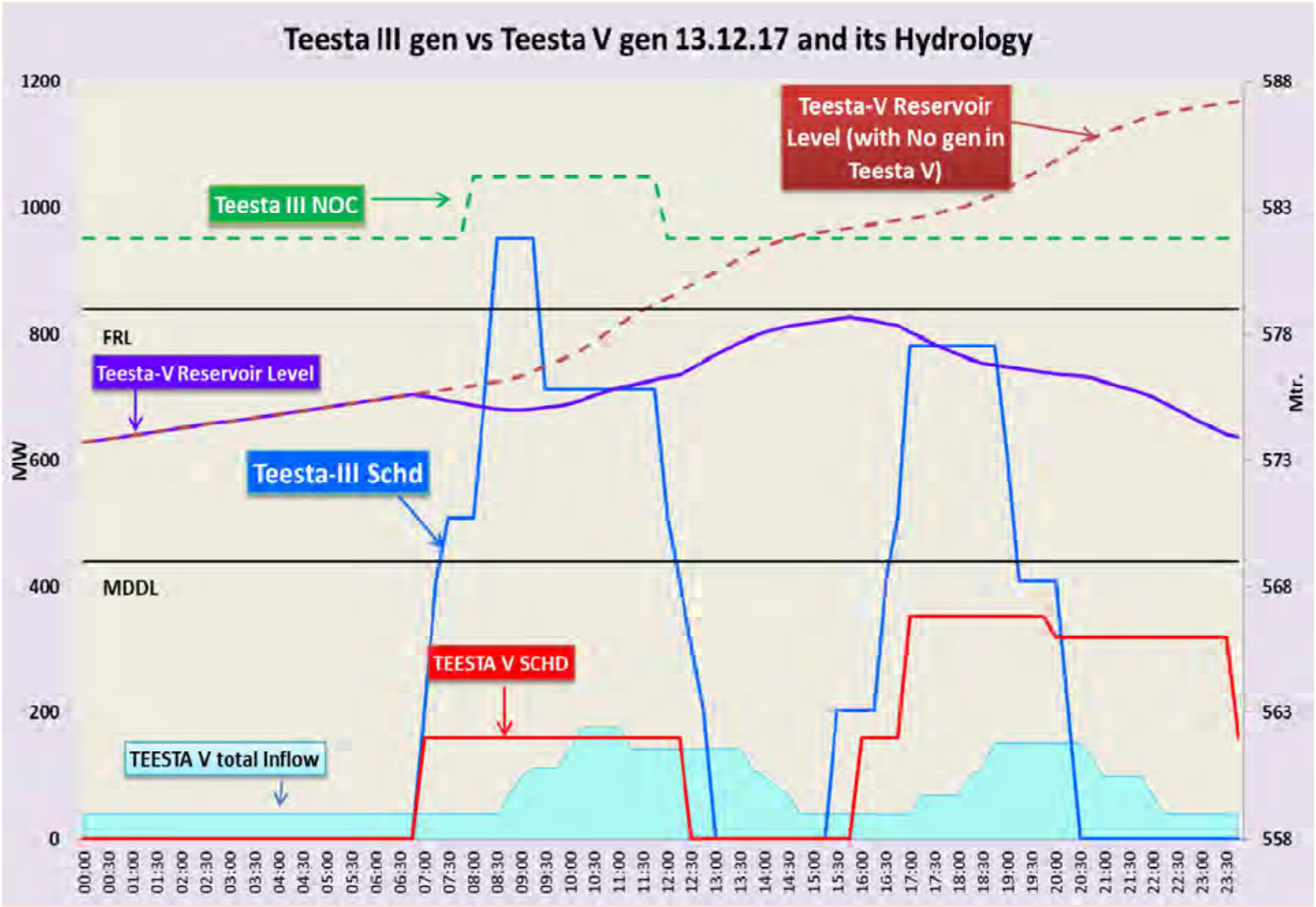

PPSP GEN / MOT (225*4=900 MW)
Generation (in MW)
Duration
Duration (Percentage of Time)
0
10
20
30
40
50
60
70
80
90
100
Hydro Power Generation (in MW)
1000.00
800.00
600.00
400.00
200.00
0.00
-200.00
-400.00
-600.00
-800.00
-1000.00
Days ->
15-Nov
16-Nov
17-Nov
18-Nov
19-Nov
20-Nov
21-Nov
22-Nov
23-Nov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

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

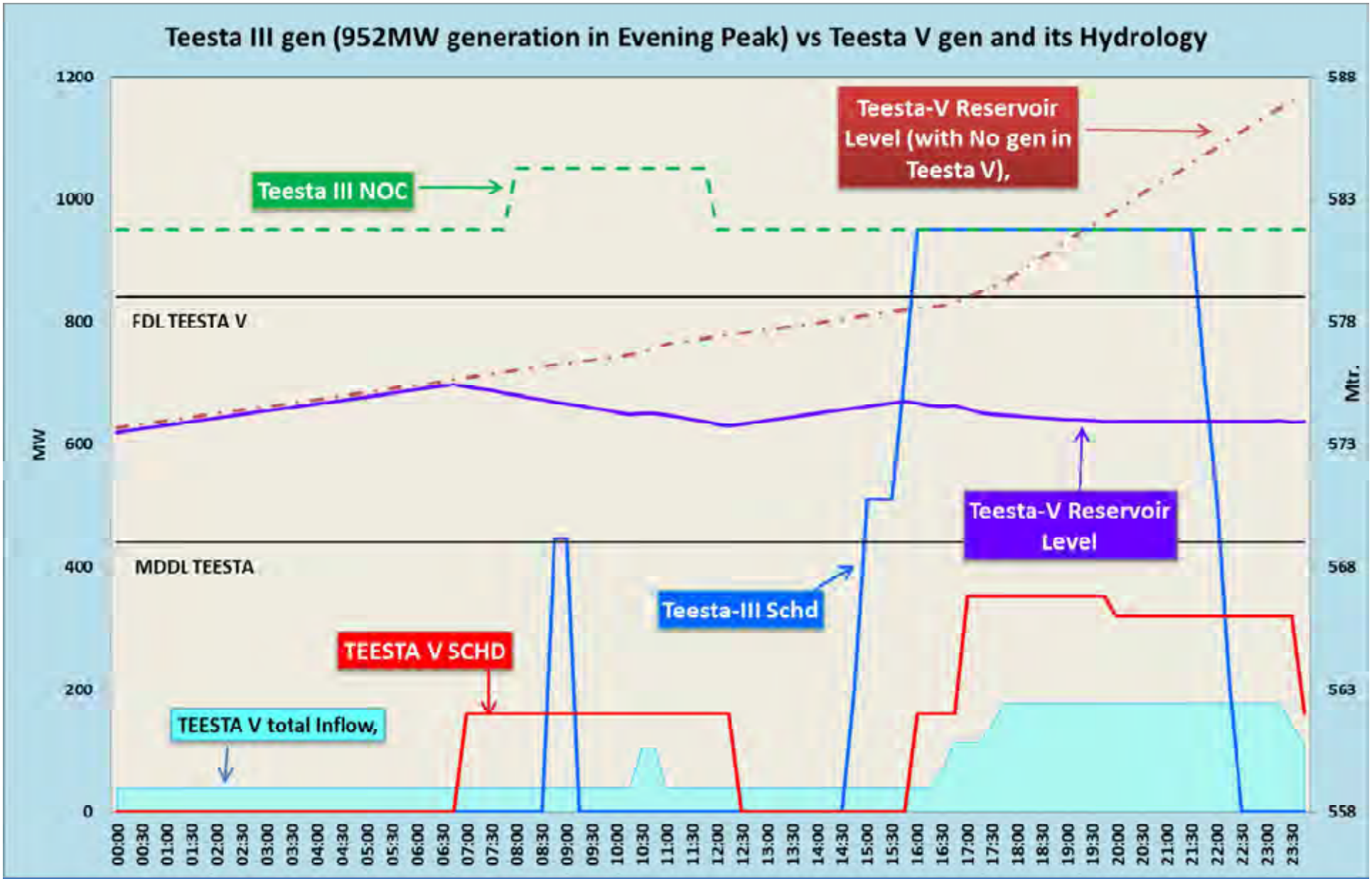

50KM
teesta 3 reservoir
Dam
Water Travel time From Teesta – III to Teesta – V = 1 Hr 45 Mnt
Installed Capacity = 1200 MW (6*200 MW)
Release Rate = 29 Cusec/ 200 MW
Turbine Type = Pelton
Teesta river
Installed Capacity = 510 MW (170 MW*3)
Release Rate = 94 Cusec/ 170 MW
Turbine Type = Francis
MDDL 1565m
Dikchu : 2*48
Teesta 5 reservoir
FRL 579m
MDDL 568m
Water from Catchment Area = 40 Cusec



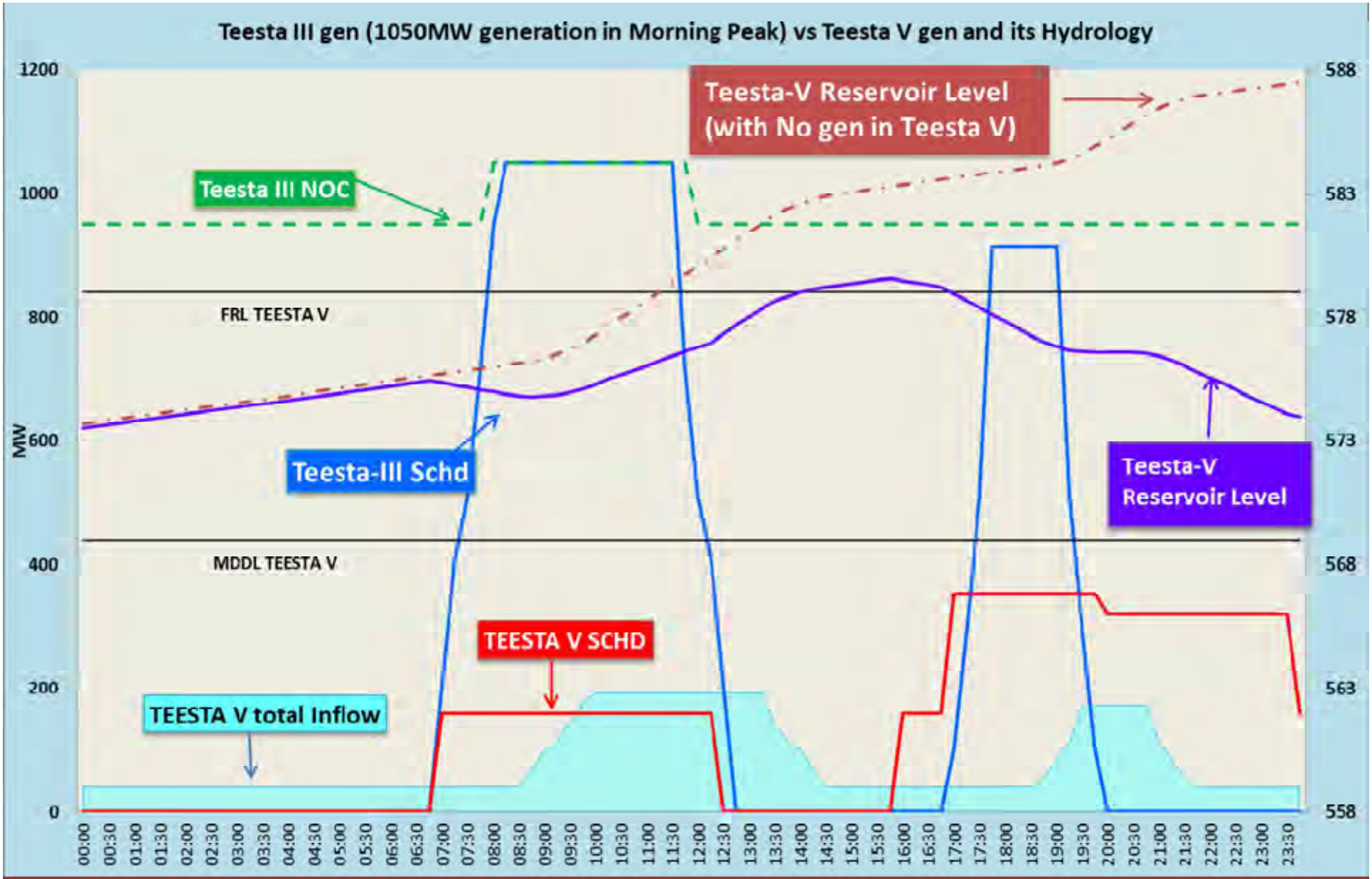
Teesta – III and Teesta – V 12.12.17 generation pattern with three M/Cs at Teesta – V on Bar



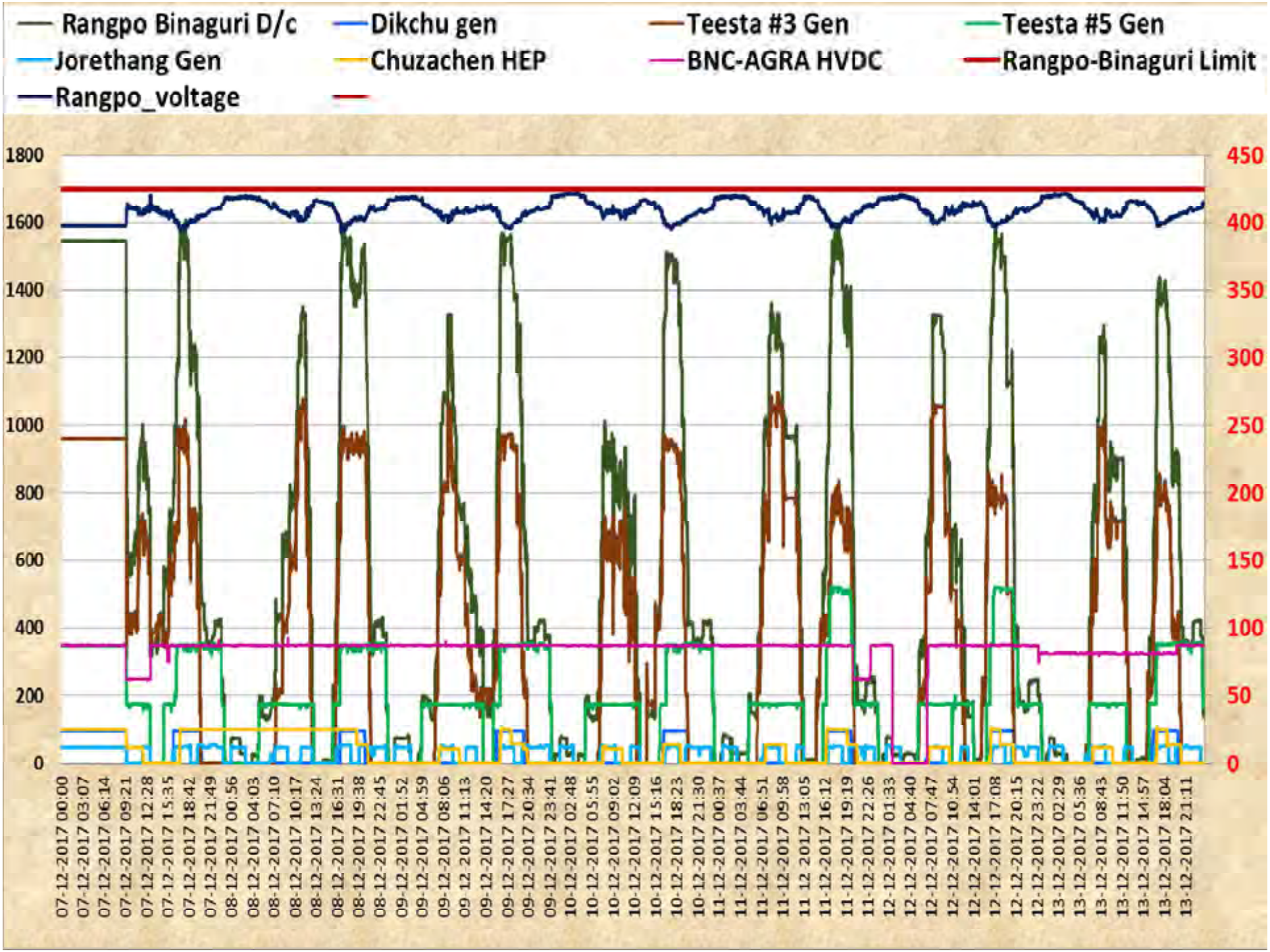
Teesta – III and Teesta – V 13.12.17 generation pattern with two M/Cs at Teesta – V on Bar



Considering same energy of Teesta – III for 13.12.17 and Maximum amount dispatched during evening period (17:00 to 22:00). No spillage in water at Teesta – V for the dispatch case



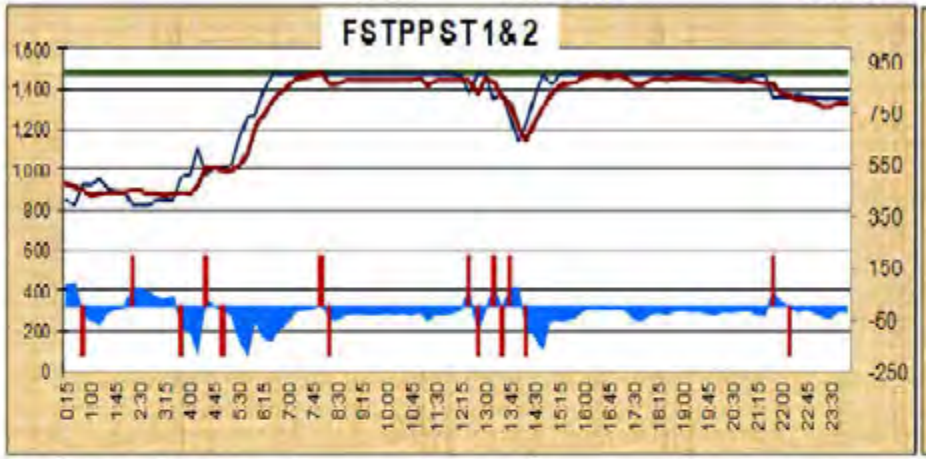
Considering same energy of Teesta – III for 13.12.17 and Maximum amount dispatched during morning period (08:00 to 12:00). Little spillage in water at Teesta – V for the dispatch case. Can be avoided with advancing re-dispatch by Teesta – V.


Rangpo Binaguri D/c
Dikchu gen
Teesta #3 Gen
Teesta #5 Gen
Jorethang Gen
Chuzachen HEP
BNC-AGRA HVDC
Rangpo-Binaguri Limit
Rangpo_voltage
1800
1600
1400
1200
1000
800
600
400
200
0
450
400
350
300
250
200
150
100
50
0
07-12-2017 00:00
07-12-2017 03:07
07-12-2017 06:14
07-12-2017 09:21
07-12-2017 12:28
07-12-2017 15:35
07-12-2017 18:42
07-12-2017 21:49
08-12-2017 00:56
08-12-2017 04:03
08-12-2017 07:10
08-12-2017 10:17
08-12-2017 13:24
08-12-2017 16:31
08-12-2017 19:38
08-12-2017 22:45
09-12-2017 01:52
09-12-2017 04:59
09-12-2017 08:06
09-12-2017 11:13
09-12-2017 14:20
09-12-2017 17:27
09-12-2017 20:34
09-12-2017 23:41
10-12-2017 02:48
10-12-2017 05:55
10-12-2017 09:02
10-12-2017 12:09
10-12-2017 15:16
10-12-2017 18:23
10-12-2017 21:30
11-12-2017 00:37
11-12-2017 03:44
11-12-2017 06:51
11-12-2017 09:58
11 12 2017 13:05
11-12-2017 16:12
11-12-2017 19:19
11-12-2017 22:26
12-12-2017 01:33
12-12-2017 04:40
12-12-2017 07:47
12-12-2017 10:54
12-12-2017 14:01
12-12-2017 17:08
12-12-2017 20:15
12-12-2017 23:22
13-12-2017 02:29
13-12-2017 05:36
13-12-2017 08:43
13-12-2017 11:50
13-12-2017 14:57
13-12-2017 18:04
13-12-2017 21:11

ISGS (THERMAL) DC, SCHEDULE & ACTUAL GENERATION

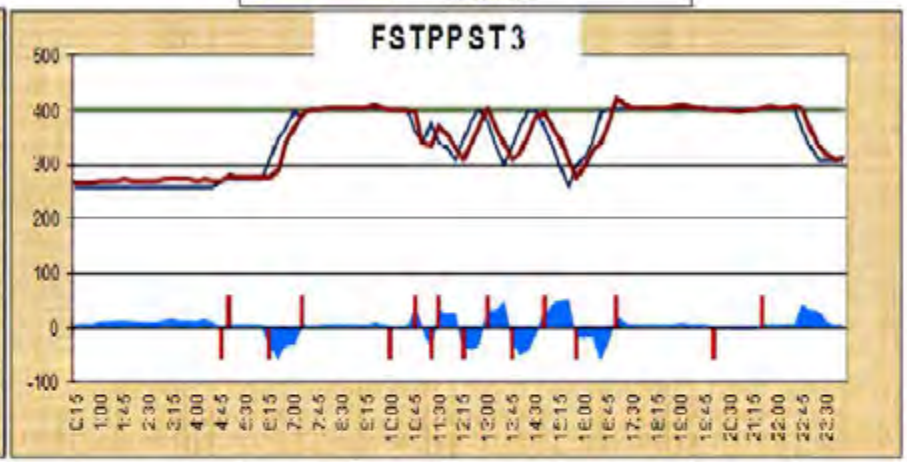
DATE : 11 Dec 2017 Monday

FSTPP ST1&2



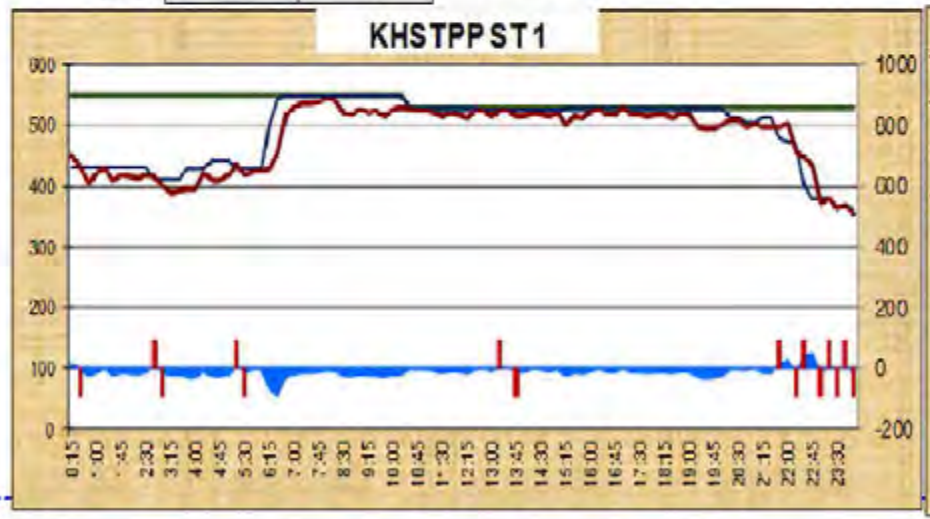
Act MU	MAX	MIN	Min/Max	UI	schd MU
30.96	1478	870	0.59	-0.66	31.62
Time:	8:00	1:00			

FSTPP ST3



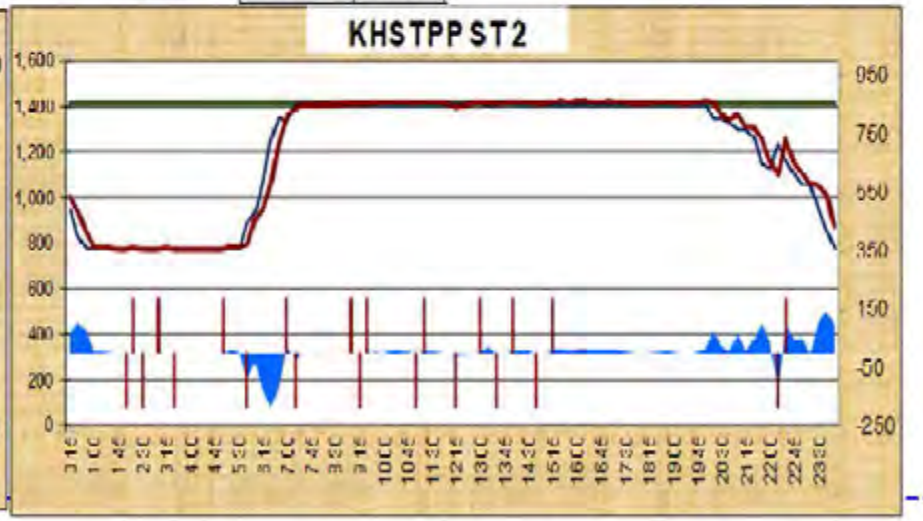
Act MU	MAX	MIN	Min/Max	UI	schd MU
8.3	419	265	0.63	0.05	8.27
Time:	17:00	0:45			

KHSTPP ST1



Act MU	MAX	MIN	Min/Max	UI	schd MU
11.5	544	364	0.65	-0.29	11.83
Time:	8:00	0:00			

KHSTPP ST2



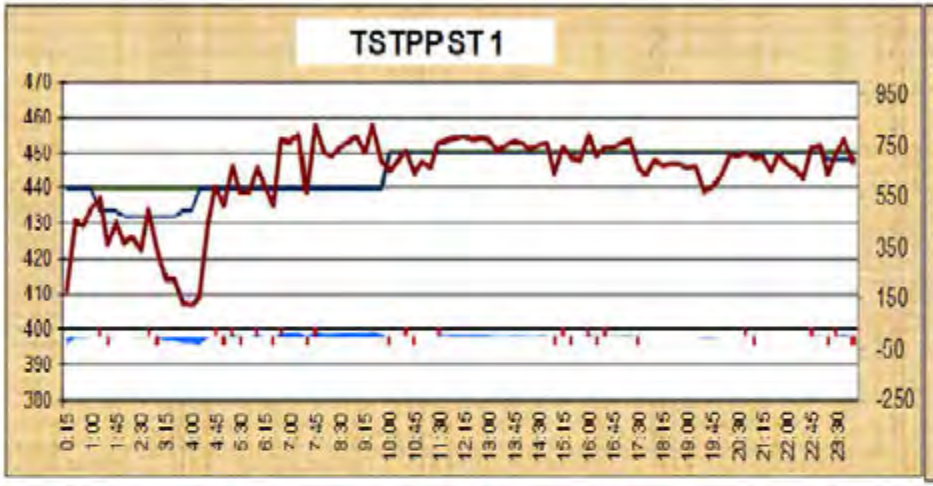
Act MU	MAX	MIN	Min/Max	UI	schd MU
29.2	1428	776	0.54	0.18	29.01
Time:	16:15	4:30			

ISGS (THERMAL) DC, SCHEDULE & ACTUAL GENERATION

DATE : 11 Dec 2017 Monday

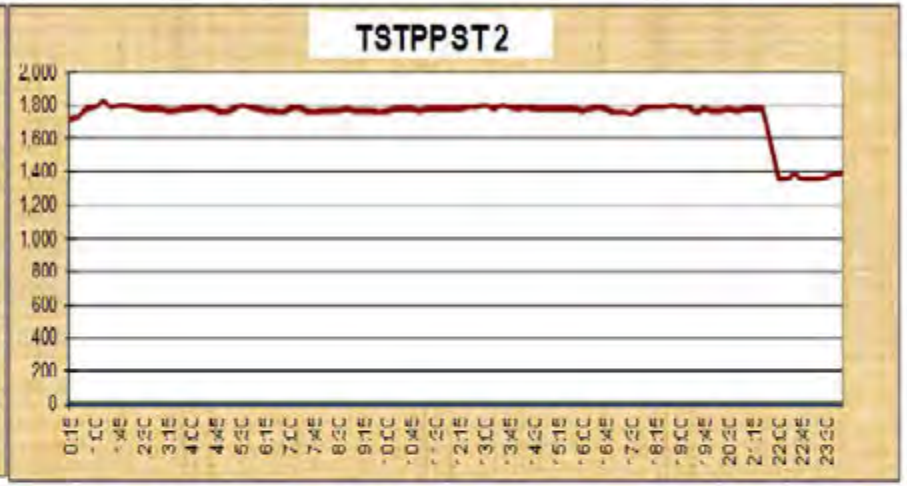
DC
Actual
Schedule

TSTPPST1



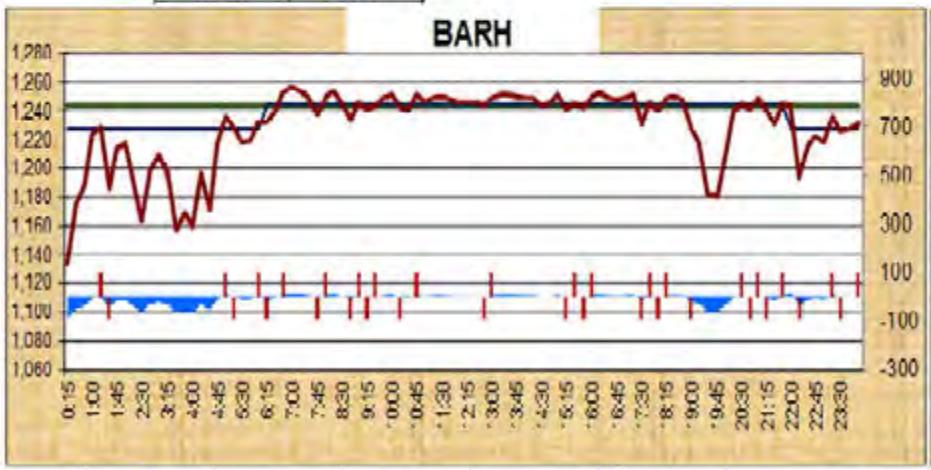
Act MU	MAX	MIN	Min/Max	UI	schd MU
10.6	458	407	0.89	-0.03	10.67
Time:	9:30	4:00			

TSTPPST2



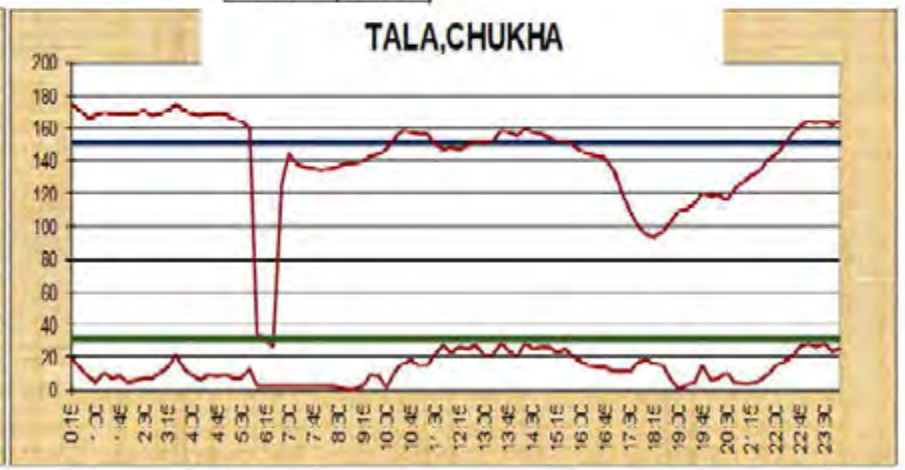
Act MU	MAX	MIN	Min/Max	UI	schd MU
41.7	1828	1356	0.74	41.75	0.00
Time:	1:15	23:00			

BARH



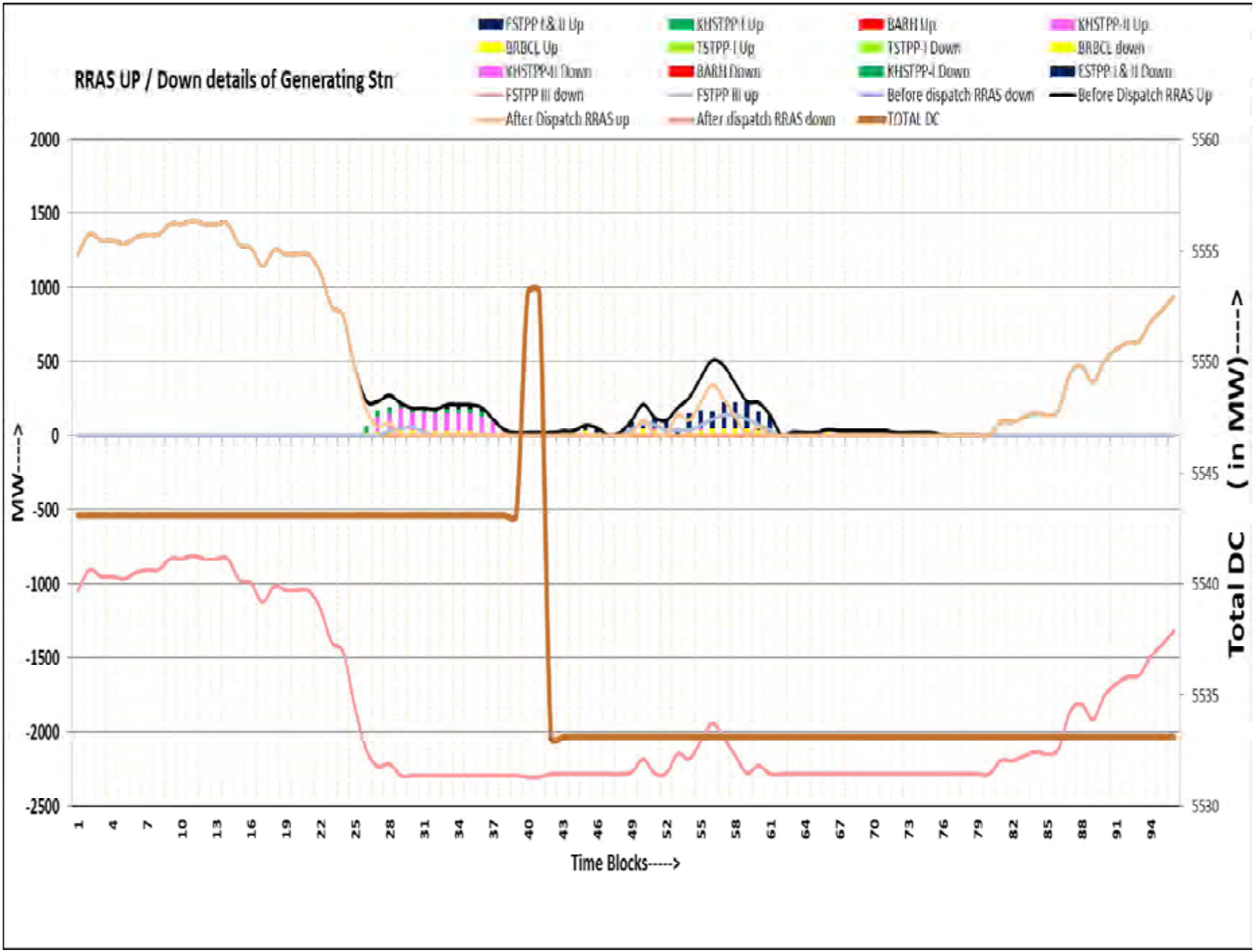
Act MU	MAX	MIN	Min/Max	UI	schd MU
29.5	1256	1134	0.90	-0.21	29.72
Time:	7:00	0:15			

TALA,CHUKHA



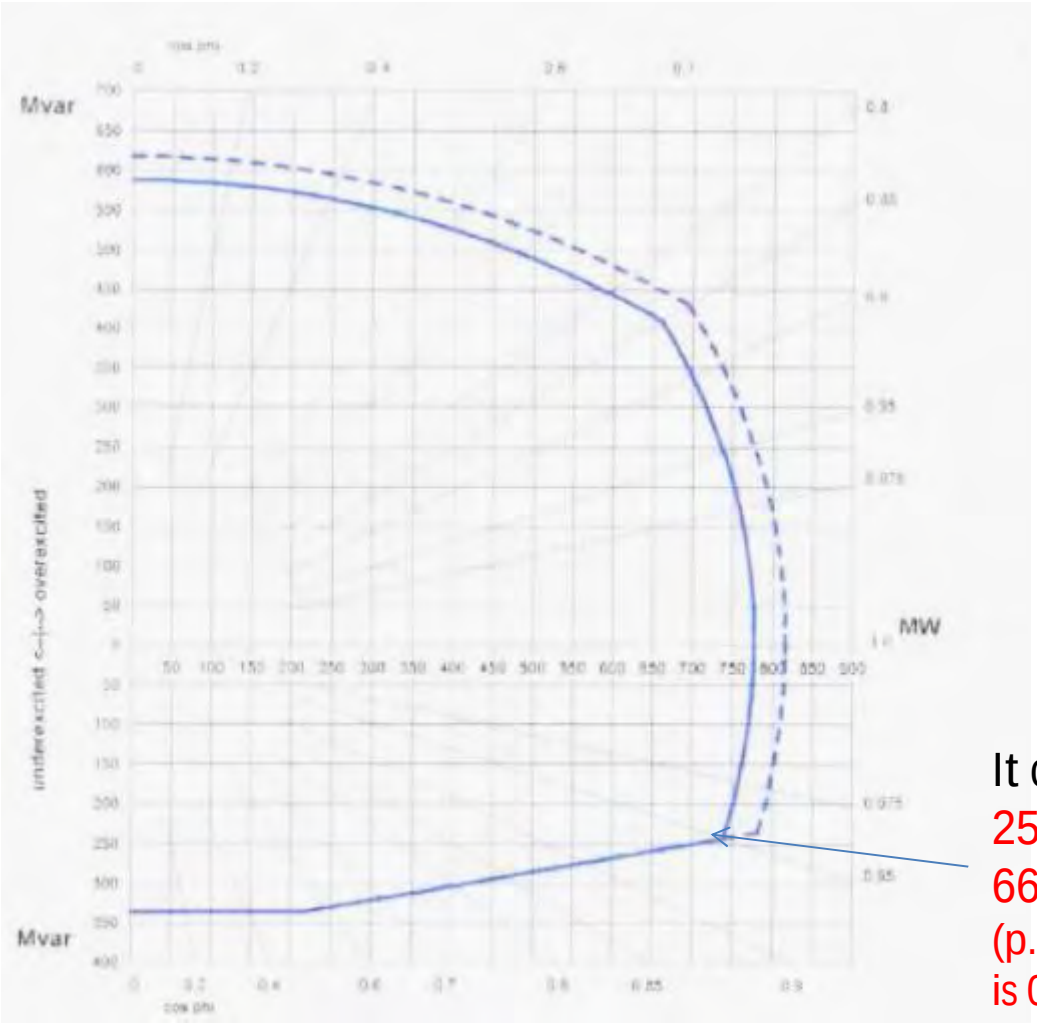
Tala Hydro	SCHD MU	ACT MU
	3.62	3.44

Chukha Hydro	SCHD MU	ACT MU
	0.77	0.32

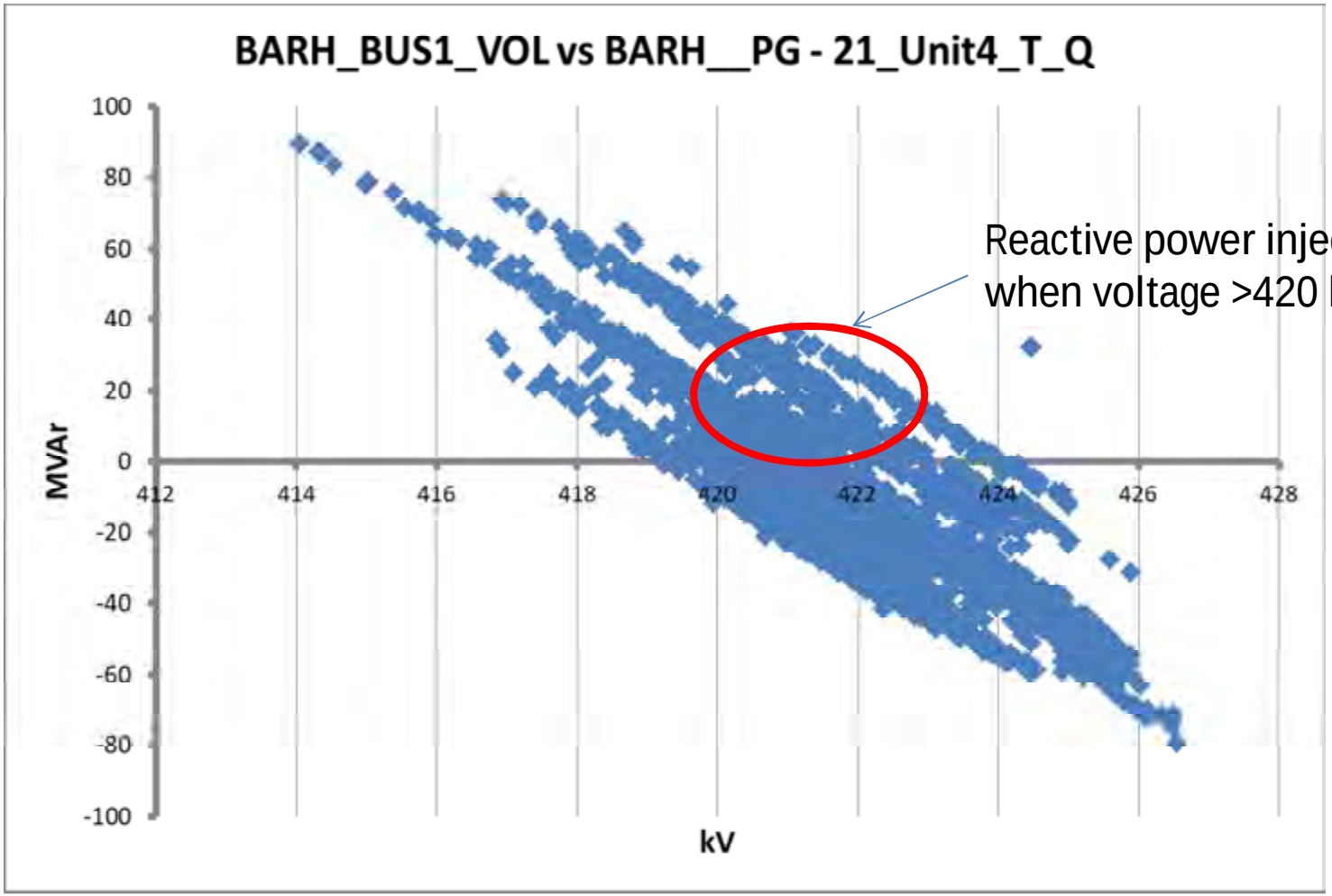

RRAS UP / Down details of Generating Stn
FSTPP I & II Up
KHSTPP-I Up
BARH Up
KHSTPP-II Up
BRBCL Up
TSTPP-I Up
TSTPP-I Down
BRBCL down
KHSTPP-II Down
BARH Down
KHSTPP-I Down
FSTPP I & II Down
FSTPP III down
FSTPP III up
Before dispatch RRAS down
Before Dispatch RRAS Up
After Dispatch RRAS up
After dispatch RRAS down
TOTAL DC
2000
1500
1000
500
0
-500
-1000
-1500
-2000
-2500
MW---->
5560
5555
5550
5545
5540
5535
5530
(in MW)---->
Total DC
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94
Time Blocks---->

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

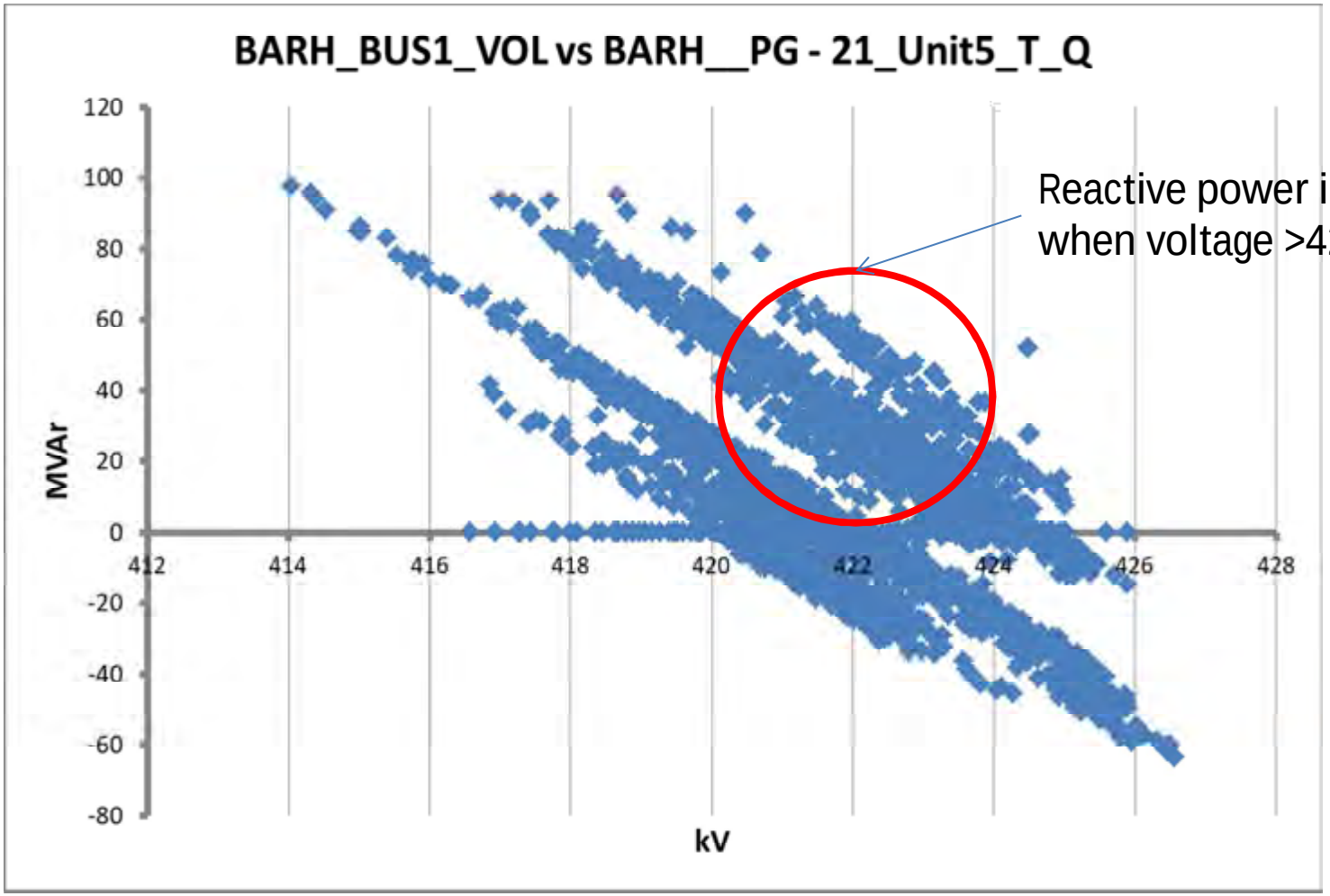
Reactive power capability curve of Barh 660 MW units



It can absorb more than 250 MVAR when output is 660 MW
(p.f. at 250 MVAR absorption is 0.935 lead)

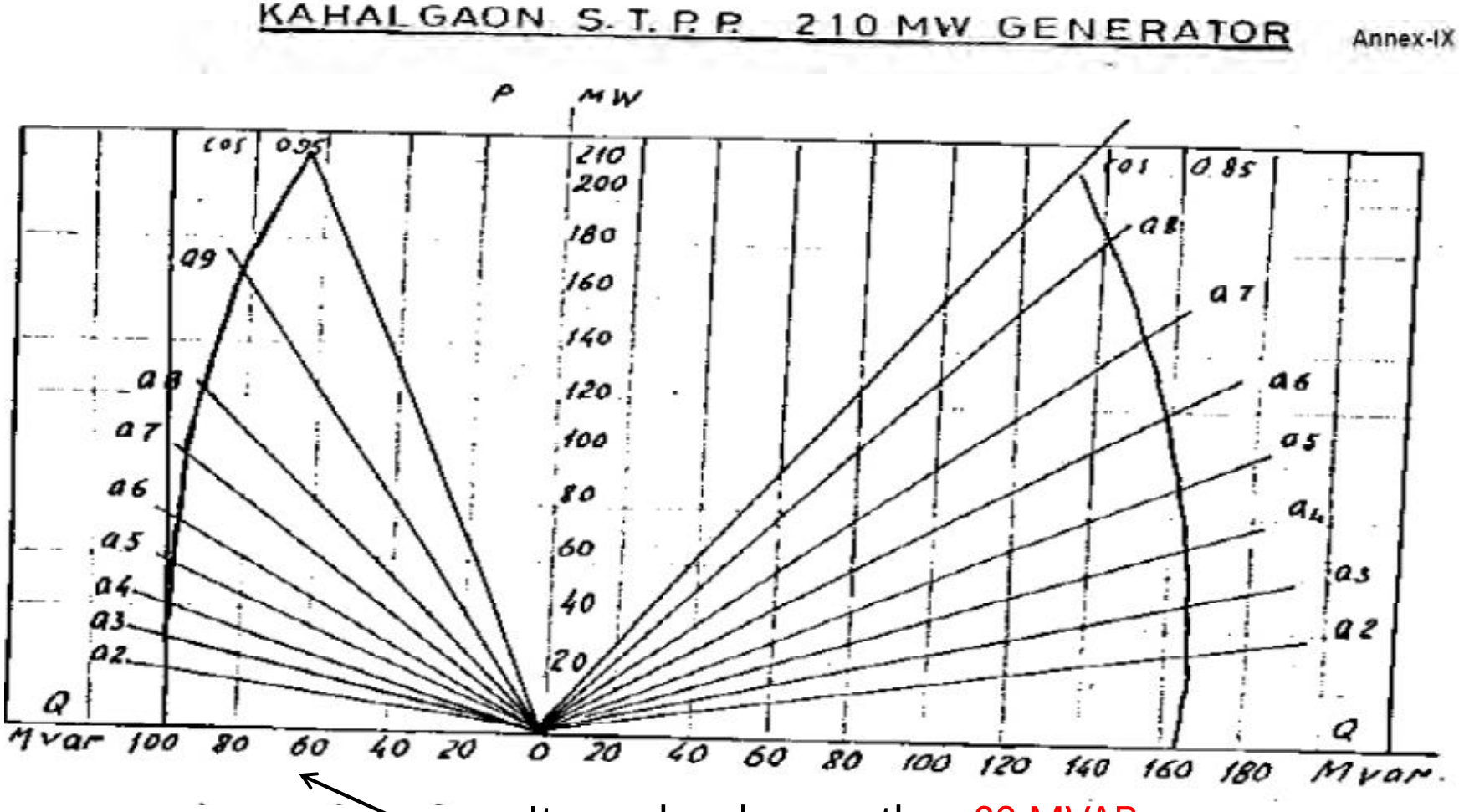


Maximum MVAr absorption is 80 MVAr



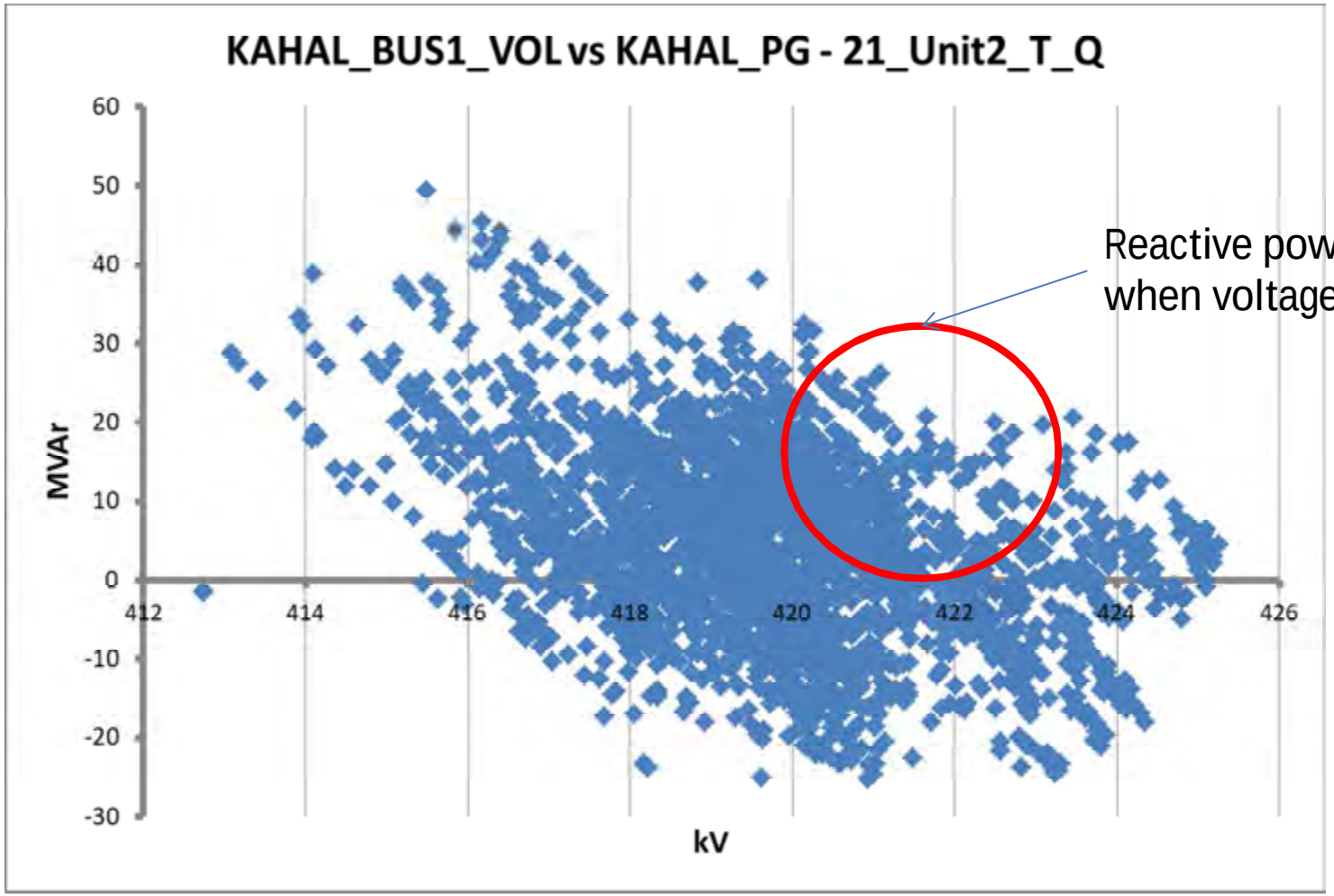
Maximum MVAr absorption is 60 MVAr

Reactive power capability curve of KhSTPP 210 MW units

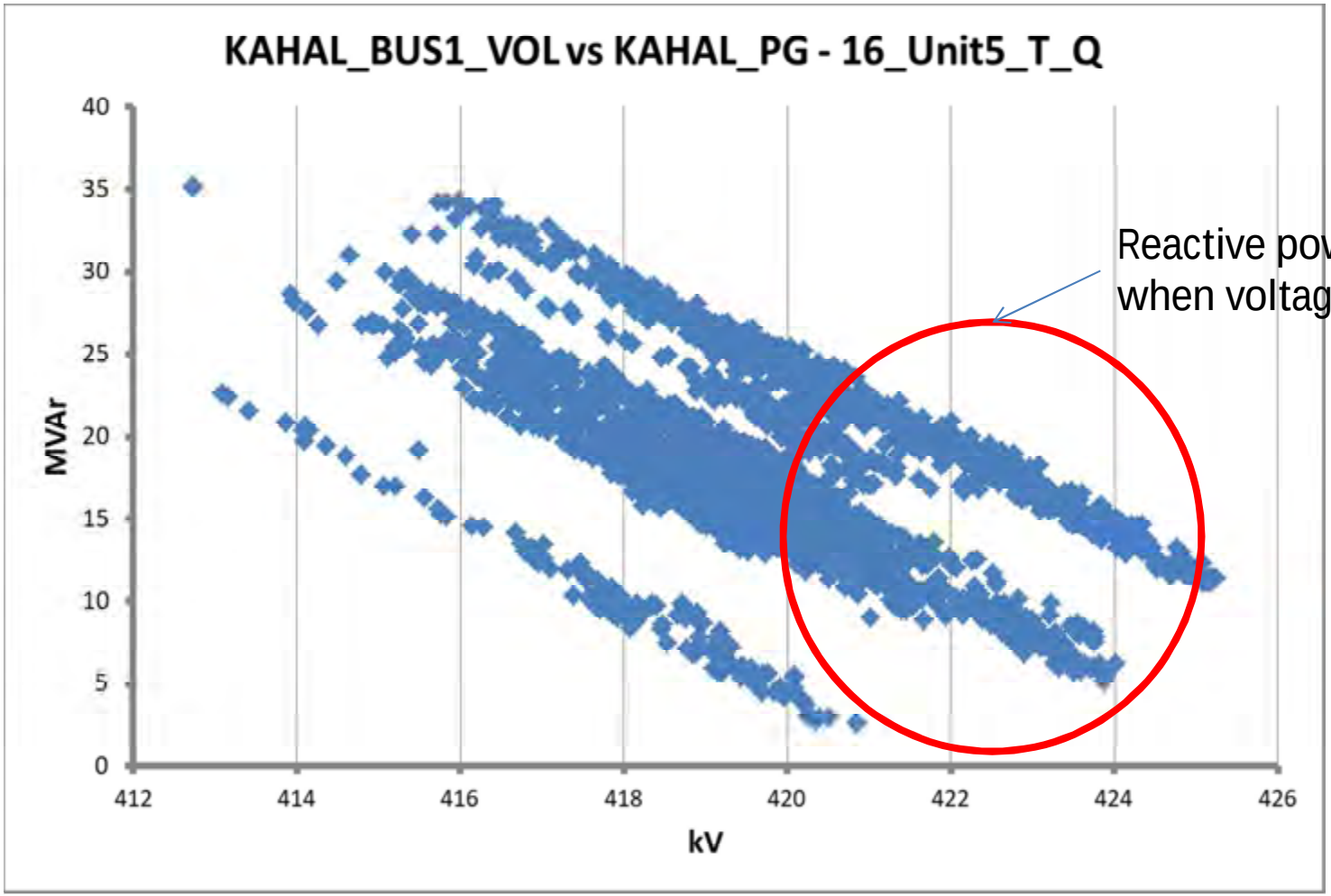


It can absorb more than 60 MVAR when output is 210 MW

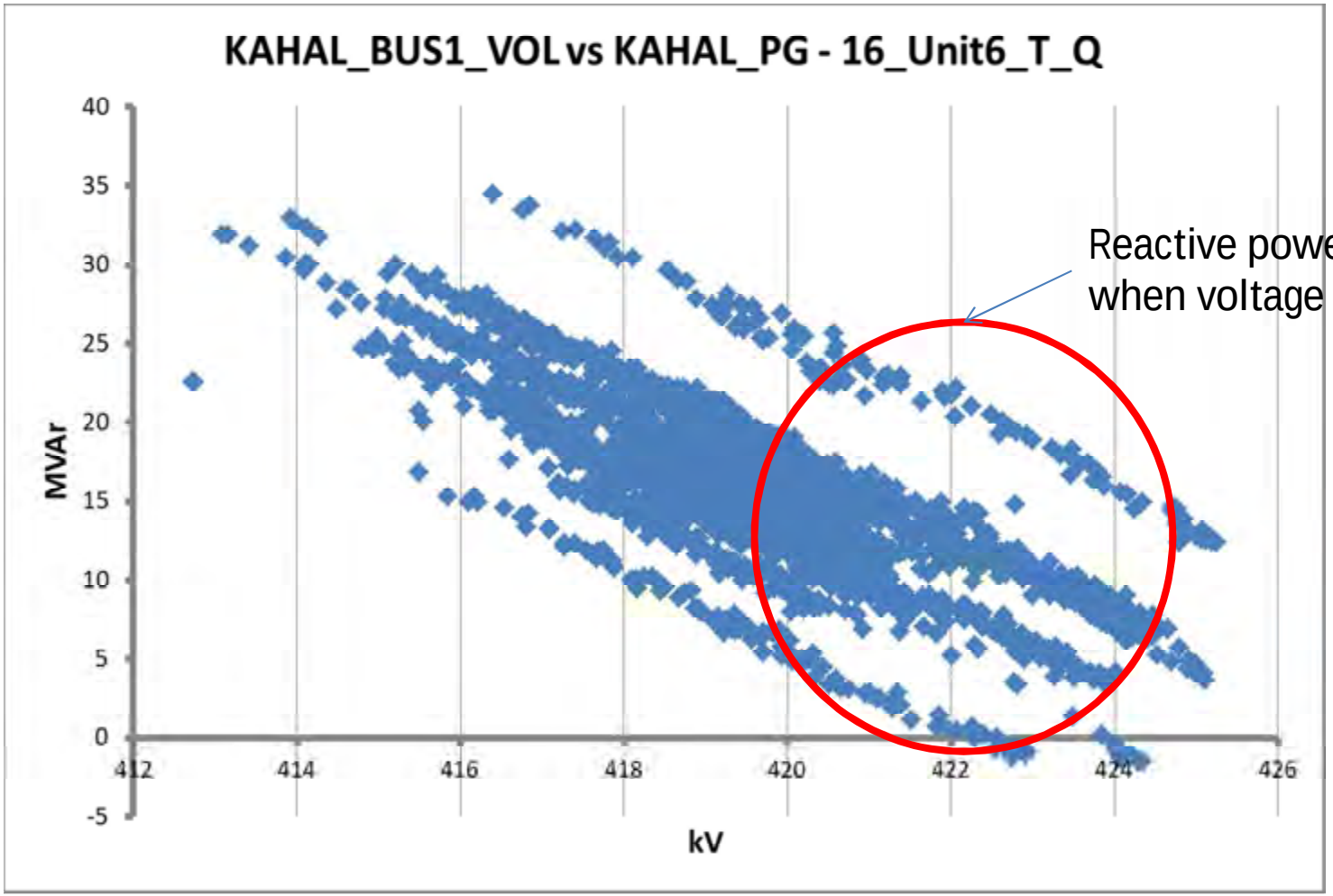
(p.f. at 60 MVAR absorption is 0.96 lead)



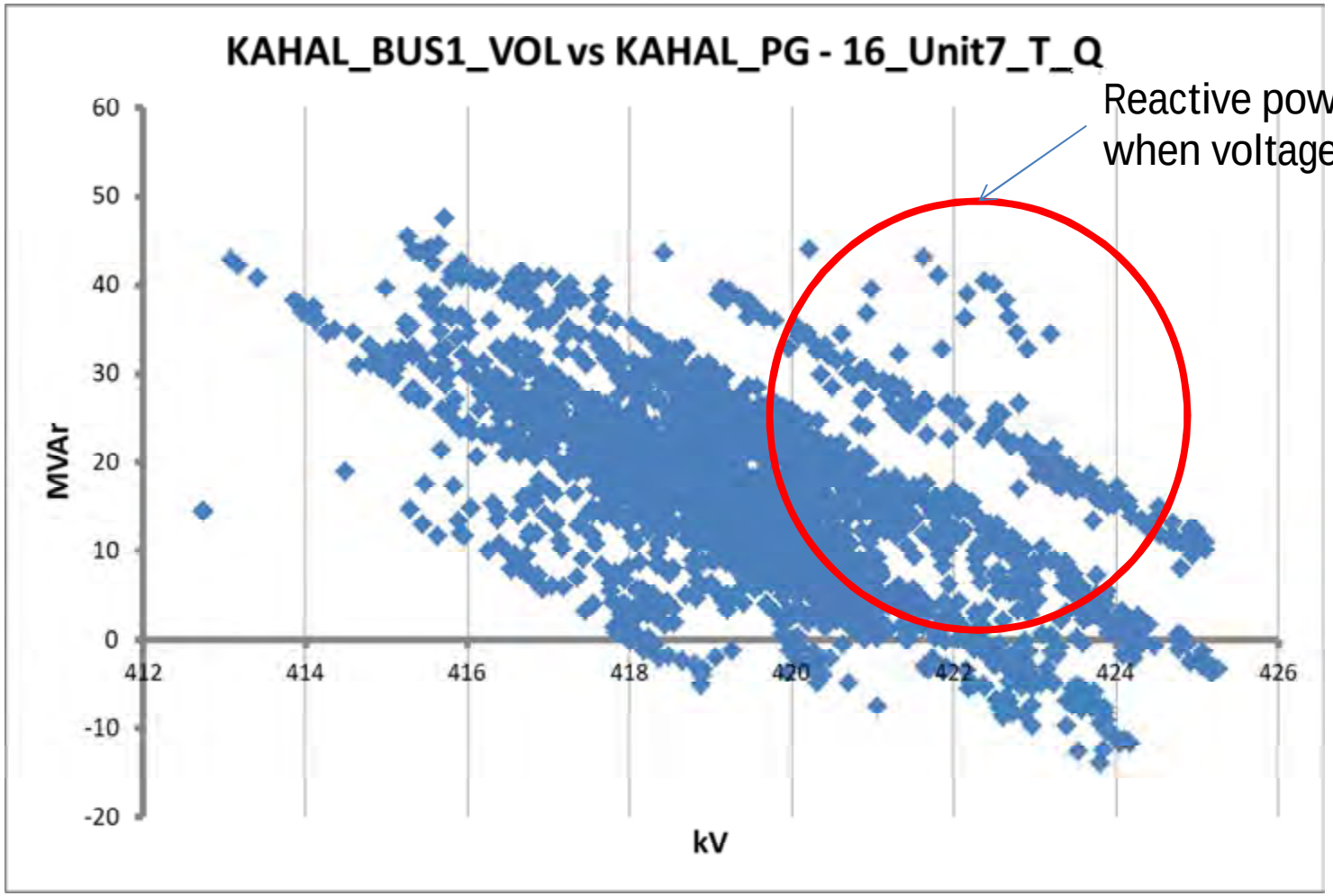
Maximum MVAr absorption is 30 MVAr



No MVAr absorption. As per reactive power capability test of unit 5, maximum allowable MVAr absorption limit: 112 MVAr when output is 471 MW

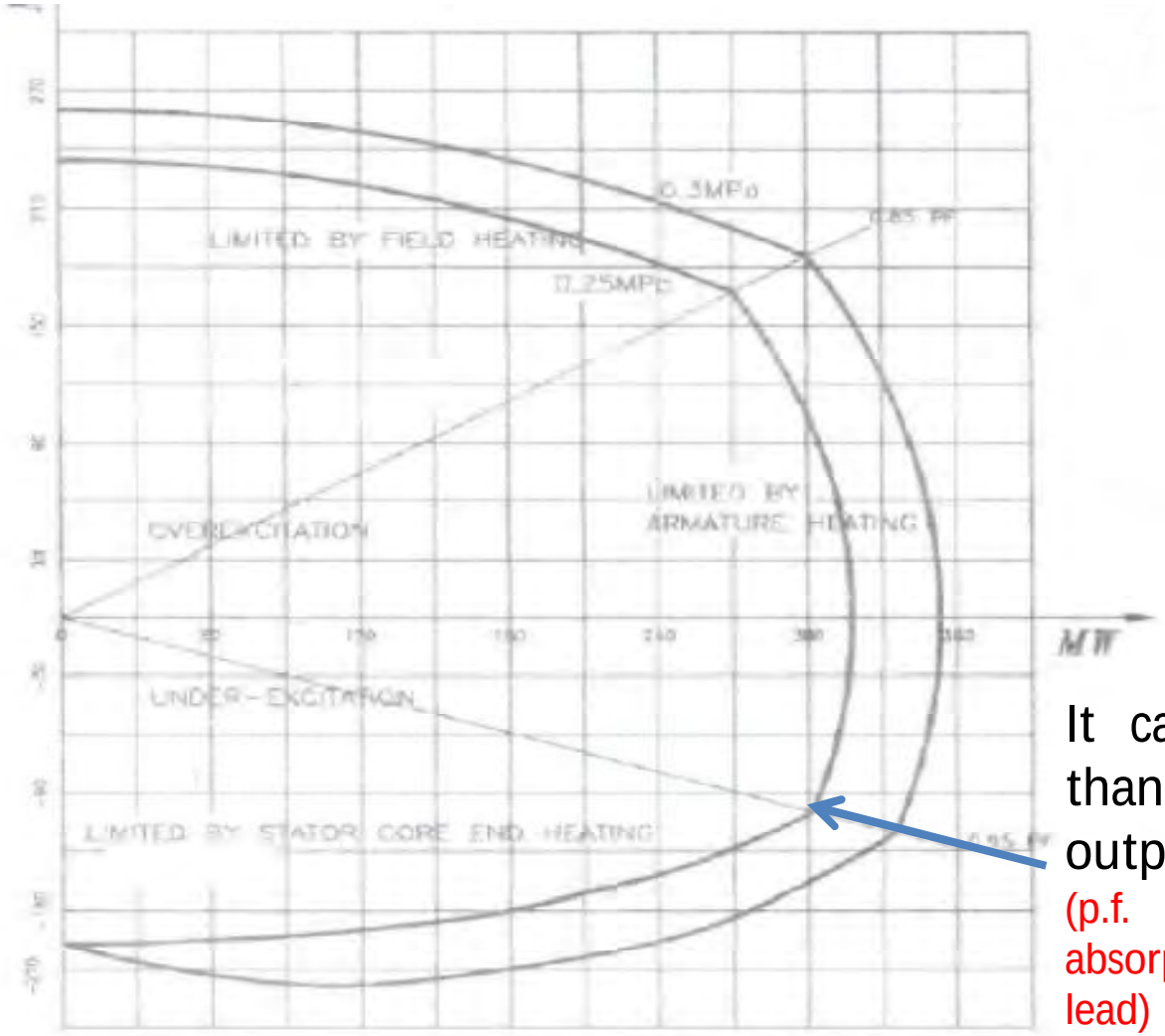


No MVAr absorption. As per reactive power capability test of unit 5, maximum allowable MVAr absorption limit: 112 MVAr when output is 471 MW

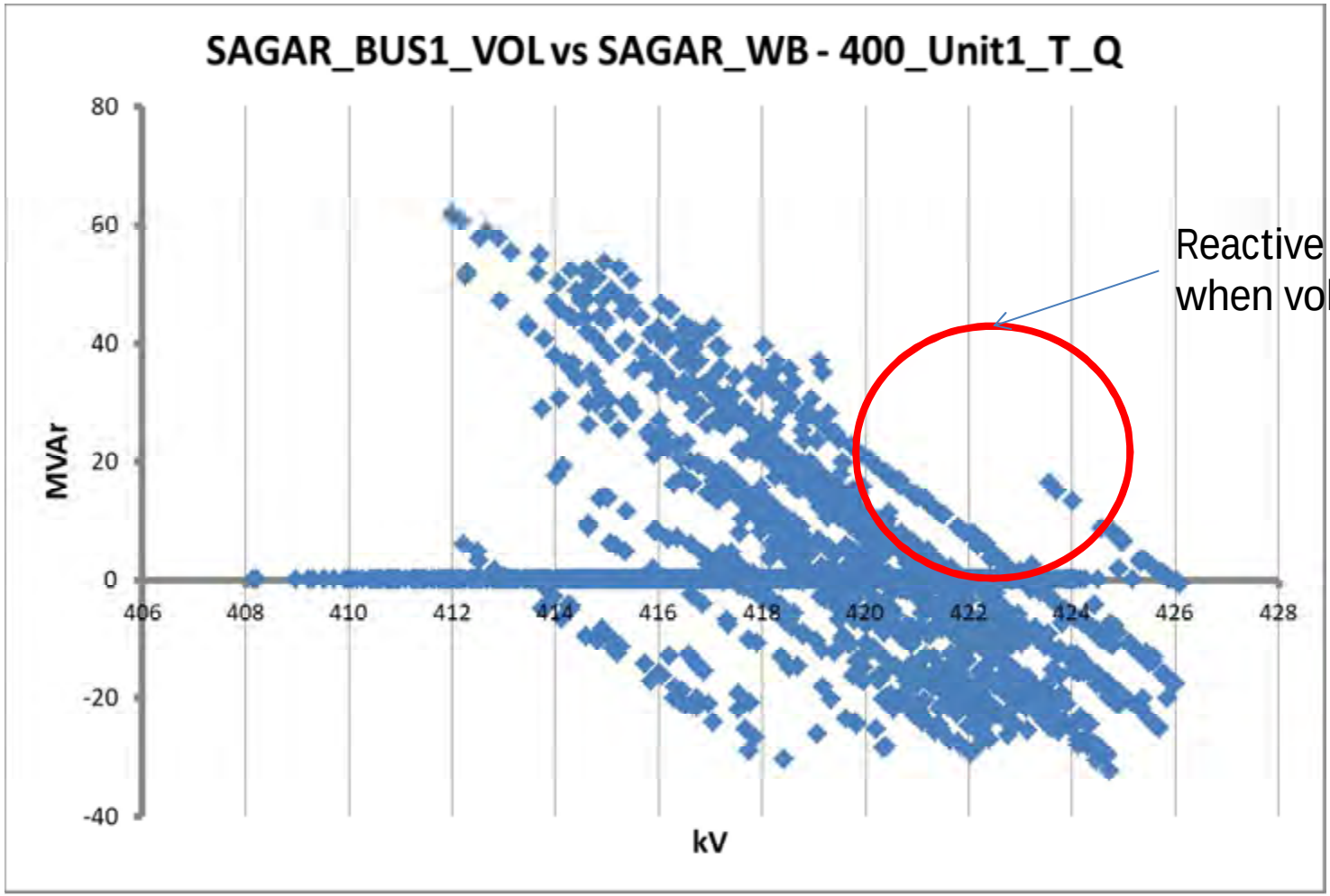


No MVAr absorption. As per reactive power capability test of unit 5, maximum allowable MVAr absorption limit: 112 MVAr when output is 471 MW

Reactive power capability curve of Sagardighi 300 MW units

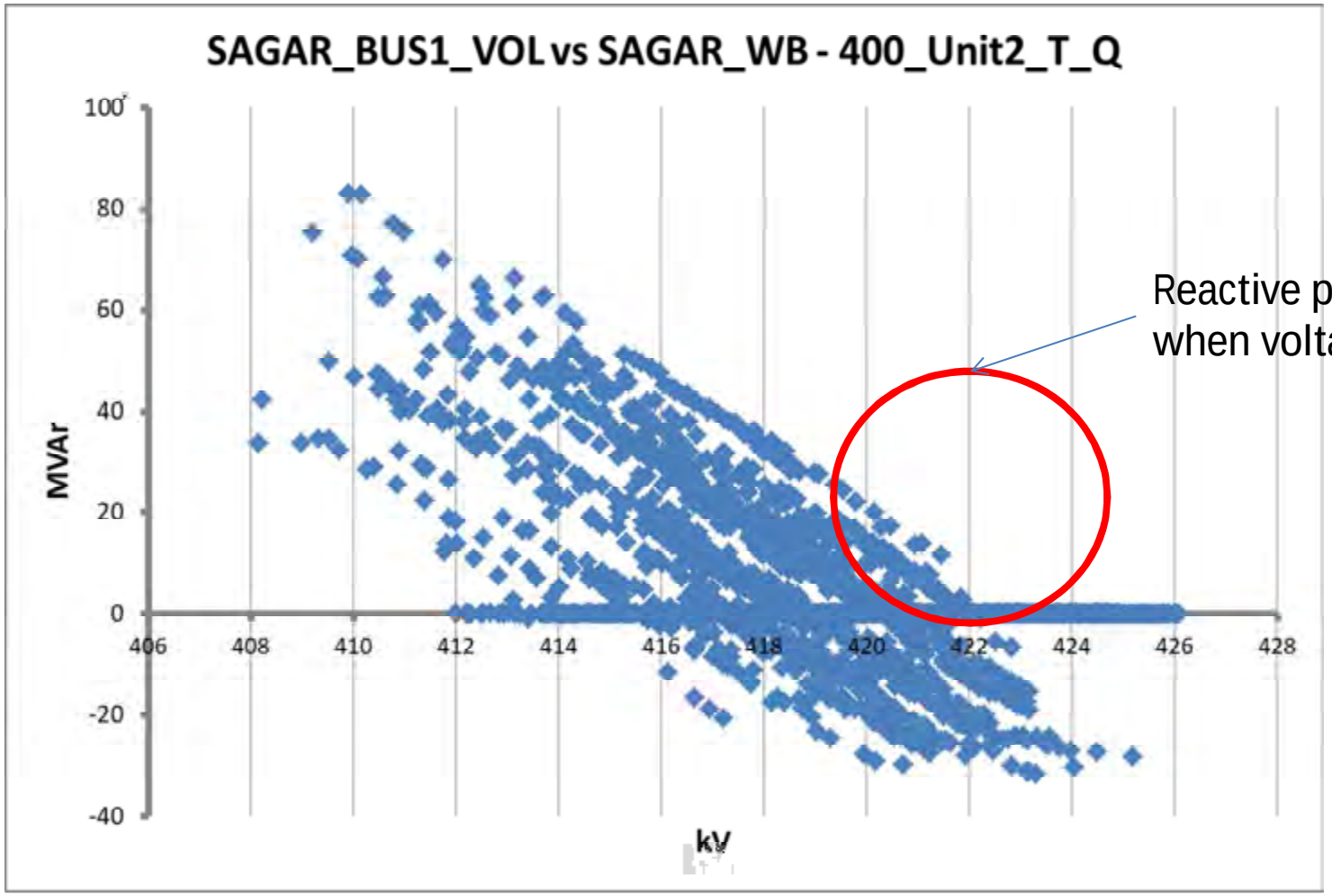


It can absorb more than 90MVAR when output is 300 MW (p.f. at 90 MVAR absorption is almost 0.96 lead)



Reactive power injection when voltage >420 kV

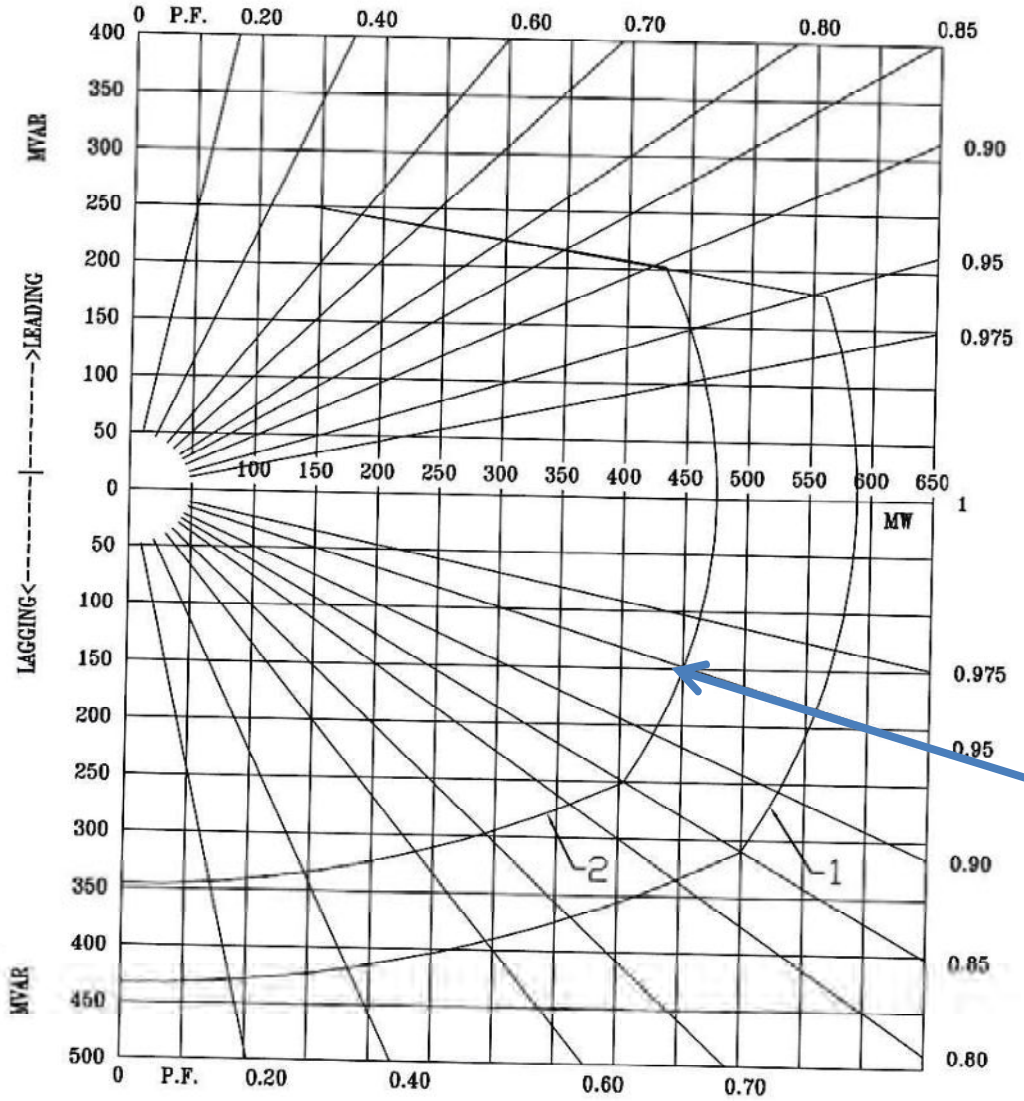
Maximum MVAr absorption is 30 MVAr



Reactive power injection when voltage >420 kV

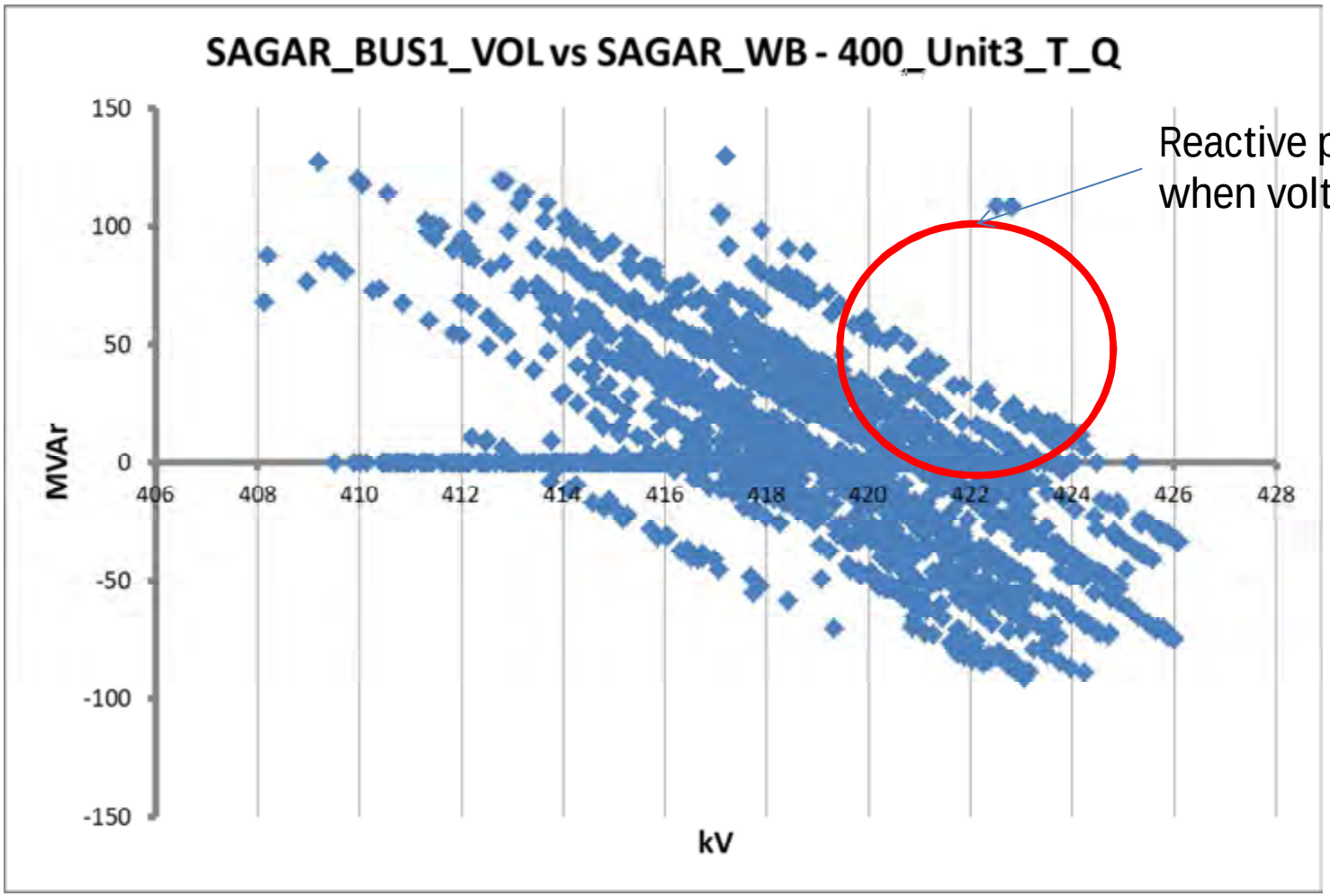
Maximum MVAr absorption is 30 MVAr

Reactive power capability curve of Sagardighi 500 MW unit



It can absorb more than 150 MVAR when output is 450 MW

(p.f. at 150 MVAR absorption is almost 0.95 lead)



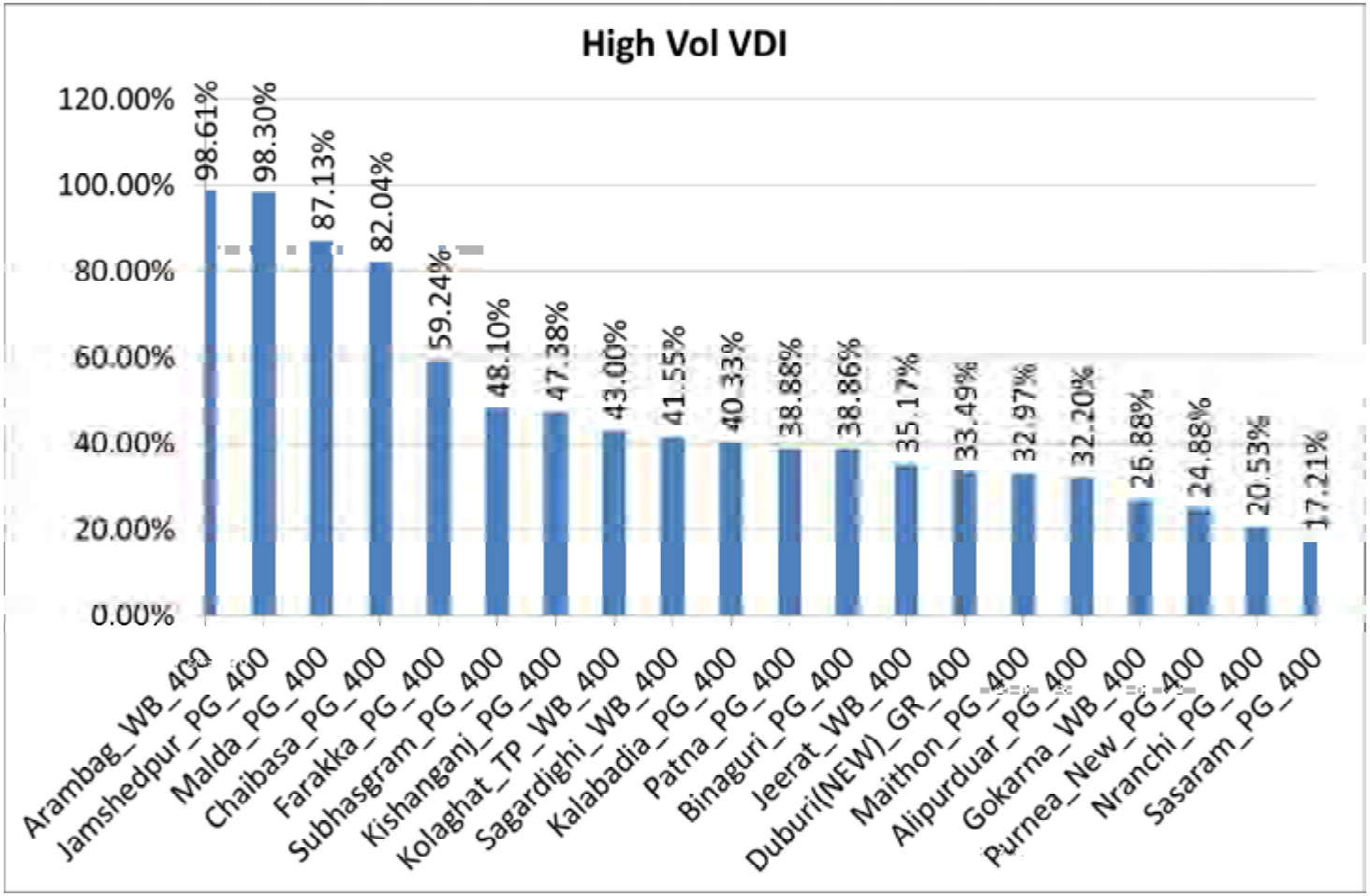
Reactive power injection when voltage >420 kV

Maximum MVAr absorption is 90 MVAr

Conclusion

- Non adequate reactive power absorption by ER generating units resulted high voltage condition in ER grid network.
  - Voltage rise may be worsened in winter due to reduction in system demand
- There are more than 15 nos 400/220 kV S/S, where voltage was more than 420 kV for more than 30 % of duration in the month of November, 2017

% of time voltage more than IEGC limit



Annexure-B2

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-B3

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.

****

Station name

Organisation

Annex-I (1 of 2)

Unit wise yearly generation Program for the year 2018-19

1. Contact Details

Sr. no	Name	Designation	email	Phone no.	Fax. no.
1					
2					

2. Units existing on 31.03.2017

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

3. Units Commissioned during 2017-18

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

4. Units likely to be commisioned during 2018-19

Unit No.	Capacity (MW)	Expected date of commissioning	Expected Generation 2018-19 (MU)	Remarks

Note: Please furnish the month-wise break-up of yearly generation in a separate Sheet keeping the similar format.

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

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

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

6. PPA details

Capacity (MW)	With DISCOM			With State Trading Cos.				With PTC / other trading cos.				Untied (MW)
	State of Discom	Quantum (MW)	Duration (Yrs)	Quantum (MW)	b/b PPA with Discom (name of Discom)	quantum of b/b PPA in MW	Duration of b/b PPA (Years)	Quantum (MW)	b/b PPA with Discom (name of Discom)	quantum of b/b PPA in MW	Duration of b/b PPA (Years)	

7(a)Coal Linkage for coal based plants

Unit No	Domestic linkage (MT)	Source	PLF from this coal linkage during the year (%)

7(b)Gas availibility for gas based stations

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

8. Cost of Generation:

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

Planned maintenance Schedules including R&M activities

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

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

B) Annual Overhaul/ Boiler overhaul

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

C) Capital Overhaul

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

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

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

Annexure-B6.A

Generation Target 2018-19

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

Annexure-B9

Bihar

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

Jharkhand

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

DVC

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

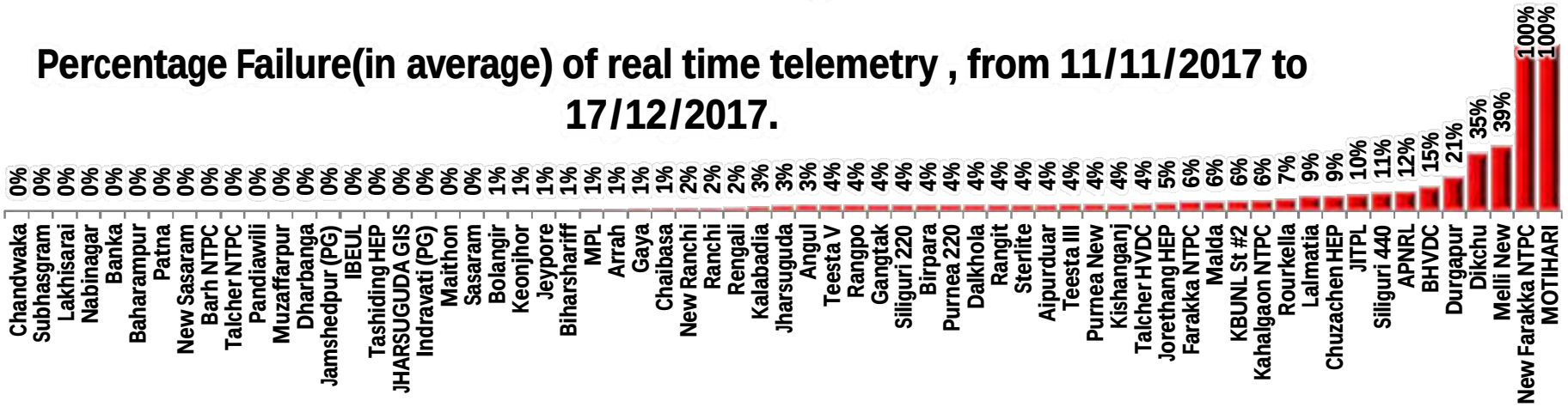
Odisha

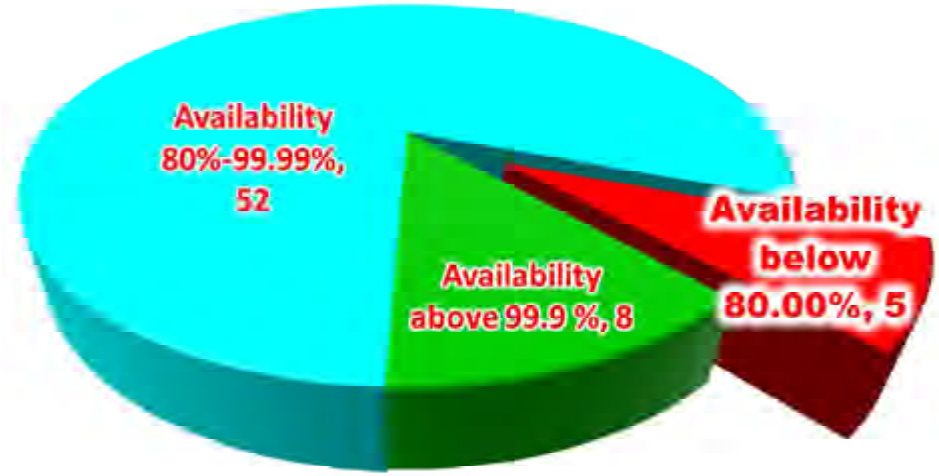
Priority	Feeders/ICTs	Point of Disconnection
1	220 kV Rengali(PG)-Rengali(OPTCL)	220 kV Rengali-PG
2	220/132 kV Baripada 160 MVA ICT	220 kV Baripada-PG
3	220 kV Baripada(PG)-Balsore (Odisha)	220 kV Baripada-PG

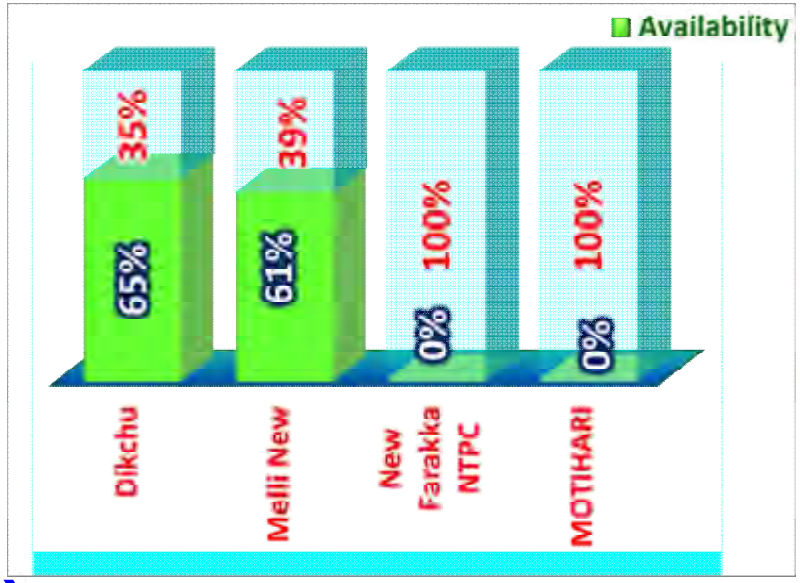
West Bengal

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

Overview of real time telemetry of Eastern region for month December, 2017







Major Concern:

Farakka St #3 SAS data (for 2 months)

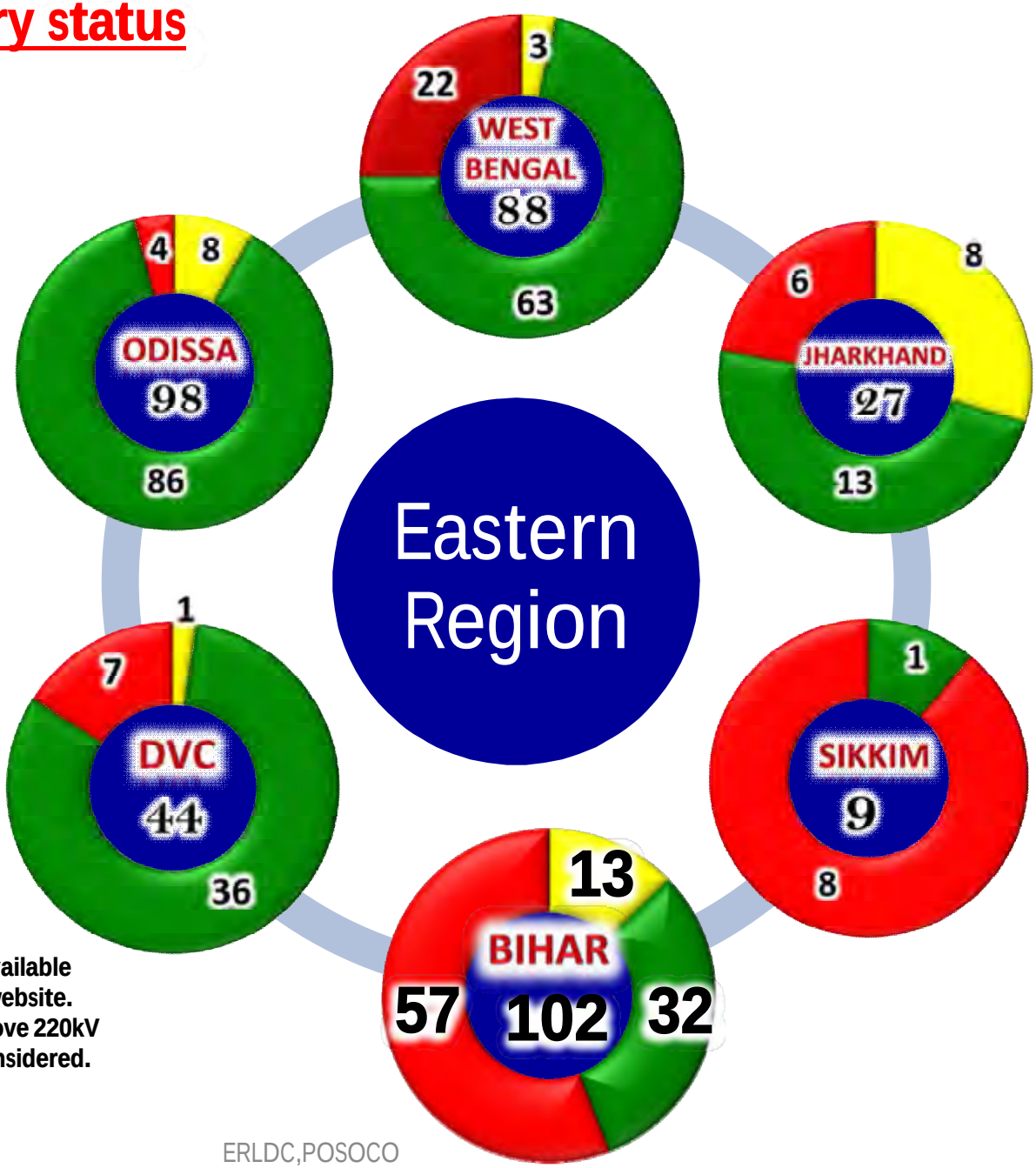
Motihari data.

State sector telemetry status as on 17-12-2017

Reporting persistently

Not reporting

Intermittent



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. All station above 220kV and important station at 132 kV level are considered.

BIHAR

List of station having availability higher than 90%

Begusarai(220kV)	Biharsharif(220kV)	BODH GAYA(220kV)	Darbhanga(220kV)	KHAGAUL(220kV)	Madhepura(220kV)
Pusauli(220kV)	Sipara(220kV)	BANJARI(132kV)	BARH(132kV)	BARIPAHARI(132kV)	BIHTA(132kV)
Chandauti(132kV)	Chhapra(132kV)	DIGHA(132kV)	Hajipur Old(132kV)	Jagdishpur(132kV)	Jai Nagar(132kV)
Jakkanpur(132kV)	Karpi(132kV)	Khagaria(132kV)	Kishanganj(132kV)	Kundra(132kV)	LAKHISARAI(132kV)
Mohania(132kV)	Raxaul (132kV)	Runisaidpur(132kV)	Samastipur(132kV)	Sasaram(132kV)	Shitalpur(132kV)
Sonenagar(132kV)	Wazirganj(132kV)				

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

Hajipur(220kV)	Samastipur new(220kV)	DHAKA(132kV)	Gaighat(132kV)	Jamui(132kV)	KARBIGAHIA(132kV)
Karmnasa(132kV)	Mithapur(132kV)	Motihari(132kV)	Pandaul(132kV)	Sabour(132kV)	Sherghati(132kV)
Vaishali(132kV)					

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

DEHRI(220kV)	Fatuha(220kV)	GOPALGANJ(220kV)	Kishanganj new(220kV)	sonenagar new(220kV)	Uda Kishanganj(220kV)
Arrah(132kV)	Aurangabad(132kV)	Banka(132kV)	Belaganj(132kV)	BETIAH(132kV)	BIKRAMGANJ(132kV)
BUXAR(132kV)	Dalsinghsarai(132kV)	Dhandaha(132kV)	Dumraon(132kV)	Ekangarsarai(132kV)	Ekma(132kV)
Forbisganj(132kV)	Gangwara(132kV)	GOH(132kV)	Harnaut(132kV)	Hathidah(132kV)	HULASGANJ(132kV)
Imamgunj(132kV)	Jahanabad(132kV)	Jamalpur(132kV)	Jandaha(132kV)	Kahalgaon(132kV)	Katihar(132kV)
Katra(132kV)	Kochas (Dinara)(132kV)	Koshi(132kV)	Kusheswar Asthan (132kV)	Madhubani(132kV)	MASAURHI(132kV)
MASRAKH(132kV)	Muzaffarpur (Ramdayalu)(132kV)	Nalanda(132kV)	Naugachhia(132kV)	Nawada(132kV)	Phulparas (132kV)
Purnea(132kV)	RAFIGANJ(132kV)	Rajgir(132kV)	Ramnagar(132kV)	SAHARSA(132kV)	Shekhpura(132kV)
Sitamarhi(132kV)	Siwan(132kV)	SKMCH(132kV)	Sonebarsa(132kV)	Sultanganj(132kV)	Supaul(132kV)
TEHTA(132kV)	Tekari(132kV)	Valmikinagar(132kV)			

JHARKHAND

List of station having availability higher than 90%

Chandil(220kV)	Patratu(220kV)	Ramchandrapur(220kV)	Tenughat(220kV)	Dumka(132kV)	Golmuri(132kV)
Hatia-I(132kV)	Jadugoda(132kV)	Japla(132kV)	Kanke(132kV)	Lalmatia(132kV)	Latehar(132kV)
Manique(132kV)					

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

Adityapur(132kV)	Chakradharpur(132kV)	Daltonganj(132kV)	Kamdara(132kV)	Namkum(132kV)	Noamundi(132kV)
Pakur(132kV)	Sahebganj(132kV)				

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

Hatia-II(220kV)	Deoghar(132kV)	Garawah(132kV)	Goilkera(132kV)	Jamtara(132kV)	Rajkharsawan(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)	PATRATU(220kV)	RAMGARH(220kV)
WARIA TPS(220kV)	BAIDA(132kV)	BARDWAN(132kV)	BELMURI(132kV)	CHANDIL(132kV)	GOLA(132kV)
HAZARIBAG(132kV)	JAMURIA(132kV)	KALIPAHARI(132kV)	KODARMA(132kV)	MAITHON HPS(132kV)	NORTH KARANPURA(132kV)
PANCHET HPS(132kV)	PARULIA(132kV)	PATHERDIH(132kV)	PURULIA(132kV)	PUTKI(132kV)	RAMGARH(132kV)

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

KUMARDHUBI(132kV)

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

MOSABANI(220kV)	ASP(132kV)	BARJORA(132kV)	GIRIDHI(132kV)	KHARAGPUR(132kV)	NIMIAGHAT(132kV)
RAMKANAL(132kV)					

WEST BENGAL

List of station having availability higher than 90%

Arambag(400kV)	Domjur(220kV)	Gokarna 400kv(400kV)	Haldia TPP(400kV)	Howrah(220kV)	Jeerat(400kV)
Kasba(220kV)	KTPS(400kV)	Lakshmikantapur(220kV)	Midnapur(220kV)	PPSP(400kV)	Satgachia(220kV)
Subhasgram(220kV)	Durgapur(400kV)	Bakreswar(400kV)	Kharagpur(400kV)	Sagardighi(400kV)	CHANDITALA(400kV)
Asansol(220kV)	DPL(220kV)	Durgapur(220kV)	Gokarna(220kV)	Rishra(220kV)	STPS(220kV)
NJP(220kV)	Bishnupur(132kV)	BTPS(132kV)	Haldia Old(132kV)	Liluah(132kV)	Saltlake(132kV)
Titagarh(132kV)	NBU(132kV)	Tcf-2(132kV)	Ashoknagar(132kV)	Adisaptagram(132kV)	New Bishnupur(220kV)
Borjora(132kV)	Bighati(132kV)	Kursiang(132kV)	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%

Maldah(132kV)	NPPSP(400kV)	TLDP3(220kV)

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

Haldia New(220kV)	Dalkhola(220kV)	Krishnanagar(220kV)	KLC Bantala(220kV)	Barasat(132kV)	Bongaon(132kV)
Kolaghat(132kV)	Rammam(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)	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)	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)	Kesinga(132kV)	Aska(132kV)	Bhubaneswar (132kV)	Khurda(132kV)	Puri(132kV)
Cuttack(132kV)	Choudwar(132kV)	ICCL(132kV)	Chainpal(132kV)	Rairangpur(132kV)	Dhenkanal(132kV)
Baripada(132kV)	Jajpur Road(132kV)	Angul(132kV)	Boinda(132kV)	Kendrapara(132kV)	Kamakhyanagar(132kV)
Rourkela(132kV)	Burla HPS(132kV)	Chiplima HPS(132kV)	Sambalpur(132kV)	Rajgangapur(132kV)	Bargarh(132kV)
ARYAN(132kV)	NBVL(132kV)	EMAMI(132kV)	AISCL(132kV)	IMFFA(132kV)	MINAKHEE(132kV)
OPCL(132kV)	OCLRJ(132kV)	OCL(132kV)	Bolangir Old(132kV)	Bolani(132kV)	Soro(132kV)
Sonepur(132kV)	Anandpur (132kV)	ACC, Bargarh(132kV)	Barpalli(132kV)	Digapahandi(132kV)	Jaleswar(132kV)
Chhend(132kV)	Karanjia(132kV)	Kesura(132kV)	Patnagarh(132kV)	Pattamundai(132kV)	Phulbani(132kV)
Sundargarh(132kV)	Kalarangi(132kV)				

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

Bidanasi(220kV)	Rengali swiching station(220kV)	VISA(220kV)	Chhatrapur(132kV)	Akhusinga(132kV)	Basta(132kV)
Balugaon(132kV)	VEDANTA(LANGIGARH)(132kV)				

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

Sijua(132kV)	SHYAM(132kV)	ARATI(132kV)	Parlakhemundi(132kV)

VOIP (Voice over Internet Protocol)

Complete Outage (< 10% avl)	Partial outage (10% to 90% avl)	Availability > 90 %

Sl No	Station Name	Monthly average	01-Dec	02-Dec	03-Dec	04-Dec	05-Dec	06-Dec	07-Dec	08-Dec	09-Dec	10-Dec	12-Dec	13-Dec	14-Dec	15-Dec	16-Dec	17-Dec
1	Jeypore	0.0%																
2	Daltonganj	0.0%																
3	Indrabati	0.0%																
4	Dalkhola	0.0%																
5	Ranchi 400	0.0%																
6	Bolangir	0.0%																
7	Purnia 220	0.4%																
8	Pandiavil	20.6%																
9	Teesta NHPC	49.7%																
10	Kisanganj	74.8%																
11	Biharsarif 400kv	77.9%																
12	MALDA	79.1%																
13	Kusai Colony	89.0%																
14	Jharsugura	91.1%																
15	Siliguri	92.4%																
16	Sikkim	92.7%																
17	Birpara	93.3%																
18	Gangtok	93.9%																
19	New Malli	93.9%																
20	Rangpoo	93.9%																

ERLDC,POSOCO

Concerns

1. VOIP for Jeypore, Indravati (PG) , Purnea 220, Dalkhola and Ranchi are out since long.
2. Malda highly intermittent.
3. VOIP of 6 no of stations is not working at this moment, which is quite alarming for real time system operator.

Due FO communication link issue at Farakka Malda OPGW , more than 18 nos of station was having no telemetry and Voice since 17:34 Hrs 06-12-17 to 09:48 Hrs 07-12-2017.

Standby provision of the above OPGW may be planned and implemented...

Note: Above statistics are based on result of 5 minutes interval ping response of VOIP (Voice Over Internet Protocol) handset.

Major concerns

- **Long outage of New Farakka SCADA data.**
- **Long outage of VOIP.**
- **VOIP for JITPL yet to be provided, Commissioning PLCC for data communication via 765 kV Angul Station.**
- **No redundancy** or stand by in communication channel
- **Non availability of Unit side data→**
  - **Farakka STPS (Unit #6).**
  - **Non availability of Unit side data is affecting the FRC and MVAr response calculation. We are again requesting concerned utility to make these real time data available to real time operator at the earliest.**

Annexure-19

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:

PMU Installation and commissioning status of ER as on 22.07.2017

Annexure-B26

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	Commissioning	Integration	SAT	Remarks
			78			296	175	74	75	66	65	61	62	42	58	
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	Integration is in progress, 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 will be deleted, verbal communication from PG.
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	N/A	N/A	N/A	N/A	N/A	N/A	Under Manufacturing. Will be dispatched in next month.
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 22.07.2017

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	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 (Chand	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	CT cable laying permission. I&C 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	pending	pending	pending	pending	Termination pending due to no permission for shutdwon
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	pending	pending	Pending	pending	Work under progress
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	BOQ submitted, yet to be approved. Substation will be deleted, verbal communication from PG.
76	ER-I	Jharkhand	Patratu	Jharkhand	CR	3	1	Yes	Yes	N/A	N/A	N/A	N/A	N/A	N/A	
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 22.07.2017

S.No	Region	State	Sub-Station	Owner/ Utility	S/S type	PMU	TOTAL PANEL QTY	PMU Delivery status	Cable Delivery status	Erection	Cable laying	CT/PT/DI termination	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	pending	done	done	pending	SAT due to no supervision & & interfacing pending which is to be done by NHPC/PG whenever shutdwon will be available as per PRM
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, verbal communication from PG.
50	Odisha	Orissa	Uttara	Powergrid	CR	2	1	**Yes**	**Yes**	**done**	**done**	**done**	**done**	**Pending**	**done**	**Communication link from s/s to ERLDC and NTAMC to be provided by PGCIL.**
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	1	0	0	0	0	0	0	0	0	0
	ER-I	**Total**	**20**	**109**	**19**	**109**	**17**	**104**	**16**	**98**	10	76
1	ER-II	Powergrid	12	41	11	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	0	0	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	6	17	6	17
	ER-II	**Total**	**34**	**105**	**33**	**106**	**31**	**99**	**28**	**88**	**21**	**69**
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**	**78**	**296**	**75**	**287**	**66**	**263**	**62**	**246**	**42**	**189**

Annexure – B.27

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- B.28

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.

Annexure-B35

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						

Governor response observed in ER generating units

On 12.11.17 at 07:14 Hrs, All lines from Talwandi Sabo tripped, Due to Loss of Evacuation path at Talwandi Sabo generation loss of 1097 Mw (As per NLDC Scada) occured.

Generation loss at Talwandi at 07:14 hrs on 12-11-17. Frequency changed to 49.90 Hz from 49.99 Hz

Name	Initial generation	Final generation	Change in generation	Ideal response **	% of Ideal response	Remarks
FSTPP #3	153.0	158.0	5.0	5.5	91%	Satisfactory
KhSTPP #2	179.2	184.2	5.0	6.5	77%	Satisfactory
KhSTPP #1	149.2	153.0	3.8	5.4	71%	Satisfactory
Barh Unit-4	505.6	515.2	9.6	18.2	52%	Below Satisfactory
FSTPP #4	377.8	384.6	6.8	13.6	50%	Below Satisfactory
FSTPP #2	152.4	153.6	1.2	5.5	22%	Unsatisfactory
MPL #2*	510.5	513.9	3.4	18.4	19%	Unsatisfactory
FSTPP #1	146.3	147.0	0.7	5.3	14%	Unsatisfactory
JITPL #1	436.0	435.0	-1.0	15.7	-6%	Unsatisfactory
FSTPP #5	299.9	298.7	-1.2	10.8	-11%	Unsatisfactory

* As per data provided by MPL

Annexure-B36

Generation Projection (Jan 2018 - Mar 2018)

				Generation declared Commercial from 1st Apr '17 to 30th Sep'17					Generation declared/expected to be declared Commercial from 1st Oct'17 to 31st Dec'17								
Sl. No.	Entities	Region	Projections based on 3 Years Data	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	Bus Name	Unit No.	Installed Capacity	Gen. considered	Sub Total	TOTAL	Comments From DICs /Others (if any)	Figure as per Comments/ PoC Data	Projected Generation before normalization w.r.t projected All India Peak Demand
			(MW)			(MW)	(MW)	(MW)			(MW)	(MW)	(MW)	(MW)			(MW)
1	West Bengal	ER	5065											5065			5065
2	Odisha	ER	2884											2884	As per data given by GRIDCO	3144	3144
3	Bihar	ER	153											153			153
4	Jharkhand	ER	444											444			444
5	Sikkim	ER	0											0			0
6	Chujachan	ER	94											94	As per data given by Chuzachen	110	110
7	DVC	ER	3975											3975	As per data given by DVC	4087	4087
	Durgapur Steel	ER															
	Koderma TPP	ER															
	Bokaro TPS	ER															
	Raghunathpur	ER															
8	MPL	ER	1022											1022	As per last quarter	990	990
9	Teesta V	ER	541											541	As per NHPC	510	510
10	Kahalgaon	ER	2196											2196	As per NTPC	2178	2178
11	Farakka	ER	1928											1928	As per NTPC	1968	1968
12	Talcher	ER	976											976			976
13	Rangit	ER	64											64	As per NHPC	60	60
14	Adhunik Power	ER	506											506			506
15	Barh	ER	1274											1274	As per NTPC	1057	1057
16	Kamalanga TPP (GMR)	ER	678											678			678
17	JITPL	ER	839											839			839
18	Jorethang	ER	63											63			63
19	Bhutan	ER	327											327			327

Generation Projection (Jan 2018 - Mar 2018)

				Generation declared Commercial from 1st Apr '17 to 30th Sep'17					Generation declared/expected to be declared Commercial from 1st Oct'17 to 31st Dec'17								
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	**Teesta-III**	**ER**		Teesta-III	1	200	158	950						950			950
		ER		Teesta-III	2	200	158										
		ER		Teesta-III	3	200	158										
		ER		Teesta-III	4	200	158										
		ER		Teesta-III	5	200	158										
		ER		Teesta-III	6	200	158										
21	**Dikchu HEP**	**ER**							Dikchu	1	48	38	76	76			76
		ER							Dikchu	2	48	38					
22	**Nabinagar BRBCL**	**ER**		Nabinagar BRBCL	1	230	151	151	Nabinagar BRBCL	2	230	151	151	301			301
	TOTAL		**23028**					**1101**					**227**	**24356**			**24483**

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) 0.80 plf for hydro generators
(ii) 0.7 plf for thermal generators.
(iii) 0.3 plf for gas stations

DEMAND FORECASTUSING PAST3 YEARS DATA (Jan 2018 - Mar 2018)

	2014-15			2015-16			2016-17			1	2	3	4		
	Jan-15	Feb-15	Mar-15	Jan-16	Feb-16	Mar-16	Jan-17	Feb-17	Mar-17	2014-15 Average	2015-16 Average	2016-17 Average	Projected Demand for (Jan 2018 - Mar 2018) before normalization	Data given by DICs	Comments
Bihar	2,602	2,830	2,874	3,484	3,278	3,419	3,535	3,543	3,715	2,769	3,394	3,598	4,082		
DVC	2,467	2,320	2,393	2,421	2,381	2,473	2,457	2,570	2,663	2,393	2,425	2,563	2,631	2960	As per data given by DVC
Jharkhand	1,018	1,016	1,007	1,117	1,102	1,153	1,121	1,165	1,148	1,014	1,124	1,145	1,225		
Odisha	3,364	3,525	3,892	3,739	3,931	4,091	3,896	3,847	3,989	3,594	3,920	3,911	4,125	4002	As per data given by GRIDCO
West Bengal	6,317	6,721	7,332	6,240	6,858	7,443	6,078	7,036	7,840	6,790	6,847	6,985	7,069		
Sikkim	83	83	77	109	109	109	91	91	91	81	109	91	104		

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 2017-2018 (Q4) i.e January 2018 to March 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-03.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-02.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2017/psp_peak-01.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-01.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-02.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2016/psp_peak-03.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-03.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-02.pdf
http://www.cea.nic.in/reports/monthly/powersupply/2015/psp_peak-01.pdf

Annexure-C.1

Anticipated Power Supply Position for the month of
Jan-18

SL.NO		PARTICULARS	PEAK DEMAND MW	ENERGY MU
1		**BIHAR**		
	i)	NET MAX DEMAND	4000	2200
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	545	162
		- Central Sector	2693	1574
	iii)	SURPLUS(+)/DEFICIT(-)	-762	-464
2		**JHARKHAND**		
	i)	NET MAX DEMAND	1250	800
	ii)	NET POWER AVAILABILITY- Own Source (including bilateral)	430	269
		- Central Sector	700	297
	iii)	SURPLUS(+)/DEFICIT(-)	-120	-234
3		**DVC**		
	i)	NET MAX DEMAND (OWN)	2770	1717
	ii)	NET POWER AVAILABILITY- Own Source	4772	2664
		- Central Sector	300	309
		Long term Bi-lateral (Export)	1300	967
	iii)	SURPLUS(+)/DEFICIT(-)	1002	289
4		**ORISSA**		
	i)	NET MAX DEMAND	3900	2418
	ii)	NET POWER AVAILABILITY- Own Source	2994	1741
		- Central Sector	1094	681
	iii)	SURPLUS(+)/DEFICIT(-)	188	4
5		**WEST BENGAL**		
5.1		**WBSEDCL**		
	i)	NET MAX DEMAND (OWN)	5000	2912
	ii)	CESC's DRAWAL	0	0
	iii)	TOTAL WBSEDCL's DEMAND	5000	2912
	iv)	NET POWER AVAILABILITY- Own Source	3200	1977
		- Import from DPL	-10	0
		- Central Sector	1800	1089
	v)	SURPLUS(+)/DEFICIT(-)	-10	153
	vi)	EXPORT (TO B'DESH & SIKKIM)	5	4
5.2		**DPL**		
	i)	NET MAX DEMAND	240	179
	ii)	NET POWER AVAILABILITY	230	184
	iii)	SURPLUS(+)/DEFICIT(-)	-10	5
5.3		**CESC**		
	i)	NET MAX DEMAND	1420	690
	ii)	NET POWER AVAILABILITY - OWN SOURCE	700	443
		FROM HEL	270	255
		FROM CPL/PCBL	40	0
		Import Requirement	410	30
	iii)	TOTAL AVAILABILITY	1420	728
	iv)	SURPLUS(+)/DEFICIT(-)	0	38
6		**WEST BENGAL (WBSEDCL+DPL+CESC)** **(excluding DVC's supply to WBSEDCL's command area)**		
	i)	NET MAX DEMAND	6660	3781
	ii)	NET POWER AVAILABILITY- Own Source	4130	2604
		- Central Sector+Others	2520	1344
	iii)	SURPLUS(+)/DEFICIT(-)	-10	166
7		**SIKKIM**		
	i)	NET MAX DEMAND	90	38
	ii)	NET POWER AVAILABILITY- Own Source	3	2
		- Central Sector+Others	81	50
	iii)	SURPLUS(+)/DEFICIT(-)	-6	14
8		**EASTERN REGION** **At 1.03 AS DIVERSITY FACTOR**		
	i)	**NET MAX DEMAND**	18126	10954
		Long term Bi-lateral by DVC	1300	967
		EXPORT BY WBSEDCL	5	4
	ii)	**NET TOTAL POWER AVAILABILITY OF ER (INCLUDING C/S ALLOCATION)**	20262	11696
	iii)	**PEAK SURPLUS(+)/DEFICIT(-) OF ER (ii)-(i)**	831	-229

Annexure- C.2

Proposed Maintenance Schedule of Thermal Generating Units of ER during January, 2018

(as finalised in LGBR meeting)

System	Station	Unit	Size (MW)	Period		No. of Days	Reason
				From	To		
DVC	CTPS	8	250	17.01.18	26.02.18	41	COH, Shutdown may be deferred by 7 days
ODISHA	TTPS	1	60	29.12.17	13.01.18	15	Capital Maintenance
WBPDCL	Bakreswar	1	210	18.01.18	13.02.18	25	TG+TPR+(EHG+DAVR) Upgradation+GT O
CESC	TITAGAR	2	60	18.01.18	01.02.18	15	Not Specified
	SOUTHER	1	67.5	01.01.18	15.01.18	15	Not Specified
HEL	HALDIA	1	300	15.01.17	26.01.17	11	Not Specified
DPL	DPPS	8	250	Jan 18	Jan-18	15	Boiler License Renewal

* MPL unit 1 synchronised on 12th December 2017 but taken out due to vibration issues, the unit will be synchronised on 25th December 2017

EASTERN REGIONAL LOAD DESPATCH CENTRE
KOLKATA

TRANSMISSION ELEMENTS OUTAGE APPROVED IN 140TH 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	315MVA ICT-II Keonjhar	16/12/17	09:00	15/01/18	18:00	ODB	Keonjhar	For MAKING FIREWALL OF 125MVAR Bus reactor	
2	400kV MTN Ranchi line	20/12/17	09:00	30/12/17	17:00	ODB	ER-II	Line Bay AMP work	
3	400KV MAITHON-MEJIA3	22/12/17	09:00	22/12/17	17:00	ODB	ER-II	Line AMP work	DVC
4	Auto-reclose of 400kv Quad, New Siliguri-Kishanganj -Ckt-1 line of Powerlinks.	22/12/17	10:00	22/12/17	17:00	OCB	POWERLINK	For Online PID testing of 120 KN Porcelain insulators for New Siliguri-Kishanganj line under Siliguri Kishanganj Section.	
5	400KV MEJIA-JAMSHEDPUR	24/12/17	09:00	24/12/17	17:00	ODB	ER-II	Line AMP work	DVC
6	400KV Rourkela-Raigarh Ckt-2	**25/12/17**	**08:00**	**26/12/17**	**18:00**	**OCB**	ER-II/Odisha/Sundergarh	**1. Disconnect of jumper at Loc. No. 881 of 400KV Rourkla-Raigarh ckt-2 and conncetion of jumper at 400KV sundergarh-Rourkela ckt-3 and 400KV Sundergarh-Raigarh Ckt-3.** **2. Shifting of PLCC panel from Rourkela to Raigarh Sub-station & commissioning of PLCC from Sundargarh to Rourkela and Sundargarh to Raigarh end.** **3. Changing relay setting and testing of Relay**	NLDC
7	400KV TEESTA-V-RANGPO-II	26/12/17	09:00	31/12/17	18:00	ODB	TEESTA-V	AMP WORK	
8	400KV Berhampore Sagardighi Ckt-I Main Bay (407 Bay) AT BERHAMPUR	27/12/17	08:00	27/12/17	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
9	400KV MAITHON-MEJIA 1	27/12/17	09:00	27/12/17	17:00	ODB	ER-II	Line AMP work	DVC
10	400KV Rourkela-Raigarh Ckt-4	**27/12/17**	**08:00**	**29/12/17**	**18:00**	**OCB**	ER-II/Odisha/Sundergarh	**1. Disconnect of jumper at Loc. No. 267 of 400KV Rourkla-Raigarh ckt-4 and conncetion of jumper at 400KV sundergarh-Rourkela ckt-4 and 400KV Sundergarh-Raigarh Ckt-4.** **2. Shifting of PLCC panel from Rourkela to Raigarh Sub-station & commissioning of PLCC from Sundargarh to Rourkela and Sundargarh to Raigarh end.** **3. Changing relay setting and testing of Relay**	NLDC
11	400KV Berhampore Sagardighi Ckt-I Tie Bay (408 Bay) AT BERHAMPUR	28/12/17	08:00	28/12/17	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
12	400KV Berhampore Farakka Tie Bay (405) AT BERHAMPUR	29/12/17	08:00	29/12/17	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
13	400KV MAITHON-MEJIA 2	29/12/17	09:00	29/12/17	17:00	ODB	ER-II	Line AMP work	DVC
14	40752 BAY AT BINAGURI SS	01/01/18	09:00	01/01/18	17:00	ODB	ER-II	BHEL CB Hydraulic perating mechanism overhauling	
15	411 bay(Farakka-1 & Sagardighi-2 Tie) AT DURGAPUR	01/01/18	09:00	11/01/18	17:00	OCB	ER-II	Replace of old BHEL by new CGL CB	
16	400 KV ALIPURDUAR-BONGAIGAON-I	01/01/18	10:00	01/01/18	18:00	ODB	ER-II	A/R CHECKING	NLDC
17	220 KV BIRPARA-CHUKHA-D/C	01/01/18	10:00	09/01/18	18:00	OCB	ER-II	TOWER SHIFTING WORK as referred in agenda points of 139th OCC.	NLDC
18	132 kV 101 BAY (Jaleswar Line main Bay) at Baripada	01/01/18	09:00	01/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	
19	132 KV PURNEA - PURNEA BSPTCL#2 LINE	02/01/18	09:00	16/01/18	16:00	OCB	POWERGRID ER-I	GIS WORK (Load will be catered through 132 kV feeder BSPTCL- 3 & KISHANGANJ to BSPTCL/Purnea through 02 No. 160 MVA ICT for next 4 days.)	BIHAR
20	400KV BUS-1 at Muzaffarpur	02/01/18	09:00	03/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	
21	50 MVAR BR1 & 125 MVAR BR-3 at Jamshedpur	02/01/18	09:30	02/01/18	17:30	ODB	POWERGRID ER-I	CSD TESTING (Balance Construction activity)	SUBJECT TO SYSTEM CONDITION
22	400 kV PTN-BRH CKT – I	02/01/18	08:00	02/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	
23	Main bay 765KV B/R-1 (bay 710) at New Ranchi	02/01/18	08:00	02/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
24	765 B/R-1 at New Ranchi	02/01/18	08:00	02/01/18	18:00	ODB	POWERGRID ER-I	STATCOM CONSTRUCTION(TOWER ERECTION)	NLDC
25	400 KV Main bay of 400/220kv ICT -I at Ranchi	02/01/18	10:00	02/01/18	17:00	ODB	POWERGRID ER-I	AMP	
26	63 MVAR Allahabad Line Reactor@ Pusauli	02/01/18	09:00	16/01/18	18:00	OCB	POWERGRID ER-I	For Reactor and Breaker Overhauling Work	NLDC
27	765kV Gaya-Balia line	02/01/18	09:00	02/01/18	17:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	NLDC
28	100 MVAR Bus Reactor at Jeerat	02/01/18	08:00	02/01/18	17:30	ODB	ER-II	AMP of reactor and bay equipments	WB
29	400KV Berhampore Jeerat Main Bay (403 Bay) AT BERHAMPUR	02/01/18	08:00	02/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
30	401 KV ALIPURDUAR-BONGAIGAON-II	02/01/18	10:00	02/01/18	18:00	ODB	ER-II	A/R CHECKING	NLDC
31	SgTPP: 315MVA ICT	02/01/18	07:00	07/01/18	16:00	OCB	WB	Oil filtration	WB
32	400kV Bus Reactor-3 Main Bay (404) at Angul	02/01/18	10:00	02/01/18	16:00	ODB	ER-II/Odisha/Angul S/S	AMP Work.	
33	400kv Rourkela-Raigarh Fdr -II (Direct)	02/01/18	08:00	21/01/18	17:00	OCB	ER-II/Odisha/Sundergarh TLM	For Diversion/ modification of 220kv Budhipadhar -Korba S/C from Loc 29 to 39 and 400Kv D/C Rourkela-Raigarh line II (direct) and 400kv Sundargarh-Raigarh-fdr-II from Location no. 385 to 375 through multi ckt. due to construction of dedicated MGR (Rail Line) on behalf of M/s. OPGC. Dismantling of Loc No. 375, 366, 367 and Erection of new tower (M/C - 2, 375, 366 & 367) & stringing work.	NLDC
34	400kv Sundargarh-Raigarh-Fdr-II	02/01/18	08:00	21/01/18	17:00	OCB	ER-II/Odisha/Sundergarh TLM	For Diversion/ modification of 220kv Budhipadhar -Korba S/C from Loc 29 to 39 and 400Kv D/C Rourkela-Raigarh line II (direct) and 400kv Sundargarh-Raigarh-fdr-II from Location no. 385 to 375 through multi ckt. due to construction of dedicated MGR (Rail Line) on behalf of M/s. OPGC. Dismantling of Loc No. 375, 366, 367 and Erection of new tower (M/C - 2, 375, 366 & 367) & stringing work.	NLDC
35	400KV BUS-I at Rourkela	02/01/18	09:00	02/01/18	17:00	ODB	ER-II/Odisha/Rourkela S/S	Jumpering of of 41289A (STATCOM Future Bay Bus Isolator) and Stability Test of Tie Bay CT (411CT) Connected with 400KV Bus-I.	
36	132 kV 103 BAY (BhograiLine main Bay) at Baripada	02/01/18	09;00	02/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	
37	220kV Rangpo-New Melli Ckt-1	02/01/18	08:00	21/01/18	17:30	OCB	ER-II	Tower Replacement work for Loc No.-01 of 220kV D/C Rangpo-New Melli TL	
38	220kV Rangpo-New Melli Ckt-2	02/01/18	08:00	21/01/18	17:30	OCB	ER-II	Tower Replacement work for Loc No.-01 of 220kV D/C Rangpo-New Melli TL	
39	132kV Rangpo-Gangtok TL	02/01/18	08:00	02/01/18	14:00	ODB	ER-II	For Jumpering work at Loc 100(LILO Portion) in order to continue the line as 132kV Gangtok-Rangit TL	SIKKIM
40	132kV Rangpo-Rangit TL	02/01/18	08:00	02/01/18	14:00	ODB	ER-II	For Jumpering work at Loc 100(LILO Portion) in order to continue the line as 132kV Gangtok-Rangit TL	
41	400 kV Tie Bay of 400 kV KHG-1 & 80 MVAR Bus Reactor at Lakhisarai	02/01/18	09:00	04/01/18	17:00	ODB	POWERGRID ER-I	Cable replacement of CB Spring Charging Motor.	
42	400 KV New Siliguri-Purnea Ckt 1	02/01/18	09:00	04/01/18	17:00	ODB	ER-II	Insulator repalacement	
43	125 MVAR BR-2 at Jamshedpur	03/01/18	09:30	03/01/18	17:30	ODB	POWERGRID ER-I	CSD TESTING (Balance Construction activity)	SUBJECT TO SYSTEM CONDITION
44	400/220kv 315 MVA ICT-1 at BSF	03/01/18	09:00	04/01/18	18:00	OCB	POWERGRID ER-I	for replacement of PRD	BIHAR

45	400 kV PTN-BRH CKT – II	03/01/18	08:00	03/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	
46	220 KV ICT-II bay at Patna	03/01/18	09:00	03/01/18	18:00	ODB	POWERGRID ER-I	AMP	
47	400 KV BUS -I at New Ranchi	03/01/18	08:00	05/01/18	18:00	ODB	POWERGRID ER-I	STATCOM CONSTRUCTION WORK	
48	400 KV Main bay of 400/22 0kvICT -II at Ranchi	03/01/18	10:00	03/01/18	17:00	ODB	POWERGRID ER-I	AMP	
49	3*110MVAR 765kV Bus Reactor Main Bay2Pusauli	03/01/18	09:00	03/01/18	18:00	OCB	POWERGRID ER-I	AMP work	NLDC
50	400KV Berhampore Sagardighi Ckt-II Main Bay (410 Bay) AT BERHAMPUR	03/01/18	08:00	03/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
51	315MVAR ICT-I AT DURGAPUR	03/01/18	09:00	03/01/18	17:00	ODB	ER-II	AMP of Equipment	DVC
52	500MVA, ICT-1 at Maithon SS	03/01/18	10:00	03/01/18	17:30	ODB	ER-II	Onload testing of CSD and validation of OFS	DVC
53	200 kV Malda -Dalkhola-I	03/01/18	08:00	03/01/18	17:00	ODB	ER-II	Insulator replacement	
54	402 KV ALIPURDUAR-BINAGURI-I	03/01/18	10:00	03/01/18	18:00	ODB	ER-II	A/R CHECKING	
55	DGP:400 KV,50 MVAR REACTOR	03/01/18	09:00	03/01/18	15:00	ODB	WB	MAINTENANCE WORK	
56	KGPR:315 MVA TR2	03/01/18	07:00	03/01/18	15:00	ODB	WB	MAINTENANCE WORK	
57	NEW CHANDITALA:400 KV MB1,B/C,KGPR#1	03/01/18	07:00	03/01/18	15:00	ODB	WB	MAINTENANCE WORK	
58	ABG:315 MVA TR4	03/01/18	06:00	03/01/18	15:00	ODB	WB	MAINTENANCE WORK	
59	400 KV Indravati-Jeypore line	03/01/18	08:00	03/01/18	18:00	ODB	ER-II/Odisha /Indravati	Fixing of BPI structures on BPI foundation	NLDC
60	765kV Bus Reactor-2 at Angul	03/01/18	10:00	03/01/18	16:00	ODB	Angul SS	For attending Oil Leakage by full gasket replacement in B-phase of Bus Reactor-2 under M/s. TBEA Punch points.	NLDC
61	400kV B/R-2 & Meramundali Line-1 Tie Bay (405) at Angul	03/01/18	10:00	03/01/18	16:00	ODB		AMP Work.	
62	400KV BUS-II at Rourkela	03/01/18	09:00	03/01/18	17:00	ODB	ER-II/Odisha/Rourkela S/S	Jumpering of of 41089B (STATCOM Main Bay Bus Isolator) and Stability Test of Main Bay CT (410CT) Connected with 400KV Bus-II.	
63	Bus Reactor TIE BAY CB(40708)	03/01/18	09:00	03/01/18	18:00	ODB	ER-II/Odisha/BOLANGIR S/S	AMP work for 40708 CB and 40708 CT	
64	400 kV Bus-II at Baripada	03/01/18	08:30	03/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-II)	
65	400 kV Bay 415 CB(GIS) at Baripada	03/01/18	08:30	12/01/18	17:30	OCB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-II ext. works	
66	500MVA ICT #3 at Baripada	03/01/18	09:30	03/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	PRD replacement & Insulation sleeves work on 52 kV buhsings	
67	400KV ICT-I Main Bay(406 Bay) at Keonjhar	03/01/18	09:00	03/01/18	18:00	ODB	ER-II/Odisha/Keonjhar S/S	AMP Activity	
68	400KV BUS-2 at Muzaffarpur	04/01/18	09:00	05/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	
69	400 kV PTN-BRH CKT – III	04/01/18	08:00	04/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	
70	Main bay 765 KV ICT-1 (bay 703) at New Ranchi	04/01/18	08:00	04/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
71	400kV HVDC North side Converter Tnx Main Bay @ Pusauli	04/01/18	09:00	06/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
72	765kV Gaya-VNS-2 line	04/01/18	09:00	04/01/18	17:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	NLDC
73	500 MVA ICT -1 at Kishanganj	04/01/18	09:30	04/01/18	17:00	ODB	POWERGRID ER-I	AMP WORK	
74	400KV Berhampore Sagardighi Ckt-II Tie Bay (411 Bay) AT BERHAMPUR	04/01/18	08:00	04/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
75	200 kV Malda -Dalkhola-II	04/01/18	08:00	04/01/18	17:00	ODB	ER-II	Insulator replacement	
76	403 KV ALIPURDUAR-BINAGURI-II	04/01/18	10:00	04/01/18	18:00	ODB	ER-II	A/R CHECKING	
77	125 MVAR BUS REACTOR-II AT ALIPURDUAR	04/01/18	10:00	04/01/18	18:00	ODB	ER-II	TAN DELTA AT VARIABLE FREQUENCY	
78	KGPR:80 M,VAR,400KV BUS REACTOR	04/01/18	07:00	04/01/18	15:00	ODB	WB	MAINTENANCE WORK	
79	DGPR: DGPR-ABG	04/01/18	09:00	04/01/18	15:00	ODB	WB	MAINTENANCE WORK	
80	NEW CHANDITALA:400 MB1,B/C,,JEERAT#	04/01/18	07:00	04/01/18	15:00	ODB	WB	MAINTENANCE WORK	
81	ABG:400KV BKTPP#	04/01/18	06:00	04/01/18	15:00	ODB	WB	MAINTENANCE WORK	
82	220KV ALIPURDUAR-SALAKATI-DC	04/01/18	06:00	05/01/18	16:00	ODB	WB	FOR ERECTION OF 220KV ALIPURDUAR(PG)-ALIPURDUAR(WB)-DC LINE.	NLDC
83	400 kV Bus -I at Jeypore	04/01/18	09:00	04/01/18	16:00	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 (Outage to be booked under Construction Head)	
84	400 KV Indravati-Jeypore line	04/01/18	08/00	05/01/18	18:00	OCB	ER-II/Odisha /Indravati	Shifting or interchanging the position of LAs & CVTs and pre commissioning testing.	NLDC
85	765KV 240 MVAr Bus reactor-I at Sundargarh	04/01/18	09:00	04/01/18	12:00	ODB	ER-II/Odisha/Sundergarh	Shifting of spare Reactor to -YPh reactor of 765KV B/R-I after attending oil leakage of the Reactor.	NLDC
86	765/400kV, 1500MVA ICT-1 at Angul	04/01/18	09:00	04/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
87	400kV Rengali-Talcher-I Main Bay-404 at Rengali	04/01/18	00:00	09/01/18	17:00	OCB	ER-II/Odisha/Rengali	For CB Mechanism and Pole overhaulling work and AMP.	
88	315MVA ICT#2	04/01/18	09:00	04/01/18	18:00	ODB	ER-II/Odisha/Rourkela S/S	To carry out C&Tan Delta measurement of its bushings for healthiness check-up.	GRIDCO
89	Angul Line main BAY CB(401)	04/01/18	09:00	04/01/18	18:00	ODB	ER-II/Odisha/BOLANGIR	AMP work for 401 CB and 401CT	
90	63MVAr Dubri Line reactor(407R)	04/01/18	09:30	04/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
91	400KV ICT-I-Rengali Tie Bay(40506 Bay) at Keonjhar	04/01/18	09:00	04/01/18	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Activity	
92	765 KV D/C Jharsuguda- Darlipali transmission line ckt# 1 &2	04/01/18	08:00	06/01/18	17:00	ODB	ER-II/Odisha/Sundergarh TLM	**To attend various minor observation**	NLDC
93	220KV BAY OF 500MVA ICT-I at New Purnea	05/01/18	10:00	05/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
94	132KV D/C LALMATIA - SAHEBGANJ	05/01/18	08:00	06/01/18	17:00	ODB	POWERGRID ER-I	CONSTRUCTION OF 400KV RJT-PRN LINE	JSEB
95	400/132kv 200 MVA ICT-1 at Lakhisarai	05/01/18	08:00	06/01/18	18:00	ODB	POWERGRID ER-I	Checking of Air Cell.	BIHAR
96	400 kV PTN-BRH CKT – IV	05/01/18	08:00	05/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	
97	765KV Tie Bay of ICT-2 & DMJ L/R-1 (bay 705) at New Ranchi	05/01/18	08:00	05/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	NLDC
98	400kV Maithon-Gaya-1 line	05/01/18	09:00	05/01/18	17:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
99	125 MVAR BR-2 at KISHENGANJ	05/01/18	09:30	05/01/18	16:00	ODB	POWERGRID ER-I	AMP WORK	
100	400KV Berhampore Bheramara Ckt-I Main Bay (404 Bay) AT BERHAMPUR	05/01/18	08:00	05/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
101	125 MVAR-Bus Reactor-2 AT DURGAPUR	05/01/18	09:00	05/01/18	17:00	ODB	ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
102	500MVA, ICT-2 at Maithon SS	05/01/18	10:00	05/01/18	17:30	ODB	ER-II	Onload testing of CSD and validation of OFS	DVC
103	400 KV BINAGURI-BONGAIGAON-I	05/01/18	10:00	14/01/18	18:00	OCB	ER-II	CONDUCTOR REPLACEMENT WORK AS REFERRED IN AGENDA POINTS OF 139TH OCC	NLDC
104	ABG:315 MVA TR 1	05/01/18	06:00	05/01/18	15:00	ODB	WB	MAINTENANCE WORK	
105	DGPR:DGPR-ABG	05/01/18	09:00	05/01/18	15:00	ODB	WB	MAINTENANCE WORK	
106	400 kV Bus -II at Jeypore	05/01/18	09:00	05/01/18	16:00	ODB	ER-II/Odisha /Jeypore s/s	For Pipe structure connection from Existing 400KV Bus-II to Ongoing 400KV Bus-II Erection under ongoing STATCOM Project Works (Outage to be booked under Construction Head)	
107	765KV 240 MVAr Bus reactor-II at Sundargarh	05/01/18	09:00	05/01/18	12:00	ODB	ER-II/Odisha/Sundergarh	Shifting of R-Ph Reactor to Spare Reactor to attend oil leakage in R-Ph Reactor.	NLDC
108	400KV ICT-2 MAIN BAY(407) at Angul	05/01/18	10:00	05/01/18	16:00	ODB	Angul SS	AMP Work.	
109	400 KV Rourkela-Raigarh -I (Old cofiguration : RKL-RGH # CKT-II)	05/01/18	10:00	05/01/18	17:00	ODB	ER-II/Odisha/Sundergarh TLC	Connection of LILO point with Sundargarh Pooling station	NLDC
110	400KV ROURKELA-SUNDARGARH#1	05/01/18	09:00	05/01/18	18:00	ODB	ROURKELA	Retrofitting & Commissioning of its Main CB A/R Relay.	
111	Jeypore Line main BAY CB(403)	05/01/18	09:00	05/01/18	18:00	ODB	ER-II/Odisha/BOLANGIR	AMP work for 403 CB	
112	Dubri Bus reactor at Dubri end	05/01/18	09:30	05/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	GRIDCO

113	400Kv Rengali main bay (405 Bay) at Keonjhar	05/01/18	09:00	05/01/18	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Activity	
114	400 KV New Siliguri-Purnea Ckt 2	05/01/18	09:00	07/01/18	17:00	ODB	ER-II	Insulator repalacement	
115	220KV BUS COUPLER at New Purnea	06/01/18	10:00	06/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
116	400/220kV, 315MVA ICT-2 at Jamshedpur	06/01/18	09:30	06/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	JSEB
117	400 kV PTN-BAL CKT I	06/01/18	08:00	06/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	NLDC
118	400kV Maithon-Gaya-2 line	06/01/18	09:00	06/01/18	17:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
119	400KV Berhampore Bheramara Ckt-II Main Bay (401 Bay) AT BERHAMPUR	06/01/18	08:00	06/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
120	40852 BAY AT BINAGURI SS	06/01/18	09:00	06/01/18	17:00	ODB	ER-II		
121	315 MVA ICT-I AT ALIPURDUAR	06/01/18	10:00	06/01/18	18:00	ODB	ER-II	TAN DELTA AT VARIABLE FREQUENCY	
122	ABG:315 MVA TR 2	06/01/18	06:00	06/01/18	15:00	ODB	WB	MAINTENANCE WORK	
123	NEW CHANDITALA:400KV MB1,B/C,400/220KV 315 MVA TR1	06/01/18	07:00	06/01/18	15:00	ODB	WB	MAINTENANCE WORK	
124	765KV Bus-II	06/01/18	09:00	06/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of CVT connector to reduce load on CVT under system improvement scheme.	NLDC
125	315MVA Ict-II	06/01/18	09:30	06/01/18	11:30	ODB	ER-II/Odisha/BARIPADA S/S	Insulation sleeves work on 52 kV buhsings	
126	400KV ICT-2 & TALCHER LINE TIE (408) at Angul	06/01/18	10:00	06/01/18	16:00	ODB	Angul SS	AMP Work.	
127	400kV HVDC East side Converter Tnx Main Bay @ Pusauli	07/01/18	09:00	09/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
128	315MVA ICT-I	07/01/18	09:30	07/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
129	220/132KV 160 MVA ICT#3 AT PURNEA	08/01/18	09:00	15/01/18	16:00	OCB	POWERGRID ER-I	FOR GIS WORK AND AMP 2017-18 (ICT-1 & 2 WILL REMAIN CHARGED)	BIHAR
130	MAIN BAY 400KV BSF-I (424) at New Purnea	08/01/18	10:00	08/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
131	400kV BUS - 1 at Jamshedpur	08/01/18	09:30	08/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	
132	400 kV PTN-BAL CKT II	08/01/18	08:00	08/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	NLDC
133	400 KV BUS -2 at New Ranchi	08/01/18	08:00	10/01/18	18:00	ODB	POWERGRID ER-I	STATCOM CONSTRUCTION WORK	
134	Main bay 765KV B/R-2 (bay 707) at New Ranchi	08/01/18	08:00	08/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	NLDC
135	400 KV RAGHUNATHPUR-2 Main Bay at Ranchi	08/01/18	10:00	08/01/18	17:00	ODB	POWERGRID ER-I	AMP	
136	400 KV Ranchi- Maithan RB-I Line	08/01/18	10:00	08/01/18	17:00	ODB	POWERGRID ER-I	for line maintenance work	
137	220 KV BUS-I at Gaya S/S	08/01/18	08:00	08/01/18	18:00	ODB	POWERGRID ER-I	For KHJARSARAI bay commisioning work	BIHAR
138	400/132kv 200 MVA ICT-I AT BANKA SS	08/01/18	10:00	08/01/18	18:00	ODB	POWERGRID ER-I	PROVIDING INSULATION SLEEVES ON TERTIARY CONDUCTOR	BIHAR
139	400KV Berhampore Jeerat Tie Bay (402 Bay) AT BERHAMPUR	08/01/18	08:00	08/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
140	125MVAR BUS REACTOR-3 AT DURGAPUR	08/01/18	09:00	08/01/18	17:00	ODB	ER-II	FF commissioning balance works under BHEL (ERSS-IX)	
141	400 kV Malda -Faraka-I	08/01/18	08:00	09/01/18	17:00	ODB	ER-II	Insulator replacement	
142	220 kV/ 132 kV ICT-1 AT RANGPO	08/01/18	09:00	08/01/18	17:00	ODB	ER-II	103/211 BAY AMP Works	
143	315 MVA ICT-II AT ALIPURDUAR	08/01/18	10:00	08/01/18	18:00	ODB	ER-II	TAN DELTA AT VARIABLE FREQUENCY	
144	220kv Durgapur-Waria(DVC)#1	08/01/18	09:00	08/01/18	15:00	ODB	WB	MAINTENANCE WORK	
145	DGPR:DGPR-PPSP#2	08/01/18	09:00	08/01/18	15:00	ODB	WB	MAINTENANCE WORK	
146	NEW CHANDITALA: 400MB 2,B/C,KGPR#2	08/01/18	07:00	08/01/18	15:00	ODB	WB	MAINTENANCE WORK	
147	ABG:315 MVA TR 3	08/01/18	06:00	08/01/18	15:00	ODB	WB	MAINTENANCE WORK	
148	GKN:400KV FRKK#1	08/01/18	07:00	08/01/18	15:00	ODB	WB	MAINTENANCE WORK	
149	220kv Durgapur-Waria(DVC)#2	08/01/18	09:00	08/01/18	15:00	ODB	WB	MAINTENANCE WORK	
150	400KV TEESTA-V-RANGPO-I	08/01/18	09:00	13/01/18	18:00	ODB	TEESTA-V	AMP WORK	
151	765/400KV ICT# I& 765/400kv#II	08/01/18	09:00	08/01/18	17:00	ODB	ER-II/Odisha/Sundergarh	Replacement of corona ring of suspension insulator in 400KV Side of ICT-I&II	NLDC
152	400KV ICT-2 & TALCHER LINE MAIN BAY (409) at Angul	08/01/18	10:00	08/01/18	16:00	ODB	Angul SS	AMP Work.	
153	765kV 3*80MVAR Line Reactor-1	08/01/18	08:00	08/01/18	18:00	ODB	Angul SS	For attending Oil Leakage by full gasket replacement in B-phase of L/R-1 under M/s. TBEA Punch points.	NLDC
154	400KV ROURKELA-CHAIBASA#1	08/01/18	09:00	09/01/18	18:00	OCB	ROURKELA	Retrofitting & Commissioning of its Main & Tie CB A/R Relays.	
155	160 MVA ICT#1 at Baripada	08/01/18	09:00	08/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	GRIDCO
156	400kV Fkk-Sagardighi	08/01/18	09:00	08/01/18	17:00	ODB	FARAKKA	Relay & CT testing	
157	TIE BAY 400KV BSF-I (423) at New Purnea	09/01/18	10:00	09/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
158	400 kV Main Bus-1 at Lakhisarai	09/01/18	10:00	09/01/18	14:00	ODB	POWERGRID ER-I	AMP	
159	220KV BUS-1 at Muzaffarpur	09/01/18	09:00	10/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	
160	400 kV PTN-BAL CKT III	09/01/18	08:00	09/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	NLDC
161	Tie bay 765KV B/R-2 & Future (bay 708) at New Ranchi	09/01/18	08:00	09/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	NLDC
162	400 KV Ranchi- Maithan RB-I Line	09/01/18	10:00	09/01/18	17:00	ODB	POWERGRID ER-I	for line maintenance work	
163	400/220kV 315MVA ICT-II at Pusauli	09/01/18	09:00	09/01/18	18:00	ODB	POWERGRID ER-I	For commissioning of CSD Relay	
164	400/132kv 200 MVA ICT-II AT BANKA SS	09/01/18	10:00	09/01/18	18:00	ODB	POWERGRID ER-I	PROVIDING INSULATION SLEEVES ON TERTIARY CONDUCTOR	BIHAR
165	400 KV Subhasgram- Jeerat Line	09/01/18	08:00	09/01/18	17:30	ODB	ER-II	Replacement of R Ph CVT at Jeerat End and AMP of bay equipments	WB
166	400KV Berhampore Farakka Main Bay (406 Bay) AT BERHAMPUR	09/01/18	08:00	09/01/18	17:30	ODB	ER-II	Circuit Breaker DCRM Testing	
167	220 kV/ 132 kV ICT-2 AT RANGPO	09/01/18	09:00	09/01/18	17:00	ODB	ER-II	104 /210 BAY AMP Works	
168	DGPR:400KV PPSP#2	09/01/18	09:00	09/01/18	15:00	ODB	WB	MAINTENANCE WORK	
169	NEW CHANDITALA:400KV MB2,B/C,KTPS #	09/01/18	07:00	09/01/18	15:00	ODB	WB	MAINTENANCE WORK	
170	ABG:50 MVAR BUS REACTOR	09/01/18	06:00	09/01/18	15:00	ODB	WB	MAINTENANCE WORK	
171	KGPR:400KV KTPP#1	09/01/18	07:00	09/01/18	15:00	ODB	WB	MAINTENANCE WORK	
172	GKN:400KV FRKK#2	09/01/18	07:00	09/01/18	15:00	ODB	WB	MAINTENANCE WORK	
173	Jeerat: 315MVA TR#1	09/01/18	07:00	09/01/18	15:00	ODB	WB	MAINTENANCE WORK	
174	Tie Bay-702 of 765KV B/R-I & 765/400KV ICT-I	09/01/18	09:00	09/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	To rectification of CSD in 705 CB	NLDC
175	400KV ICT-3 MAIN BAY(413) at Angul	09/01/18	10:00	09/01/18	16:00	ODB	Angul SS	AMP Work.	
176	315 MVA ICT-I BAY CB(402)	09/01/18	09:00	09/01/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 402 CB and 402 CT	
177	132 kV 101 BAY (Jaleswar Line main Bay) at Baripada	09/01/18	09;00	09/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT junction Box Replacement	GRIDCO
178	400Kv Bus reactor Main bay(408 Bay) at Keonjhar	09/01/18	09:00	09/01/18	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Activity	
179	Barh Patna line -3	09/01/18	09:30	10/01/18	18:00	OCB	BARH	Attending defect of isolator & annual testing of bay equipments.	
180	400kV/220kV auto Transformer	09/01/18	10:00	10/01/18	17:00	ODB	FARAKKA	Transformer & Relay testing	
181	400 KV New Siliguri- Rangpo ckt 1	09/01/18	09:00	10/01/18	17:00	ODB	ER-II	Jumper tighening	
182	MAIN BAY 400KV BSF-II (421) at New Purnea	10/01/18	10:00	10/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
183	400kV BUS -2 at Jamshedpur	10/01/18	09:00	10/01/18	17:00	ODB	POWERGRID ER-I	AMP WORK	
184	400 KV LKS - KHG CKT- I	10/01/18	08:00	10/01/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
185	400 kV PTN-BAL CKT IV	10/01/18	08:00	10/01/18	18:00	ODB	POWERGRID ER-I	for replacement of porcelain insulators with polymers insulator	NLDC
186	Tie bay 765KV B/R-1 & Future (bay 711) at New Ranchi	10/01/18	08:00	10/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	NLDC
187	400KV New Ranchi- PPSP Ckt-1	10/01/18	08:00	10/01/18	18:00	ODB	POWERGRID ER-I	CSD COMMISSIONING WORK	WB
188	400/220KV 315 MVA I C T - I at Ranchi	10/01/18	10:00	10/01/18	17:00	ODB	POWERGRID ER-I	AMP	JSEB
189	400kV HVDC East side Converter Tnx_Filter Tie Bay @ Pusauli	10/01/18	09:00	12/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
190	220 KV BUS-II at Gaya S/S	10/01/18	08:00	10/01/18	18:00	ODB	POWERGRID ER-I	For KHJARSARAI bay commisioning work	BIHAR
191	50 MVAR Bus Reactor-I AT DURGAPUR	10/01/18	09:00	10/01/18	17:00	ODB	ER-II	AMP of Equipment	
192	125 MVAR Bus reactor-II AT MAITHON	10/01/18	10:00	10/01/18	17:30	ODB	ER-II	Onload testing of CSD	
193	222 kV/ 132 kV ICT-3 AT RANGPO	10/01/18	09:00	10/01/18	17:00	ODB	ER-II	108 /209 BAY AMP Works	
194	220 KV BIRPARA-MALBASE	10/01/18	09:00	14/01/18	17:00	OCB	ER-II	TOWER SHIFTING WORK as referred in agenda points of 139th OCC.	NLDC
195	Jeerat: 315MVA TR#2	10/01/18	07:00	10/01/18	15:00	ODB	WB	MAINTENANCE WORK	
196	DGPR:400KV PPSP#1	10/01/18	09:00	10/01/18	15:00	ODB	WB	MAINTENANCE WORK	

197	NEW CHANDITALA:400KV MB 2,B/C,400/220KV 315MVA TR 2	10/01/18	07:00	10/01/18	15:00	ODB	WB	MAINTENANCE WORK	
198	GKN:400KV B/C BAY	10/01/18	07:00	10/01/18	15:00	ODB	WB	MAINTENANCE WORK	
199	KGPR:400KV KTPP#2	10/01/18	07:00	10/01/18	15:00	ODB	WB	MAINTENANCE WORK	
200	DGPR:400KV PPSP1	10/01/18	09:00	10/01/18	15:00	ODB	WB	MAINTENANCE WORK	
201	ICT-I (3x 105 MVA) at Jeypore	10/01/18	09:00	10/01/18	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
202	Tie Bay-705 of 765KV B/R-II & 765/400KV ICT-II	10/01/18	09:00	10/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	To rectification of CSD in 702 CB	NLDC
203	400KV ICT-3 & FUTURE LINE TIE BAY(414) at Angul	10/01/18	10:00	10/01/18	16:00	ODB	Angul SS	AMP Work.	
204	400kV Rengali-Talcher-I Tie Bay-406 at Rengali	10/01/18	09:00	17/01/18	17:00	OCB	ER-II/Odisha	For CB Mechanism and Pole overhaulling work and AMP.	
205	765 KV D/C Jharsuguda- Dharamjaygarh Transmission line (Ckt-I & II)	10/01/18	08:00	12/01/18	17:00	OCB	ER-II/Odisha/Sundergarh TLC	**Swapping arrangement :** Stringing work of 765KV Jharsuguda - Dharamjaygarh TL, Ckt-III & IV with Ckt-I & II	NLDC
206	315MVA ICT#2 MAIN BAY (BAY NO.- 415)	10/01/18	09:00	10/01/18	18:00	OCB	ROURKELA	AMP WORK	
207	220KV side, 315 MVA ICT-I BAY CB(208)	10/01/18	09:00	10/01/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 208 CB and 208 CT	GRIDCO
208	132 kV 103 BAY (BhograiLine main Bay) at Baripada	10/01/18	09;00	10/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT junction Box Replacement	
209	Auto reclose of 765 Angul-Jharsuguda Ckt#2	10/01/18	09:00	31/01/18	17:00	ODB	ER-II/Odisha	For OPGW rectification work	NLDC
210	400Kv Baripada Main Bay(407 Bay) at Keonjhar	10/01/18	09:00	10/01/18	18:00	ODB	ER-II/Odisha/Keonjhar	AMP Activity	
211	400KV Kahalgaon-Banka Line-1	10/01/18	09:30	10/01/18	17:30	ODB	KAHALGAON	PM works & relay testing	
212	220 KV MAIN BUS-1 AT 220/132 KV PURNEA SS	11/01/18	09:00	11/01/18	16:00	ODB	POWERGRID ER-I	AMP 2017-18	BIHAR
213	TIE BAY 400KV BSF-I (423) at New Purnea	11/01/18	10:00	11/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
214	220KV BUS-2 at Muzaffarpur	11/01/18	09:00	12/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	
215	400kV JSR-ANDAL 1 LINE	11/01/18	09:30	11/01/18	10:30	ODB	POWERGRID ER-I	AMP WORK	DVC
216	400 KV LKS - KHG CKT- II	11/01/18	08:00	11/01/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
217	400 KV Bus-I at Patna	11/01/18	09:00	12/01/18	18:00	ODB	POWERGRID ER-I	AMP	
218	Main bay 765KV DMJ Line-2 (bay 715) at New Ranchi	11/01/18	08:00	11/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	NLDC
219	765/400kV, 1500MVA, ICT for regular changeover in 06 month	11/01/18	09:00	13/01/18	18:00	OCB	POWERGRID ER-I	02 days for stability test and changing of Delta connection in LV side and 01 day for idle charging (without load) for 24 hrs due to first time charging of 500MVA, B-Phase ICT	NLDC
220	132 KV SULTANGANJ CKT-I BAY (109 BAY)	11/01/18	11:00	11/01/18	17:00	ODB	POWERGRID ER-I	RELAY TESTING	BIHAR
221	40952 BAY AT BINAGURI SS	11/01/18	09:00	11/01/18	17:00	ODB	ER-II		
222	Jeerat: 315MVA TR#3	11/01/18	07:00	11/01/18	15:00	ODB	WB	MAINTENANCE WORK	
223	DGPR:400KV PPSP1	11/01/18	09:00	11/01/18	15:00	ODB	WB	MAINTENANCE WORK	
224	NEW CHANDITALA:400KV MB 1,B/C,80 MVAR REACTOR	11/01/18	09:00	11/01/18	15:00	ODB	WB	MAINTENANCE WORK	
225	ABG:400KV DGPR#	11/01/18	06:00	11/01/18	15:00	ODB	WB	MAINTENANCE WORK	
226	GKN:400KV BUS REACTOR	11/01/18	09:00	11/01/18	15:00	ODB	WB	MAINTENANCE WORK	
227	Tie Bay-402 of 400KV Raigarh Line-II & 765/400KV ICT-I	11/01/18	09:00	11/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
228	765kV, 3*110MVAR Bus Reactor-2 at Angul	11/01/18	09:00	11/01/18		ODB	Angul SS	AMP Work.	NLDC
229	400KV ROURKELA-TALCHER#2	11/01/18	09:00	13/01/18	18:00	ODB	ROURKELA	For replacement of disc insulators with polymer insulators by M/s Selim Construction.	
230	220KV Kantapali line Bay CB (203)	11/01/18	09:00	11/01/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 203 CB and 203 CT	GRIDCO
231	220 kV 203 Bus Coupler Bay	11/01/18	09;00	11/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	
232	400KV Fkk-Durgapur Line-1	11/01/18	09:00	12/01/18	17:00	ODB	FARAKKA	Shunt Reactor, CT & Relay Test	
233	400 KV New Siliguri- Rangpo ckt 2	11/01/18	09:00	12/01/18	17:00	ODB	ER-II	Jumper tighening	
234	220 KV MAIN BUS-2 AT 220/132 KV PURNEA SS	12/01/18	09:00	12/01/18	16:00	ODB	POWERGRID ER-I	AMP 2017-18	BIHAR
235	132 KV PURNEA - PURNEA BSPTCL#1 LINE	12/01/18	09:00	16/01/18	16:00	OCB	POWERGRID ER-I	GIS WORK (Load will be catered through 132 kV feeder BSPTCL- 3 & KISHANGANJ to BSPTCL/Purnea through 02 No. 160 MVA ICT for next 4 days.)	BIHAR
236	220KV S/C FKK-LALMATIA LINE	12/01/18	08:00	13/01/18	17:00	ODB	POWERGRID ER-I	CONSTRUCTION OF 400KV RJT-PRN LINE	JSEB
237	400 kV Main Bus-2 at Lakhisarai	12/01/18	10:00	12/01/18	14:00	ODB	POWERGRID ER-I	AMP	
238	400 KV BSF - MUZ CKT -I	12/01/18	08:00	12/01/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
239	220 KV Hatia-II Bay (Bay no. 01) at Ranchi	12/01/18	10:00	12/01/18	17:00	ODB	POWERGRID ER-I	AMP	JSEB
240	400 KV BUS-I at Gaya S/S	12/01/18	08:00	12/01/18	18:00	ODB	POWERGRID ER-I	Bay extension work for Gaya Navinagar Line	
241	132 KV SULTANGANJ CKT-II BAY (110 BAY)	12/01/18	11:00	12/01/18	17:00	ODB	POWERGRID ER-I	RELAY TESTING	BIHAR
242	220KV SUBHASGRAM-New Town Line	12/01/18	08:00	12/01/18	17:30	ODB	ER-II	AMP of bay equipments	WB
243	400 KV Bidhannagar line-II AT DURGAPUR	12/01/18	09:00	12/01/18	17:00	ODB	ER-II	CVT & LA shifting in new foundation	WB
244	408 Bay (B'nagar-I & ICT-I Tie bay) AT DURGAPUR	12/01/18	09:00	22/01/18	17:00	OCB	ER-II	Replace of old BHEL by new CGL CB	
245	400KV Maithon-Kahalgaon Line 1	12/01/18	10:00	12/01/18	13:00	ODB	ER-II	Retrofitting of Diff relay	
246	132 KV RANGPO-MELLI	12/01/18	09:00	12/01/18	17:00	ODB	ER-II	111 Bay AMP Works	SIKKIM
247	Jeerat: 315MVA TR#4	12/01/18	07:00	12/01/18	15:00	ODB	WB	MAINTENANCE WORK	
248	ABG:400KV KTPP#	12/01/18	06:00	12/01/18	15:00	ODB	WB	MAINTENANCE WORK	
249	Main Bay-404 of 400KV Rourkela Line-II	12/01/18	09:00	12/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
250	400KV JINDAL LINE2 MAIN BAY (425) at Angul	12/01/18	10:00	12/01/18	16:00	ODB	Angul SS	AMP Work.	
251	220KV FUTURE line-4 Bay CB (209)	12/01/18	09:00	12/01/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 209 CB and 209 CT	
252	400 kV Bus-II at Baripada	12/01/18	08:30	12/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-II)	
253	400KV Bus-1 AT Barh	12/01/18	09:30	12/01/18	18:00	ODB	BARH	Attending defect of isolator connected to Bus	
254	400kV JSR-ANDAL 2 LINE	13/01/18	09:30	13/01/18	10:30	ODB	POWERGRID ER-I	AMP WORK	DVC
255	400 KV BSF - MUZ CKT -II	13/01/18	08:00	13/01/18	18:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
256	Main bay 400 KV PPSP CKT-2 (bay 422) at New Ranchi	13/01/18	08:00	13/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
257	220 KV Bus Coupler Bay (Bay no. 03) at Ranchi	13/01/18	10:00	13/01/18	17:00	ODB	POWERGRID ER-I	AMP (During S/D Bus Coupler Bay not in service (220 KV BUS-I & II will decouple)	JSEB
258	400kV North Side Filter Main Bay@Pusauli	13/01/18	09:00	15/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
259	400 KV BUS-II at Gaya S/S	13/01/18	08:00	13/01/18	18:00	ODB	POWERGRID ER-I	Bay extension work for Gaya Navinagar Line	
260	132 KV RANGPO-CHUJACHEN	13/01/18	09:00	13/01/18	17:00	ODB	ER-II	113 Bay AMP works	
261	DGPR:400KV PGCIL#2	13/01/18	09:00	13/01/18	15:00	ODB	WB	MAINTENANCE WORK	
262	NEW CHANDITALA:400KV MB1,B/C,KHP#2,KTPS,ICT2	13/01/18	07:00	13/01/18	15:00	ODB	WB	MAINTENANCE WORK	
263	Tie Bay-405 of 400KV Rourkela Line-II & 765/400KV ICT-II	13/01/18	09:00	13/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
264	400KV JINDAL LINE2 & GMR LINE1 TIE BAY (426) at Angul	13/01/18	10:00	13/01/18	16:00	ODB	Angul SS	AMP Work.	
265	400 kV Bus-I at Baripada	13/01/18	08:30	13/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for isolation of GIS Bus-I)	
266	400 kV Bay 413CB(GIS) at Baripada	13/01/18	08:30	22/01/18	17:30	OCB	ER-II/Odisha/BARIPADA S/S	For GIS Bus-I ext. works	
267	DGPR:400KV PGCIL2	14/01/18	09:00	14/01/18	15:00	ODB	WB	MAINTENANCE WORK	
268	404BAY (Kharagpur main Bay) at Baripada	14/01/18	09;00	14/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	
269	400KV NEW PURNEA - MALDA-I	15/01/18	10:00	15/01/18	18:00	ODB	POWERGRID ER-I	LINE BAY AMP & TIGHTING	
270	80 MVAR Bus Reactor at Lakhisarai	15/01/18	08:00	16/01/18	18:00	ODB	POWERGRID ER-I	For checking/rectification of alignment of Bus Reactor Isolator	
271	40252CB (Tie Bay of ICT2 & BR2) at Jamshedpur	15/01/18	09:30	16/01/18	17:30	OCB	POWERGRID ER-I	Pnumatic Drive unit overhauling work	
272	400 KV Bus-II at Patna	15/01/18	09:00	16/01/18	18:00	ODB	POWERGRID ER-I	AMP	
273	220 KV Transfer Bus Bay(Bay no. 07) at Ranchi	15/01/18	10:00	15/01/18	17:00	ODB	POWERGRID ER-I	AMP	JSEB

274	400 KV Ranchi- Rourkela-I Line	15/01/18	10:00	15/01/18	17:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
275	765 KV BUS-I at Gaya S/S	15/01/18	08:00	15/01/18	18:00	ODB	POWERGRID ER-I	For isolator rectification work under S/S extn. Package	NLDC
276	132 KV BANKA CKT-I BAY (103 BAY)	15/01/18	11:00	15/01/18	14:00	ODB	POWERGRID ER-I	AMP WORK	BIHAR
277	400 KV S/C Sagardighi-Subhsgramline	15/01/18	08:00	16/01/18	17:30	ODB	ER-II	TL AMP & Bent leg repair at Loc.216	WB
278	400 kV Malda -Purnea-I	15/01/18	08:00	16/01/18	17:00	ODB	ER-II	Insulator replacement	
279	400 KV BINAGURI-BONGAIGAON-II	15/01/18	10:00	24/01/18	18:00	OCB	ER-II	CONDUCTOR REPLACEMENT WORK AS REFERRED IN AGENDA POINTS OF 139TH OCC	NLDC
280	DGPR:400KV PGCIL FDR	15/01/18	09:00	15/01/18	15:00	ODB	WB	MAINTENANCE WORK	
281	NEW CHANDITALA:400KV MB 2,B/C,KGP#1,,IRT,ICT#1	15/01/18	07:00	15/01/18	15:00	ODB	WB	MAINTENANCE WORK	
282	GKN:400KV TR B/C BAY	15/01/18	07:00	15/01/18	15:00	ODB	WB	MAINTENANCE WORK	
283	400KV Main Bay-406 of 765/400KV ICT-II	15/01/18	09:00	15/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
284	400KV GMR LINE 1 MAIN BAY (427) at Angul	15/01/18	10:00	15/01/18	16:00	ODB	Angul SS	AMP Work.	
285	400kV Angul-Bolangir Line.	15/01/18	08:00	15/01/18	18:00	ODB	Angul TLAM	Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
286	765 KV D/C Angul - Jharsuguda Transmission line (Ckt-I & II)	15/01/18	08:00	21/01/18	17:00	OCB	ER-II/Odisha/Sundergarh TLC	**Swapping arrangement :** Stringing work of 765KV Angul - Jharsuguda Ckt-III & IV with Ckt-I & II	NLDC
287	315MVA ICT#2 TIE BAY (BAY NO.- 414)	15/01/18	09:00	15/01/18	18:00	ODB	ROURKELA	AMP WORK	
288	405BAY (Tie Bay of Kharagpur Line-ICT II) at Baripada	15/01/18	09;00	15/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	
289	765 KV D/C Angul - Jharsuguda Transmission line (Ckt-I & II)	15/01/18	08:00	21/01/18	17:00	OCB	ER-II/Odisha/Sundergarh TLM	**Swapping arrangement :** Stringing work of 765KV Angul - Jharsuguda Ckt-III & IV with Ckt-I & II	NLDC
290	400kV Fkk-Kahalgaon line-3	15/01/18	09:00	15/01/18	17:00	ODB	FARAKKA	Relay & CT testing	
291	400kV Andal-Jamshedpur TL Ckt-1	15/01/18	08:00	25/01/18	17:30	ODB	ER-II	Replacement of damaged Porcelain Insulators within Forest	DVC
292	400 KV Kaniha- Rourkela # 1(400 KV Bay – 5,6)	15/01/18	09:00	20/01/2018	18:00	OCB	TSTPP	CT Replacement of Bay#6 'R'ph &' Y'ph, Line CVT Replacement RYB ph Replace, Reactor#1 leakage attend &oil filling & Annual O/H	
293	400KV NEW PURNEA - MALDA-II	16/01/18	10:00	16/01/18	18:00	ODB	POWERGRID ER-I	LINE BAY AMP & TIGHTING	
294	400kV BSF-Banka-2	16/01/18	10:00	16/01/18	14:00	ODB	POWERGRID ER-I	Line Bay AMP	
295	400 KV Chandwa-Ranchi Circuit-II	16/01/18	09:00	17/01/18	18:00	OCB	POWERGRID ER-I	To attend hydraulic system leakage problem in R-ph Circuit Breaker of Chandwa-Ranchi Circuit-2	
296	Tie bay 400 KV B/R-1 & RNC-RNC Ckt-3 (bay 411) at New Ranchi	16/01/18	08:00	16/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
297	220 KV TRANSFER BUS at Ranchi	16/01/18	10:00	16/01/18	17:00	ODB	POWERGRID ER-I	AMP	JSEB
298	400 KV Ranchi- Rourkela-II Line	16/01/18	10:00	16/01/18	17:00	ODB	POWERGRID ER-I	For replacement of insulators damaged by miscreant	
299	400kV East Side Filter Main Bay@Pusauli	16/01/18	09:00	18/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
300	765 KV BUS-II at Gaya S/S	16/01/18	08:00	16/01/18	18:00	ODB	POWERGRID ER-I	For isolator rectification work under S/S extn. Package	NLDC
301	132 KV BANKA CKT-II BAY (105 BAY)	16/01/18	11:00	16/01/18	14:00	ODB	POWERGRID ER-I	AMP WORK	BIHAR
302	220KV WBSETCL Subhasgram CKT#2	16/01/18	08:00	16/01/18	17:30	ODB	ER-II	AMP of bay equipments.	WB
303	41252 BAY AT BINAGURI SS	16/01/18	09:00	16/01/18	17:00	ODB	ER-II		
304	400KV Maithon-Kahalgaon Line 2	16/01/18	10:00	16/01/18	13:00	ODB	ER-II	Retrofitting of Diff relay	
305	132 kV BUS SECTIONALIZER- 1 AT RANGPO	16/01/18	09:00	16/01/18	17:00	ODB	ER-II	109 Bay AMP works	
306	GKN:400KV PGCIL1 FDR	16/01/18	09:00	16/01/18	15:00	ODB	WB	MAINTENANCE WORK	
307	KGPR:400KV BUS TR BAY	16/01/18	07:00	16/01/18	15:00	ODB	WB	MAINTENANCE WORK	
308	220KV JEYNAGAR-I Main BAY (204)	16/01/18	09:30	16/01/18	17:30	ODB	ER-II/Odisha /Jeypore	For AMP Works (204)	
309	Main Bay-407 of 400KV Raigarh Line-I	16/01/18	09:00	16/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
310	765KV ICT-2 MAIN BAY (707) at Angul	16/01/18	09:00	16/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
311	315MVA ICT#1	16/01/18	09:00	19/01/18	18:00	OCB	ROURKELA	For attending the oil mix up problem of OLTC in 315 MVA ICT#1 and to arrest oil leakage problem from tan delta test tap assemblies of its bushings.	GRIDCO
312	220KV side, 315 MVA ICT-II BAY CB(212)	16/01/18	09:00	16/01/18	18:00	ODB	ER-II/Odisha /Bolangir	AMP work for 212 CB	
313	401BAY (Keonjhar main Bay) at Baripada	16/01/18	09;00	16/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	
314	125MVAR BUS REACTOR-I at New Purnea	17/01/18	10:00	17/01/18	18:00	ODB	POWERGRID ER-I	REACTOR AMP	
315	40152CB (Tie Bay of ICT2 & BR2) at Jamshedpur	17/01/18	09:30	18/01/18	17:30	OCB	POWERGRID ER-I	Pnumatic Drive unit overhauling work	
316	400kV BSF-Sasaram-2	17/01/18	10:00	17/01/18	14:00	ODB	POWERGRID ER-I	Line Bay AMP	
317	500 MVA ICT-I at Patna	17/01/18	09:00	17/01/18	16:00	ODB	POWERGRID ER-I	AMP	
318	Main bay 400 KV NRNC-RNC CKT-4 (bay 415) at New Ranchi	17/01/18	08:00	17/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
319	765 KV NRNC - DMG Ckt-2	17/01/18	09:00	20/01/18	18:00	ODB	POWERGRID ER-I	Replacement of Insulators damaged by miscreants.	NLDC
320	220 KV BUS-I at Ranchi	17/01/18	10:00	17/01/18	17:00	ODB	POWERGRID ER-I	AMP	JSEB
321	63 MVAR Samath Line Reactor @ Pusauli	17/01/18	09:00	31/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
322	400 kV 125 MVAR Bus Reactor-1 at Gaya S/S	17/01/18	08:00	17/01/18	18:00	ODB	POWERGRID ER-I	Bay extension work for Gaya Navinagar Line	
323	132 KV SABOUR CKT-I BAY (106 BAY)	17/01/18	11:00	17/01/18	14:00	ODB	POWERGRID ER-I	AMP WORK	BIHAR
324	400 KV Berhampore-Bheramara Ckt-I	17/01/18	08:00	21/01/18	17:30	ODB	ER-II	TL AMP	NLDC
325	400 kV Malda -Purnea-II	17/01/18	08:00	18/01/18	17:00	ODB	ER-II	Insulator replacement	
326	132 kV BUS SECTIONALIZER- 2 AT RANGPO	17/01/18	09:00	17/01/18	17:00	ODB	ER-II	110 Bay AMP works	
327	DGPR:400/220KV,315 MVA TR 1	17/01/18	09:00	17/01/18	15:00	ODB	WB	MAINTENANCE WORK	
328	KGPR:400KV BUS1,B/C	17/01/18	07:00	17/01/18	15:00	ODB	WB	MAINTENANCE WORK	
329	220KV ICT-II Main BAY (208)	17/01/18	09:30	17/01/18	17:30	ODB	ER-II/Odisha /Jeypore	For AMP Works (208)	
330	Tie Bay-408 of 400KV Raigarh Line-I & Future	17/01/18	09:00	17/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
331	765KV ICT-2 SUNDARGARH LINE 1 TIE BAY (708) at Angul	17/01/18	09:00	17/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
332	765kV Angul-Srikakulam Line-1	17/01/18	08:00	17/01/18	18:00	ODB	Angul TLAM	Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
333	220 kV Balaosre-I	17/01/18	09;00	17/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	GRIDCO
334	400KV Kahalgaon-Banka Line-2	17/01/18	09:30	17/01/18	17:30	ODB	KAHALGAON	PM works & relay testing	
335	400kV Fkk-Bahrampore Line	17/01/18	09:00	19/01/18	17:00	ODB	FARAKKA	CVT Replacement, Relay & CT testing	
336	MAIN BAY OF 500MVA ICT-I (406) at New Purnea	18/01/18	10:00	18/01/18	18:00	ODB	POWERGRID ER-I	BAY AMP	
337	200 MVA ICT-2 & 80 MVAR Bus Reactor at Lakhisarai	18/01/18	08:00	21/01/18	18:00	ODB	POWERGRID ER-I	Fire wall Construction and Checking of Aircel of ICT-2	BIHAR
338	220 KV Patna Khagaul	18/01/18	09:00	18/01/18	18:00	ODB	POWERGRID ER-I	AMP	BIHAR
339	Main bay 400 KV PPSP CKT-1 (bay 419) at New Ranchi	18/01/18	08:00	18/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
340	400 kV 125 MVAR Bus Reactor-2 at Gaya S/S	18/01/18	08:00	18/01/18	18:00	ODB	POWERGRID ER-I	Bay extension work for Gaya Navinagar Line	
341	132KV SABOUR CKT-II BAY (107 BAY)	18/01/18	11:00	18/01/18	14:00	ODB	POWERGRID ER-I	AMP WORK	BIHAR
342	132 KV BUS COUPLER -1 AT RANGPO	18/01/18	09:00	18/01/18	17:00	ODB	ER-II	112 Bay AMP works	
343	DGPR:400/220KV,315 MVA TR2	18/01/18	09:00	18/01/18	15:00	ODB	WB	MAINTENANCE WORK	
344	GKN:400KV MB1	18/01/18	07:00	18/01/18	15:00	ODB	WB	MAINTENANCE WORK	
345	Tie Bay-414 of 400KV Bus Reactor-I&Future	18/01/18	09:00	18/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
346	765kV 3*80MVAR Srikakulan Line Reactor-1 at Angul	18/01/18	09:00	18/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
347	220 kV Balasore-II	18/01/18	09;00	18/12/17	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement	GRIDCO
348	220 KV PRN-NPRN-1 LINE	19/01/18	09:00	19/01/18	16:00	ODB	POWERGRID ER-I	FOR LINE AND BAY AMP WORK	
349	400kV BSF-Sasaram-1	19/01/18	09:00	19/01/18	18:00	ODB	POWERGRID ER-I	Line Bay With Line Reactor AMP	NLDC
350	200KV Patna Fatuha	19/01/18	09:00	19/01/18	18:00	ODB	POWERGRID ER-I	AMP	BIHAR
351	Main bay 400 KV B/R-1 (bay 410) at New Ranchi	19/01/18	08:00	19/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	

352	400kV HVDC North side Converter Tnx_Filter Tie Bay @ Pusauli	19/01/18	09:00	21/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	NLDC
353	400kV Nabinagar-II Main Bay @ Pusauli	19/01/18	09:00	19/01/18	18:00	ODB	POWERGRID ER-I	AMP work	
354	132 KV BUS COUPLER -2 AT RANGPO	19/01/18	09:00	19/01/18	17:00	ODB	ER-II	107 Bay AMP works	
355	DGPR:400KV TBC BAY	19/01/18	09:00	19/01/18	15:00	ODB	WB	MAINTENANCE WORK	
356	GKN:400KV MB 2	19/01/18	07:00	19/01/18	0/625	ODB	WB	MAINTENANCE WORK	
357	ABG:400KV MB 1 WITH B/C	19/01/18	06:00	19/01/18	15:00	ODB	WB	MAINTENANCE WORK	
358	KGPR:400KV BUS 2,B/C	19/01/18	07:00	19/01/18	15:00	ODB	WB	MAINTENANCE WORK	
359	400 KV, Quad Kishanganj-New Purnea-Ckt-1 Line of Powerlinks.	19/01/18	09:00	19/01/18	17:00	OCB	POWERLINK	For Replacement of 120 KN Porcelain insulators with Polymer Insulators under Purnea-Kishanganj Section.	
360	Tie Bay-417 of 400KV Bus Reactor-II & Future	19/01/18	09:00	19/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	For AMP work	
361	765KV ICT-2 SUNDARGARH LINE 1 MAIN BAY (709) at Angul	19/01/18	09:00	19/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
362	765kV Angul-Srikakulam Line-2	19/01/18	08:00	19/01/18	18:00	ODB	Angul TLAM	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 Rengali-Talcher-II Main Bay-403 at Rengali	19/01/18	09:00	25/01/18	17:00	OCB	ER-II/Odisha	For CB Mechanism and Pole overhaulling work and AMP.	
364	±500kV Talcher-Kolar HVDC **Pole-1**	19/01/18	07:00	19/01/18	19:00	ODB	ER-II/Odisha/Talcher HVDC	* Inspection and replacement of Grading Electrodes of Valve cooling system. * Annual Maintenance of HVDC station and lines. Pole-2 in MR mode. Pole-1 to be deblocked at 19:00hrs on 19/01/2018	NLDC
365	408 BAY(Duburi &jamshedpur line tie bay) at Baripada	19/01/18	09;00	19/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP work	
366	315MVA ICT-2 at Barh	19/01/18	09:30	22/01/18	18:00	OCB	BARH	Annual testing of ICT-2	
367	ICT-2 BAY Equipments	19/01/18	09:30	22/01/18	18:00	ODB	BARH	Annual testing of Bay equipments	
368	220 KV PRN-NPRN-2 LINE	20/01/18	09:00	20/01/18	16:00	ODB	POWERGRID ER-I	FOR LINE AND BAY AMP WORK	
369	Bus Reactor-1 (Bay- 208) AT NEW MELLI	20/01/18	08:30	20/01/18	17:30	ODB	ER-II	208 BAY AMP Works	
370	132 KV RANGPO-GANGTOK	20/01/18	10:00	22/01/18	18:00	OCB	ER-II	A/R IMPLEMENTATION AND RELAY RETROFITTING AT GANGTOK	SIKKIM
371	ABG:400KV MB 2 WITH B/C	20/01/18	06:00	20/01/18	15:00	ODB	WB	MAINTENANCE WORK	
372	DGPR: 400KV B/C WITH B BUS	20/01/18	09:00	20/01/18	15:00	ODB	WB	MAINTENANCE WORK	
373	400 KV, Quad Kishanganj-New Purnea-Ckt-2 Line of Powerlinks.	20/01/18	09:00	20/01/18	17:00	OCB	POWERLINK	For Replacement of 120 KN Porcelain insulators with Polymer Insulators under Purnea -Kishanganj Section.	
374	Main Bay-401 of 400KV Raigarh Line-II	20/01/18	09:00	20/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
375	Tie Bay-402 of 400KV Raigarh Line-II & 765/400KV ICT-I	20/01/18	14:00	20/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
376	765KV SRIKAKULAM LINE 2 MAIN BAY (726) at Angul	20/01/18	09:00	20/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
377	400KV ROURKELA-TALCHER#1	20/01/18	09:00	20/01/18	18:00	ODB	ROURKELA	Re-fixing of Arcing Horn, Dislocated VD, CC Ring Nut bolt fixing.	
378	±500kV Talcher-Kolar HVDC **Bipole**	20/01/18	06:00	21/01/18	19:00	OCB	ER-II/Odisha/Talcher HVDC	* Inspection and replacement of Grading Electrodes of Valve cooling system. * Annual Maintenance of HVDC station and lines. Both Poles will be OUT. Pole-1&2 to be deblocked at 19:00hrs on 21/01/2018	NLDC
379	132 kV 108 BAY (bangriposi Line main Bay) at Baripada	20/01/18	08:30	20/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT junction Box Replacement	
380	41152 BAY AT BINAGURI SS	21/01/18	09:00	21/01/18	17:00	ODB	ER-II		
381	400kV Meramundali Line-1 Main Bay (406) at Angul	21/01/18	10:00	21/01/18	16:00	ODB	Angul SS	AMP Work.	
382	410 BAY(pandiabilli line main bay) at Baripada	21/01/18	09:00	21/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP work	
383	220 KV DLK-PRN-1 LINE	22/01/18	09:00	22/01/18	16:00	ODB	POWERGRID ER-I	FOR LINE AND BAY AMP WORK	
384	132 KV Purnea-KISHANGANJ	22/01/18	10:00	22/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
385	400kV JSR-APNRL 1 LINE	22/01/18	09:30	22/01/18	17:30	ODB	POWERGRID ER-I	AMP WORK	
386	220 KV BUS coupler at patna	22/01/18	09:00	22/01/18	18:00	ODB	POWERGRID ER-I	AMP	
387	220 KV Gola- I Bay (Bay no-210) at Ranchi	22/01/18	10:00	22/01/18	17:00	ODB	POWERGRID ER-I	AMP (Bay not charged)	
388	400kV Allahabad Main bay @ Pusauli	22/01/18	09:00	24/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	
389	401 KV Berhampore-Bheramara Ckt-II	22/01/18	08:00	26/01/18	17:30	ODB	ER-II	TL AMP	NLDC
390	400 KV Bidhannagar line-I AT DURGAPUR	22/01/18	09:00	22/01/18	17:00	ODB	ER-II	CVT JB replacement work due damage	WB
391	Bus Reactor-2 (Bay- 211) AT NEW MELLI	22/01/18	08:30	21/01/18	17:30	ODB	ER-II	211 BAY AMP Works	
392	DGPR:A BUS WITH ABG MB DIVERTED THROUGH TBC BAY	22/01/18	09:00	22/01/18	15:00	ODB	WB	MAINTENANCE WORK	
393	GKN:400/220KV 315 MVA TR 1	22/01/18	07:00	22/01/18	15:00	ODB	WB	MAINTENANCE WORK	
394	BkTPP: 315MVA ICT#1	22/01/18	07:00	24/01/18	16:00	ODB	WB	MAINTENANCE WORK	
395	400 KV, Quad New Purnea-Muzaffarpur Ckt-1 Line of Powerlinks.	22/01/18	09:00	24/01/18	17:00	ODB	POWERLINK	For Replacement of 120 KN Porcelain insulators with Polymer Insulators under Purnea-Saharsa Section.	
396	220 kV Bus -I at Jeypore	22/01/18	09:00	23/01/18	18:00	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-I side Isolators	GRIDCO
397	400KV Main Bay-403 of 765/400KV ICT-I	22/01/18	09:00	22/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
398	Main Bay-404 of 400KV Rourkela Line-II	22/01/18	14:00	22/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
399	400KV ROURKELA-SUNDARGARH#2	22/01/18	09:00	22/01/18	18:00	ODB	ROURKELA	Re-fixing of Arcing Horn, Dislocated VD, CC Ring Nut bolt fixing.	
400	±500kV Talcher-Kolar HVDC **Pole-2**	22/01/18	07:00	22/01/18	19:00	ODB	ER-II/Odisha/Talcher HVDC	* Inspection and replacement of Grading Electrodes of Valve cooling system. * Annual Maintenance of HVDC station and lines. Pole-1 in MR mode. Pole-2 to be deblocked at 19:00hrs on 22/01/2018	NLDC
401	400 kV Bus-I at Baripada	22/01/18	08:30	22/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For GIS bay EXTN works(for recoonecting jumpers to GIS Bus-I)	
402	220 kV Balaosre-I	22/01/18	09:30	22/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Relay retrofittig woks	GRIDCO
403	400 kV Gaya-Chandwa D/C	22/01/18	09:30	22/01/18	17:30	ODB	POWERGRID ER-I	Replacement of Porcelain insulator with Polymer Insulator.	
404	220 KV DLK-PRN-2 LINE	23/01/18	09:00	23/01/18	16:00	ODB	POWERGRID ER-I	FOR LINE AND BAY AMP WORK	
405	132 KV Purnea-Purnea -3	23/01/18	10:00	23/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
406	132 Kv Transfer Bus Coupler at Lakhisarai	23/01/18	10:00	23/01/18	14:00	ODB	POWERGRID ER-I	AMP	BIHAR
407	220 KV Bus-II at Patna	23/01/18	09:00	24/01/18	18:00	ODB	POWERGRID ER-I	AMP	
408	Main bay 400KV B/R-2 (bay 404) at New Ranchi	23/01/18	08:00	23/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	
409	220 KV Gola- II Bay (Bay no-208) at Ranchi	23/01/18	10:00	23/01/18	17:00	ODB	POWERGRID ER-I	AMP (Bay not charged)	
410	500MVA ICT# V AT SUBHASGRAM	23/01/18	08:00	23/01/18	17:30	ODB	ER-II	AMP ICT alongwith bay equipments & PSD Re-commissioning work	WB
411	410 Bay (Sagardighi-II main bay) AT DURGAPUR	23/01/18	09:00	02/02/18	17:00	OCB	ER-II	Replace of old BHEL by new CGL CB	
412	220KV New Melli- New Melli line (Bay-207	23/01/18	08:30	22/01/18	17:30	ODB	ER-II	207 BAY AMP Works	
413	GKN:400/220KV 315 MVA TR 1	23/01/18	07:00	23/01/18	15:00	ODB	WB	MAINTENANCE WORK	
414	400 KV Kaniha- Rourkela # 2(400 KV Bay –7,8)	23/01/18	09:00	25/01/2018	18:00	OCB	TSTPP	Line CVT Replacement RYB ph, BAY#7 Line CT 'Y' & 'B' ph Replacement, Bay#7 CT Replacement 'Y' & 'B' ph, Bay#8 CT Replacement 'Y' ph & Annual O/H	

415	Tie Bay-405 of 400KV Rourkela Line-II & 765/400KV ICT-II	23/01/18	09:00	23/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
416	400KV Main Bay-406 of 765/400KV ICT-II	23/01/18	14:00	23/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
417	400KV BUS-1 at Angul	23/01/18	08:00	23/01/18	18:00	ODB	Angul SS	AMP Work.	
418	765kV Angul-Sundargarh Line-1	23/01/18	08:00	23/01/18	18:00	ODB	Angul TLAM	AMP work & Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
419	400KV ROURKELA-RAIGARH#4	23/01/18	09:00	23/01/18	18:00	ODB	ROURKELA	Re-fixing of Arcing Horn, Dislocated VD, CC Ring Nut bolt fixing.	NLDC
420	220 kV Balasore-II	23/01/18	09:30	23/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	Relay retrofitting works	GRIDCO
421	132 KV BUS COUPLER	24/01/18	10:00	24/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
422	400KV D/C FKK KAHALGOAN CKT I&II	24/01/18	08:00	25/01/18	17:00	ODB	POWERGRID ER-I	CONSTRUCTION OF 400KV RJT-PRN LINE	
423	400KV PPSP L/R-2 at New Ranchi	24/01/18	08:00	24/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	SWITCHABLE???
424	220KV New Melli-Tashiding line (Bay-212)	24/01/18	08:30	24/01/18	17:30	ODB	ER-II	212 Bay AMP Works	
425	ABG:400KV MB 1 WITH B/C	24/01/18	06:00	24/01/18	15:00	ODB	WB	MAINTENANCE WORK	
426	BkTPP: 400kv MB#1	24/01/18	07:00	25/01/18	16:00	ODB	WB	MAINTENANCE WORK	
427	GKN:400/220KV 315 MVA TR 1	24/01/18	07:00	24/01/18	15:00	ODB	WB	MAINTENANCE WORK	
428	220 kV Bus -II at Jeypore	24/01/18	09:00	25/01/18	18:00	ODB	ER-II/Odisha /Jeypore	Isolator Retrofitting Works of Bus-II side Isolators	GRIDCO
429	Main Bay-407 of 400KV Raigarh Line-I	24/01/18	09:00	24/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
430	Tie Bay-408 of 400KV Raigarh Line-I & Future	24/01/18	14:00	24/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
431	400KV BUS-2 at Angul	24/01/18	08:00	24/01/18	18:00	ODB	Angul SS	AMP Work.	
432	765kV Angul-Sundargarh Line-2	24/01/18	09:00	24/01/18	18:00	ODB	Angul TLAM	AMP work & Improvement & strenghthening of line jumpers to prevent swing during high speed wind to avoid tripping in future & improvement of line availability & reliability.	NLDC
433	400KV TALCHER#2-CHAIBASA#2 TIE BAY (BAY NO. 408)	24/01/18	09:00	24/01/18	18:00	ODB	ROURKELA	AMP WORK.	
434	125MVAR B/R of baripada SS	24/01/18	09:30	24/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
435	132 KV Kh- Sabour Line	24/01/18	09:30	24/01/18	17:30	ODB	KAHALGAON	PM works & relay testing	BIHAR
436	220/132kv 160 MVA ICT-2 Purnea	25/01/18	10:00	25/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
437	400 kV Main Bay of 400 kV LKR-BSF-1 at Lakhisarai	25/01/18	10:00	25/01/18	14:00	ODB	POWERGRID ER-I	AMP	
438	400kV Saranath_Future Tie bay @ Pusauli	25/01/18	09:00	27/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	
439	220Kv New Melli-JLHEP Line-1 (Bay- 205)	25/01/18	08:30	25/01/18	17:30	ODB	ER-II	205 Bay AMP works	
440	BkTPP: 315MVA ICT#2	25/01/18	07:00	28/01/18	16:00	ODB	WB	MAINTENANCE WORK	
441	GKN:400/220KV 315 MVA TR 1	25/01/18	07:00	25/01/18	15:00	ODB	WB	MAINTENANCE WORK	
442	400 KV, Quad New Purnea-Muzaffarpur Ckt-2 Line of Powerlinks.	25/01/18	09:00	27/01/18	17:00	ODB	POWERLINK	For Replacement of 120 KN Porcelain insulators with Polymer Insulators under Purnea-Saharsa Section.	
443	Main Bay-410 of 400KV Rourkela Line-I	25/01/18	09:00	25/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
444	Tie Bay-411 of 400KV Rourkela Line-I & Future	25/01/18	14:00	25/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
445	765kV 3*80MVAR Srikakulan Line Reactor-2	25/01/18	09:00	25/01/18		ODB	Angul SS	AMP Work.	NLDC
446	765KV SRIKAKULAM LINE 2 REACTOR BAY (726R) at Angul	25/01/18	09:00	25/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
447	400KV CHAIBASA#2 MAIN BAY (BAY NO.-409)	25/01/18	09:00	25/01/18	18:00	ODB	ROURKELA	AMP WORK.	
448	400 kV Bus-I at Baripada	25/01/18	08:30	25/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For reconnection of jumpers of GIS BUS-I	
449	400kV Bay-20 (Tie between DGP-2 & Kah-2 Lines)	25/01/18	09:00	05/02/18	17:00	OCB	FARAKKA	CB O/H by OEM	
450	765KV RNC-DMJ L/R-2 at New Ranchi	26/01/18	08:00	26/01/18	18:00	ODB	POWERGRID ER-I	AMP (17-18)	NLDC
451	765/400 KV ICT-1 at New Ranchi	26/01/18	08:00	27/01/18	18:00	ODB	POWERGRID ER-I	STATCOM CONSTRUCTION(TOWER ERECTION)	NLDC
452	315 MVA ICT-I AT SUBHASGRAM	26/01/18	08:00	26/01/18	17:30	ODB	ER-II	Installation of new numerical relays ,replacement of tertiary bay B Ph CT and AMP of ICT alongwith bay equipments	WB
453	400kV Andal-Jamshedpur TL Ckt-2	26/01/18	08:00	04/02/18	17:30	ODB	ER-II	Replacement of damaged Porcelain Insulators within Forest	DVC
454	132 KV Purnea-Purnea-1	27/01/18	10:00	27/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
455	400KV D/C FKK KAHALGOAN CKT III & IV	27/01/18	08:00	28/01/18	17:00	ODB	POWERGRID ER-I	CONSTRUCTION OF 400KV RJT-PRN LINE	
456	220 KV Bus-I at Patna	27/01/18	09:00	27/01/18	18:00	ODB	POWERGRID ER-I	AMP	
457	220KV New Melli- JLHEP line-2 (Bay-206)	27/01/18	08:30	27/01/18	17:30	ODB	ER-II	206 Bay AMP works	
458	Main Bay-413 of 400KV Bus Reactor-I	27/01/18	09:00	27/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
459	Tie Bay-414 of 400KV Bus Reactor-I&Future	27/01/18	14:00	27/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
460	400kV Side ICT-4 Main Bay (419) at Angul	27/01/18	10:00	27/01/18	16:00	ODB	Angul SS	AMP Work.	
461	400kV Rengali-Keonjhar Tie Bay-401 at Rengali	27/01/18	09:00	31/01/18	17:00	OCB	ER-II/Odisha	For CB Mechanism overhaulling work and AMP.	
462	315 MVA ICT#1 MAIN BAY (BAY NO.-424)	27/01/18	09:00	27/01/18	18:00	ODB	ROURKELA	AMP WORK.	
463	315MVA ICT-I	27/01/18	09;00	27/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement on 220 kV Side	
464	400kV Allahabad_Future Tie Bay @ Pusauli	28/01/18	09:00	30/01/18	18:00	OCB	POWERGRID ER-I	For Breaker Drive overhauling and Bay AMP work	
465	BkTPP: 400kv MB#2	28/01/18	07:00	30/01/18	16:00	ODB	WB	MAINTENANCE WORK	
466	ABG:400KV MB 2 WITH B/C	28/01/18	06:00	28/01/18	15:00	ODB	WB	MAINTENANCE WORK	
467	Main Bay-416 of 400KV Bus Reactor-II	28/01/18	09:00	28/01/18	13:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
468	Tie Bay-417 of 400KV Bus Reactor-II & Future	28/01/18	14:00	28/01/18	18:00	ODB	ER-II/Odisha/Sundergarh	Replacement of Auxiliary switch in 400KV CB	
469	765kV Bus Reactor-1 at Angul	28/01/18	10:00	02/01/18	16:00	ODB	Angul SS	Y-phase Reactor taken in service after Full Gasket replacement.	NLDC
470	400kV Side ICT-4 & Future Tie Bay (420) at Angul	28/01/18	10:00	28/01/18	16:00	ODB	Angul SS	AMP Work.	
471	160 MVA ICT#1 at Baripada	28/01/18	09:00	28/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CT junction Box Replacement on 220 kV Side	GRIDCO
472	132 KV Purnea-Purnea-2	29/01/18	10:00	29/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
473	400 kV Tie Bay of 400 kV BSF-1 & ICT-1) at Lakhisarai	29/01/18	10:00	29/01/18	14:00	ODB	POWERGRID ER-I	AMP	
474	220 KV Khagual bay	29/01/18	09:00	29/01/18	18:00	ODB	POWERGRID ER-I	AMP	BIHAR
475	765/400KV ICT-2 at New Ranchi	29/01/18	08:00	31/01/18	18:00	ODB	POWERGRID ER-I	FOR STATCOM PROJECT (TERTIARY LOADING WORK)	NLDC
476	765 kV 240MVAR Line Reactor-1 at Gaya S/S	29/01/18	08:00	29/01/18	18:00	ODB	POWERGRID ER-I	For Commissioning of HVW spray system	NLDC
477	400 KV Bus Coupler AT MALDA	29/01/18	08:00	29/01/18	16:00	ODB	ER-II	AMP	
478	Bus coupler (Bay-209) AT NEW MELLI	29/01/18	08:30	29/01/18	17:30	ODB	ER-II	209 Bay AMP works	
479	400 KV BUS# I	29/01/18	07:00	29/01/2018	18:00	OCB	TSTPP	Hot spot attend of meramundali 1&2 Bus Isolator and jumper change, in case of emergency meramundali Bus Isolator to be change & Annual O/H	
480	400 kV Jeypore-Indravati S/C Line	29/01/18	08:00	30/01/18	18:00	ODB	ER-II/Odisha /Jeypore	For Replacement of PID Defective Insulators in Jey-Ivt Line	NLDC
481	765kV Side of ICT-4 Main Bay (713) at Angul	29/01/18	09:00	29/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
482	400KV RANCHI#1-SUNDARGARH#2 TIE BAY (BAY NO.-429)	29/01/18	17:30	29/01/18	18:00	ODB	ROURKELA	AMP WORK	

483	50MVAr Reactor of keonjhar at baripada end	29/01/18	09:30	29/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	AMP works	
484	220 KV Birpara- New Siliguri ckt-I	29/01/18	09:00	29/01/18	17:00	ODB	ER-II	Jumper tighening & Maintanace work	
485	220/132KV 160 MVA ICT-3 AT PURNEA	30/01/18	10:00	30/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
486	220 KV Fatuha bay at Patna	30/01/18	09:00	30/01/18	18:00	ODB	POWERGRID ER-I	AMP	
487	765 kV 240MVAR Line Reactor-3 at Gaya S/S	30/01/18	08:00	30/01/18	18:00	ODB	POWERGRID ER-I	For Commissioning of HVW spray system	NLDC
488	315 MVA ICT-II AT SUBHASGRAM	30/01/18	08:00	30/01/18	17:30	ODB	ER-II	Installation of new numerical relays and AMP of ICT and bay equipments	WB
489	132kV D/C Rangit-Siliguri	30/01/18	08:30	31/01/18	17:30	ODB	ER-II	TL AMP Works	
490	KGPR:400/220KV 315 MVA TR 1	30/01/18	07:00	30/01/18	15:00	ODB	WB	MAINTENANCE WORK	
491	BkTPP: 315MVA ICT#1	30/01/18	07:00	01/02/18	16:00	ODB	WB	MAINTENANCE WORK	
492	765kV ICT-4 & B/R-2 Tie Bay (714) at Angul	30/01/18	09:00	30/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
493	400KV RAIGARH#2-RANCHI#2 TIE BAY (BAY NO.-420)	30/01/18	09:00	30/01/18	18:00	ODB	ROURKELA	AMP WORK	
494	400 kV Bus-II at Baripada	30/01/18	08:30	30/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	For reconnection of jumpers of GIS BUS-II	
495	220 KV Siliguri - New Siliguri ckt-II	30/01/18	09:00	30/01/18	17:00	ODB	ER-II	Sag adjustment	
496	220/132KV 160 MVA ICT-1 AT PURNEA	31/01/18	10:00	31/01/18	16:00	ODB	POWERGRID ER-I	FOR INSTALLATION OF GIS NEW CONTROL PANEL AT CONTROL ROOM AND TERMINATION FOR ERLDC DATA TRANSMISSION	BIHAR
497	220 KV ICT-I bay at Patna	31/01/18	09:00	31/01/18	18:00	ODB	POWERGRID ER-I	AMP	
498	220 KV Bus Coupler AT MALDA	31/01/18	8:00	31/01/18	15:00	ODB	ER-II	AMP	
499	400/220/33 KV ICT#1 (400 KV BAY-1,2)	31/01/18	09:00	03/02/2018	18:00	OCB	TSTPP	Bay#1 CT Replacement 'y'ph & 'B'ph, Bay#2 CT Replacement 'B'ph & Annual O/H	
500	765kV Bus Reactor-2 Main Bay (715) at Angul	31/01/18	09:00	31/01/18	18:00	ODB	Angul SS	AMP Work.	NLDC
501	400KV RANCHI#1 MAIN BAY (BAY NO.-428)	31/01/18	09:00	31/01/18	18:00	ODB	ROURKELA	AMP WORK.	
502	132 kV 109 BAY (baripada Line main Bay) at Baripada	31/01/18	08:30	31/01/18	17:30	ODB	ER-II/Odisha/BARIPADA S/S	CVT junction Box Replacement	
503	132kV S/C Rangit-Rammam	01/02/18	08:30	01/02/18	17:30	ODB	ER-II	TL AMP Works	WB
504	Rangit-Rangpo & Siliguri-Melli ckt of 132kv D/C Rangit-Siliguri TL(LILO)	02/02/18	08:30	02/02/18	17:30	ODB	ER-II	TL AMP Works	SIKKIM
505	220kV Powergrid-OPTCL-II Bay (Bay No-207) at Renga	02/02/18	09:00	03/02/18	17:00	OCB	ER-II/Odisha	For CB Pole overhaulling work and AMP.	
506	400kV D/C Teesta V-New Siliguri	03/02/18	08:30	04/02/18	17:30	ODB	ER-II	TL AMP Works	
507	220kV D/C New Melli-Rangpo	05/02/18	08:30	05/02/18	17:30	ODB	ER-II	TL AMP Works	
508	220kV Bus Coupler Bay (Bay No-204) at Rengali	06/02/18	09:00	07/02/18	17:00	OCB	ER-II/Odisha	For CB Pole overhaulling work and AMP.	
509	400/200kV 315MVA ICT-I at Rengali	09/02/18	09:00	09/02/18	17:00	ODB	ER-II/Odisha	For AMP work.	
510	220kv Budhipadar-Korba S/C Fdr-III	18/12/18	08:00	21/01/18	17:00	OCB	ER-II/Odisha/Sundergarh TLM	For Diversion/ modification of 220kv Budhipadhar -Korba S/C from Loc 29 to 39 and 400Kv D/C Rourkela-Raigarh line II (direct) and 400kv Sundargarh-Raigarh-fdr-II from Location no. 385 to 375 through multi ckt. due to construction of dedicated MGR (Rail Line) on behalf of M/s. OPGC.	NLDC
511	400 Kv BANKA-Biharsarif Line -I	05/01/18	08:00	05/01/18	17:00	ODB	POWERGRID ER-I	For R-phase CB overhauling	
512	Bay no. 410 at Biharsarif	08/01/18	08:00	12/01/18	17:00	OCB	POWERGRID ER-I	Forc CB Mechanism overhaulinh	
513	315 MVA ICT-III at Biharsarif	02/01/18	08:00	04/01/18	17:00	OCB	POWERGRID ER-I	For 06 nos. Bushing replacemnet.	
514	132 kV Pusauli-Karamnasa	04/01/18	08:00	04/01/18	17:00	ODB	POWERGRID ER-I	For Amp and isol. Alignment rectification work at Pusauli	
515	132 kv Pusauli-Dehri	05/01/18	08:00	05/01/18	17:00	ODB	POWERGRID ER-I	For Amp and isol. Alignment rectification work at Pusauli	
516	132 kV main Bua at Pusauli	06/01/18	08:00	06/01/18	17:00	ODB	POWERGRID ER-I	For Amp and isol. Alignment rectification work at Pusauli	
517	315 MVA ICT-I at Rourkela	15/01/18	08:00	15/01/18	18:00	ODB	Odisha Project	To provide LT supply to STATCOM switchyard	
518	50 MVAr B/R-I at Rourkela	01/12/17	08:00	30/12/17	19:00	OCB	Odisha Project	For replacement of 125 MVAr B/R with 125 MVAr Bus Reactor	
519	Farakka-Gokarna-I	27/12/17	09:00	27/12/2017	17:00	ODB	POWERGRID	OPGW construction work	
520	Farakka-Gokarna-I	28/12/17	09:00	28/12/2017	17:00	ODB	POWERGRID	OPGW construction work	
521	Farakka-Malda-I	03/01/18	11:00	03/01/2018	13:00	ODB	ER-II	PMU work	
522	Farakka-Malda-II	03/01/18	14:30	03/01/2018	16:30	ODB	ER-II	PMU work	
523	Farakka-Kahalgaon-I	04/01/18	10:00	04/01/2018	12:00	ODB	ER-II	PMU work	
524	Farakka-Kahalgaon-II	04/01/18	12:00	04/01/2018	14:00	ODB	ER-II	PMU work	
525	Farakka-Kahalgaon-III	04/01/18	15:00	04/01/2018	17:00	ODB	ER-II	PMU work	
526	Farakka-Kahalgaon-IV	05/01/18	10:00	05/01/2018	12:00	ODB	ER-II	PMU work	
527	Farakka-Durgapur-I	05/01/18	12:00	05/01/2018	14:00	ODB	ER-II	PMU work	
528	Farakka-Durgapur-II	05/01/18	15:00	05/01/2018	17:00	ODB	ER-II	PMU work	
529	Farakka-Sagardighi	06/01/18	10:00	06/01/2018	12:00	ODB	ER-II	PMU work	
530	Farakka-Berhampore	06/01/18	12:00	06/01/2018	14:00	ODB	ER-II	PMU work	
531	A/R of 400KV KHARAGPUR-CHAIBASA-I &II	27/12/17	09:00	27/12/17	17:00	ODB	ER-II	OPGW installation work under WBSETCL Consultancy Project	
532	Jeerat -Berhampur	09/01/18	09:00	09/01/18	16:00	ODB	ER-II	changing CT from 1000/1A to 2000/1A as decided in 135th OCC	

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				
1	765kV D'JAIGARH- JHARSUGUDA II	09-Jan-18	09:00	09-Jan-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.	POWERGRID
2	765kV D'JAIGARH-RANCHI I	10-Jan-18	08:00	12-Jan-18	18:00	Daily	WRPC	Replacement of open qaud Line Spacer at more than 173 Span with approx 500Nos. And AR in Non Auto Mode for other ckt	POWERGRID
3	765kV D'JAIGARH-RANCHI I	04-Jan-18	09:00	04-Jan-18	18:00	Daily	WRPC	First time Switching scheme checking of (Non-switachble) B -phase line reactor unit with Spare unit.	POWERGRID
4	765kV D'JAIGARH-RANCHI II	15-Jan-18	09:00	17-Jan-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.	POWERGRID
5	220kV KORBA(EAST)-BUDDHIPADAR III	02-Jan-18	08:00	07-Jan-18	18:00	Cont.	WRPC	For diversion of Line at 345-346 on a/c of IRCON railway Xing.	POWERGRID
6	765kV D'JAIGARH- JHARSUGUDA I	08-Jan-18	09:00	08-Jan-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.	POWERGRID
7	Jeypore-Gazuwaka-1	27-Dec-17	10:00	27-Dec-17	17:00	Daily	SRPC	RTV coating	POWERGRID
8	Pole-2 at HVDC Vizag	23-Dec-17	10:00	23-Dec-17	17:00	Daily	SRPC	For RTV Coating and erection of interrupters after overhauling of CB	POWERGRID
9	Talcher-Kolar HVDC Bipole	06-Jan-18	06:00	07-Jan-18	19:00	Daily	SRPC	Replacement of Grading Electrodes of Valve cooling system performance inprovenment of HVDC system. Replacement of insulators in polluted stretch of HVDC lines.	POWERGRID
10	Talcher-Kolar HVDC Pole-2	09-Jan-18	07:00	09-Jan-18	19:00	Daily	SRPC	Replacement of Grading Electrodes of Valve cooling system performance inprovenment of HVDC system.	POWERGRID
11	400 kV Tala – Siliguri Feeder No. IV	01-Jan-18	09:00	31-Jan-18	17:00	Continuous	BHUTAN	Maintenance of GIS, 400kV XLPE Cable and Pot Head Yard equipment including relay testing	BHUTAN
12	400 kV Tala – Siliguri Feeder No. II	01-Feb-18	09:00	03-Mar-18	17:00	Continuous	BHUTAN	Maintenance of GIS, 400kV XLPE Cable and Pot Head Yard equipment including relay testing	BHUTAN
13	400kV New Siliguri # 1 ,63MVAR Line Reactor	23-Dec-17	09:00	01-Jan-18	15:00	Continuous	NERPC	For replacement of Y-phase bushing	POWERGRID
14	400 kV New Siliguri-Bongaigaon -1	23-Dec-17	09:00	23-Dec-17	15:00	Daily	NERPC	Line shall be out of service for opening and reconnecting of Jumpers for isolating the line reactor.	POWERGRID
15	400 kV New Siliguri-Bongaigaon -1	01/01/18	09:00	01/01/18	15:00	Daily	NERPC	Line shall be out of service for opening and reconnecting of Jumpers for isolating the line reactor.	POWERGRID

Annexure-D4

पावर सिस्टम ऑपरेशन कॉरपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)

पूर्वी क्षेत्रीय भार प्रेषण केन्द्र, 14, गोल्फ क्लब रोड, टालिगंज, कोलकाता 700 033
दूरभाष : 033 2423 5867/5875, फैक्स : 033 2423 5809/5704/5029, ई-मेल : erldc@posoco.in / www.erldc.org
EASTERN REGIONAL LOAD DESPATCH CENTRE, 14, Golf Club Road, Tollygunge, Kolkata - 700 033
Tel. : 033 2423 5867/5875, Fax : 033 2423 5809/5704/5029, E-mail : erldc@posoco.in / www.erldc.org

ERLDC/SS & MIS/2017/VDI/ 5016

Date: 01-12-17

To,

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

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

Sir/ महोदय,

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

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

आपको धन्यवाद,

आपका विश्वस्त / Yours faithfully,

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

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

नई रांची / Ranchi New			जमशेदपुर / Jamshedpur			मुजफ्फरपुर / Muzaffarpur		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
800	772	0.00	432	417	98.33	415	391	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)
420	401	0.02	434	404	41.16	431	387	35.27

राउरकेला / Rourkela			जयपोर / Jeypore			कोडरमा / Koderma		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
421	408	0.48	425	383	0.13	423	398	5.80

मैथन / Maithon			तीस्ता / Teesta			रांगपो / Rangpo		
MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)	MAX	MIN	VDI (% of Time)
423	408	3.44	431	377	7.35	430	397	2.44