# Eastern Regional Power Committee Kolkata-33

# Salient Decisions taken in 89<sup>th</sup> OCC meeting held on 10.09.13

- 1. OCC advised DVC to identify the list of feeders in Maithon-Dhanbad area which can be shedded to avoid the overloading of 220kV Maithon-Dhanbad/Kallyneshwari lines alongwith 2 x315MVA ICTs at Dhanbad. Also the Shift–in-Charge should be given power to disconnect these feeders during over loading situations. DVC agreed.
- 2. MS I/C, ERPC informed that CEA vide mail dated 10.09.2013 has sought supplementary information in respect of DPRs as submitted by ER constituents. The same was circulated to the concerned members in the meeting and all were requested to submit the reply within a week. Members agreed.
- 3. Powergrid has proposed for procurement of four sets of ERS to be kept at Sikkim, Siliguri, Ranchi and Jamshedpur and can be used by any constituents of ER during emergencies. The approximate total cost will be around Rs.32 crore. Pending settlement of cost-sharing among ER constituents, members agreed to the proposal for procurement & endorsed to TCC for further concurrence.

# Status of decisions taken in previous OCC meetings, not yet resolved

SI.	Particulars	Present Status
1	OCC requested to all constituents to take appropriate actions at their end to establish the existing communication system (SCADA) with ERLDC healthy by June 2013 without fail.	ERPC decision is being implemented in majority cases. But, in case of BSPHCL/JSEB, the restoration is far behind the schedule.
2	OCC felt the need of identifying some radial feeders in each of the constituents system which can be disconnected at the direction of ERLDC to prevent overdrawal.	Most of the constituents placed the feeders detail except WBSETCL. ERLDC also identified constituent wise radial feeders which can be disconnected during emergencies. WBSETCL/WBSEDCL informed that for their system apart from UFR feeders it would not be possible to place other feeders dedicated for distress load shedding. Therefore there was no consensus on the lines under WBSETCL/WBSEDCL control area identified by ERLDC for distress load shedding.
3	<ul> <li>a) Testing and calibration of special energy meter in Eastern Region</li> <li>b) Automatic Meter Reading (AMR)</li> </ul>	Powergrid informed that, Testing and calibration of SEMs have been completed in 189 stations out of 307; same for rest of the stations will be completed by 30 <sup>th</sup> November, 2013. Powergrid informed that, survey for AMR completed in 80 stations out of 92; same for rest of the stations will be completed by 30 <sup>th</sup>
4	OCC decided to implement relief through operation of UFR in four stages with total load relief of 3320 MW as per CEA direction.	November, 2013. BSPHCL and CESC implemented. OCC requested all other constituents to implement the scheme immediately. All constituents agreed to complete the scheme by 30th September.
5.	Pollution mapping for Eastern Region Powergrid	Powergrid submitted the work flow chart and list of sites along with the necessary formats to be filled up by the constituents. OCC requested all constituents to fill the formats at the earliest and send it to sksinghpg@yahoo.co.in.

# Minutes of 89<sup>th</sup> OCC Meeting held on 10<sup>th</sup> Sep, 2013 at ERPC, Kolkata

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

## Item no. A.1: Confirmation of minutes of 88<sup>th</sup> OCC meeting of ERPC held on 20.08.13

The minutes were circulated vide letter dated 28.08.13 to all the constituents and also uploaded in ERPC website. No comments were received till date.

Members may confirm the minutes.

#### **Deliberation in the meeting**

*Minutes of 88<sup>th</sup> OCC was confirmed by the members.* 

# PART B

# Item no. B.1: Overloading of 220kV Maithon-Dhanbad/Kallyneshwari lines alongwith 2 x315MVA ICTs at Dhanbad ---ERLDC

It has been observed that specifically during the evening peak hours, the loading of 400/220kV 315MVA ICTs at Maithon at times increase beyond 300MW per ICT due to heavy drawal by DVC from Maithon(PG) S/S. During the above period, loading of 220kV Maithon-Dhanbad D/C and 220kV Maithon-Kallyaneshwari D/C also touches around 115MW per circuit and 185MW per circuit respectively, and had gone even higher at times.

In the month of August, 2013, loading of 2 X 315 MVA, 400/220kV ICTs at Maithon often touched 250 MW per ICT and on 20th, 22nd and 25th August the ICT loadings were of the order of 300MW/ICT. While the peak demand of DVC is around 2500 MW and peak generation is of the order of 3500 MW, generation actually available from stations embedded within the load serving part of DVC (Bokaro-B, CTPS-A, CTPS-B, Waria& Mejia-A) was only of the order of 1200-1500 MW while rest of the generation (Mejia-B, DSTPS and Koderma) are outside this load serving part. Consequently, around 1000-1200 MW power was flowing into the load serving area from the regional ISTS. It needs to be noted that due to the fragmented nature of DVC control area wherein DSTPS, Koderma, Mejia-B are disjointed from the main control area of DVC, the overdrawal by DVC in the main control area is not getting reflected. While the main control area comprising of CTPS, Waria, Mejia, Bokaro 'B' and DVC loads are deficit in generation as mentioned above, the injection from DSTPS, Koderma, Mejia-B were compensating for the overdrawal in the main control area, resulting in no overdrawal by DVC as a whole. Considering that the safe limit of drawal is of the order of 140 MW per ICT and loading of 220kV Maithon-Dhanbad and 220kV Maithon-Kallyneshwari should be restricted to around 110MW per circuit, taking into consideration (n-1) security criterion.

DVC is accordingly requested to take necessary action to prevent such ICT/line over-loadings and violation of n-1 contingency. DVC may also take necessary action to maximize generation availability in the main control area of DVC.

Details of power flows through 2 x315MVA ICTs at Maithon and 220kV Maithon-Kallyneshwari D/C and 220kV Maithon-Dhanbad D/C are circulated in the meeting.

Members may discuss.

## **Deliberation in the meeting**

DVC informed that 220 kV Mejia-Ramgarh and 220 kV Koderma-Giridih lines are under construction and Kodarma-Giridih will be completed within 5-6 months. After charging of these lines the issue will be resolved.

OCC advised DVC to identify the list of feeders in Maithon-Dhanbad area which can be shedded to avoid the ICT/line over-loadings. Also the Shift–in-Charge should be given power to disconnect these feeders during over loading situations. DVC agreed.

#### Item no. B.2: Review of load relief under various stages of UFR

In 87<sup>th</sup> OCC members in line with decision taken by NPC in its 2<sup>nd</sup> meeting, agreed to divide the UFR load relief into four stages with total amount of load relief of 3320 MW.

# Apportionment of UFR actuated load shedding into four stages as agreed by the constituents

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

In 87<sup>th</sup> OCC, It was decided to implement the revised scheme within a month. All constituents agreed to give the feeder wise details within a month by next OCC.

In 88<sup>th</sup> OCC BSEB informed that, the revised scheme has been implemented in their control area with total load relief of 440 MW against 397 MW and submitted the feeder wise details. CSEC also informed that the revised UFR load relief scheme has been implemented. WBSETCL, JSEB also informed that the feeder wise details will be submitted soon. OCC requested all other constituents to implement the scheme immediately and give the feeder wise details to ERLDC/ERPC. Members agreed to give within a week.

Constituents may update the status in respective control area.

## Deliberation in the meeting

WBSEDCL informed that the 80% of the work has already been implemented and it will be completed before Durga Puja.

DVC informed that installation of UFRs for the additional feeders which have been identified as per the revised scheme s under process and will be completed soon. OPTCL and JSEB have submitted the feeder wise detail and agreed to implement the scheme within one month.

All constituents agreed to complete the scheme by 30<sup>th</sup> September.

# Item no. B.3: Grid disturbances in NEW grid on 30<sup>th</sup> and 31<sup>st</sup> July 2012- recommendation of ERPC (Item No. B2 of 81<sup>st</sup> OCC meeting)

In the 23<sup>rd</sup> ERPC meeting it was decided that:

i. More islanding schemes should be planned in Eastern Region for ensuring adequate start up power during such large scale disturbance.

## Islanding Scheme of FSTPP, NTPC

In line with decision taken in 86<sup>th</sup> OCC, a separate meeting was convened on 22<sup>nd</sup> July, 2013 at ERPC, Kolkata for finalization of the details for implementation of the scheme. The MOM of the meeting is circulated in the meeting.

In 88<sup>th</sup> OCC JSEB informed that action has already initiated from their end and assured to complete the implementation from their end by 31<sup>st</sup> December, 2013 in line with decision made in separate meeting on islanding scheme of FSTPP held on 22<sup>nd</sup> July, 2013. OCC advised JSEB to update their status to ERPC regularly.

Concerned member may update the status.

#### **Deliberation in the meeting**

OCC in line with direction of 24<sup>th</sup> TCC/ERPC and in continuation of its subsequent decisions in various deliberations again advised FSTPP and JSEB to initiate the implementation of the islanding scheme and complete within timeframe.

JSEB informed that, M/s AREVA has been requested to visit Dumka & Lalmatia for assessment of material requirement and cost estimation for establishing communication link.

In 88<sup>th</sup> OCC meeting, DVC informed that, Islanding Scheme of DVC as a whole has been finalized from DVC end, but not yet authorized by DVC corporate office. The same would be done shortly.

DVC may update the status.

#### **Deliberation in the meeting**

DVC informed that it is still under observation at their corporate office.

ii. All concerned stakeholders should take immediate measures to ensure total SCADA data availability to ERLDC.

It was directed that all utilities should take appropriate actions at their end to establish the existing communication system (SCADA) with ERLDC healthy by June 2013 without fail.

In 88<sup>th</sup> OCC POWERGRID updated the following status of RTUs whose priority list was given:

List of RTU supplied under ULDC Project but data is faulty/ intermittent:

SL no	Name of Utility	kV	Name of station	Reason for not reporting	Status as on 20-08-2013
1	WBPDCL	400	Sagardighi TPS	RTU data is very intermittent Voltage data not available, MW and MVAR intermittent.	WBPDCL informed that problem has been rectified. ERLDC informed that, RTU is reporting satisfactorily.
1	DVC	220	220 KV CTPS - B ( 2 x 250 MW)	Except bus kV & Isolator status other data's are available.	RTU available, DVC
2		400	DSTPS	GT data is not updating properly.	consulting vendors for rectification.
3		400	Mejia –B	Unit data not provided. Fine tuning required.	

List of additional elements/feeders whose data is not available - station under ULDC project:

SL no	Name of Utility	KV	Name of station	Reason for non reporting	Status as on 20-08-2013
1	NTPC	400	400 kV Farakka : (3x 200 + 2 x 500 MW)	GT -3 MVAR not available.	NTPC informed that respective transducer has been changed. The data will be available now.
2	OPTCL	220	220 KV Vedanta ( 9 x 135 MW)	No status points are available.	OPTCL informed Vedanta has taken up the matter with ABB and will resolve the problem within 2 months.
3	WBSETCL	220	DPL	Unit -7 data never reported to SLDC.	WBSETCL informed that vendor has been finalized. OCC advised WBSETCL/DPL to pursue the case urgently with a feedback before next OCC.

Members may update the status.

## **Deliberation in the meeting**

The updated status as updated by the concerned members is as given below:

List of RTU supplied under ULDC Project but data is faulty/ intermittent:

SL no	Name of Utility	kV	Name of station	Reason for not reporting	Status as on 10.09.2013
1	WBPDCL	400	Sagardighi TPS	RTU data is very intermittent Voltage data not available, MW and MVAR intermittent.	RTU is reporting satisfactorily.
1	DVC	220	220 KV CTPS - B ( 2 x 250 MW)	Except GT MW & line flow no data available	DVC informed that it will be rectified during up gradation of SCADA scheme and will be completed by March, 2014.
2		400	DSTPS	U #1: MW, MVAR & Bus kV not available. Voltage and Frequency data not updating	DVC informed that it will be
3		400	Mejia –B	Except Voltage & frequency data rest data available.	resolved shorly.

List of additional elements/feeders whose data is not available - station under ULDC project:

SL no	Name of Utility	KV	Name of station	Reason for non reporting	Status as on 10.09.2013
1	NTPC	400	400 kV Farakka : (3x 200 + 2 x 500 MW)	GT -3 MVAR not available. MW,MVAR of primary(LV) side of All GT is not	GT -3 MVAR data is available. NTPC has agreed to provide the primary (LV) side of GT data for technical requirement of ERLDC

				available.	
		400	400 kV Kahalgaon STPS : (4X 210 + 3X 500 MW) primary (LV) side of GT is not available.	MW, MVAR oF primary (LV) side of All GT is not available.	NTPC has agreed to provide the primary (LV) side of GT data for technical requirement of ERLDC
2	OPTCL	220	220 KV Vedanta ( 9 x 135 MW)	No status points are available.	OPTCL informed Vedanta has taken up the matter with ABB and the problem will be resolved by December, 2013.
3	WBSETCL	220	DPL	Unit -7 data never reported to SLDC.	WBSETCL informed that order placed to Powergrid and will be completed by end of October, 2013.

# A. Non availability of Telemetry of BSEB Substation: -

In last OCC BSPHCL and Powergrid updated the station wise status as given below:

S/n	Name of	BSPHCL action plan for RTU supplied during ULDC project
	RTU	and restoration by June 2013
	locations	
1	Khagaul RTU	BSPHCL informed that, earlier it was expected that after getting
		OPGW link at Sirpara, BSPHCL could provide PLCC panel w.r.t.
		Khagaul GSS. But, plan did not finalize yet. So, BSPHCL is now
		planning for GPRS telemetry option. BSPHCL informed that
		estimate for GPRS has been received from Powergrid and it will
		be confirmed soon.
2	Koshi	BSPHCL informed that, PGCIL is not in a position to provide
		OPGW on priority basis. Hence, PGCIL suggested resolving the
		issue with GPRS. BSPHCL informed that estimate for GPRS has
	_	been received from Powergrid and it will be confirmed soon.
3	Purnea	BSPHCL informed that, PGCIL is not in a position to provide
		OPGW on priority basis. Hence, PGCIL suggested resolving the
		issue with GPRS. BSPHCL informed that estimate for GPRS has
	<u> </u>	been received from Powergrid and it will be confirmed soon.
4	Barauni	BSPHCL required PDH MUX at BIPS from POWERGRID for
	122	RIU restoration. However, POWERGRID further informed that
		chifting the DLCC penals of Desculi(DC) to Cove (DC) to make
		through the Debri Bodhgaya link
5	Dobri	RSDUCL required DDU MUX at RTDS from DOWERGRID for
5	Denn	RTIL restoration However POWERGRID further informed that
		they don't have any snare PDH/MUX_BSPHCL is now working on
		shifting the PLCC panels of Pasauli(PG) to Gava (PG) to make
		through the Dehri-Bodhgaya link. Expected to be completed by
		30 <sup>th</sup> June, 2013, BSPHCL informed that tower has been
		collapsed.
6	Kamarnasa	BSPHCL informed that, PGCIL is not in a position to provide
-		OPGW on priority basis. Hence, PGCIL suggested resolving the
		issue with GPRS. BSPHCL informed that estimate for GPRS has

		been received from Powergrid and it will be confirmed soon.
7	Sultanganj	RTU is reporting to SLDC.

BSPHCL and Powergrid may update the status.

## **Deliberation in the meeting**

BSPHCL and Powergrid updated the station wise status as given below:

S/n	Name of	BSPHCL action plan for RTU supplied during ULDC project
	RIU	and restoration by June 2013
	locations	
1	Khagaul RTU	Powergrid and BSPHCL informed that, integration of RTUs
2	Koshi	through GPRS scheme is under tendering stage and is expected
3	Purnea	to be awarded by end of Sep, 2013. The same will be
4	Kamarnasa	implemented within in two months after award.
5	Barauni TPS	Powergrid and BSPHCL informed that, RTU will be integrated as an immediate measure through GPRS scheme. However, PDH MUX is not available at BTPS as per earlier scheme, PLCC link of Barauni-Hazipur has to be made healthy by BSPTCL for permanent arrangement.
6	Dehri	BSPHCL required PDH MUX at BTPS from POWERGRID for RTU restoration. POWERGRID informed that they don't have any spare PDH/MUX. The PLCC panels of Pasauli(PG) have been shifted to Gaya (PG) and Dehri-Bodhgaya link made operational. In addition BSPTCL requested Powergrid for OPGW rectification of Biharshariff-Bhodgaya & Biharshariff-Barauni. Tendering has been done and price bid has been opened. Work is expected to be completed by Sep, 2013.
7	Sultanganj	RTU is reporting to SLDC.

## B. Non availability of Telemetry of JSEB Substation:

In last OCC JSEB and Powergrid updated the station wise status as given below:

S/n	Name of RTU Locations	JSEB action plan for RTU supplied during ULDC project and restoration.
1	Ramchadrapur RTU	JSEB informed that there is problem in PLCC link between Chandil – Ramchadrapur. AMC to M/s PUNCOM for PLCC link is under process.
2	Jamtara RTU	JSEB informed that, RTU has been shifted to new control room and requested Powergrid to reintegrate the feeders in RTU as integration of additional feeder (new element) in the existing RTU. Work order is to be placed to POWERGRID for which file is under process.
3	Deoghar RTU	JSEB informed that RTU will report after rectification of Deoghar –Jamtara PLCC link. AMC to M/s PUNCOM for PLCC link is under process.
4	Garwarah RTU ,	JSEB informed that RTU may report after it get connected from Ranchi end through Hatia-Loherdaga-Latehar- Daltanganj – Garwah transmission line.
5	Patartu RTU	JSEB informed that, reporting of RTU is frequently interrupted because of frequent damages in UGFO. POWERTEL looking after the maintenance of this link. Presently link is healthy and working.

6	Tenughat RTU	JSEB informed that, there may be problem in co-axial cable from switchyard to carrier room which has been replaced now. But PLCC link could not be made up. Also, there may be problem in LMU/LMDU, the replacement of which requires shutdown of
		PTPS-TTPS line. AMC to PUNCOM for restoration of PLCC link is
		also under process.

JSEB & Powergrid may update.

## **Deliberation in the meeting**

JSEB and Powergrid updated the station wise status as given below:

S/n	Name of RTU Locations	JSEB action plan for RTU supplied during ULDC project and restoration.			
1	Ramchadrapur RTU	JSEB informed that there is problem in PLCC link between Chandil – Ramchadrapur. AMC to M/s PUNCOM for PLCC link is under process. Work order is likely to be placed soon.			
2	Jamtara RTU	JSEB informed that, RTU has been shifted to new control room and requested Powergrid to reintegrate the feeders in RTU as integration of additional feeder (new element) in the existing RTU. Work order is to be placed to POWERGRID for which file is under process.			
3	Deoghar RTU	JSEB informed that RTU will report after rectification of Deoghar –Jamtara PLCC link. AMC to M/s PUNCOM for PLCC link is under process. Work order is likely to be placed soon.			
4	Garwarah RTU ,	JSEB informed that RTU may report after it get connected from Ranchi end through Hatia-Loherdaga-Latehar- Daltanganj – Garwah transmission line.			
5	Patartu RTU	JSEB informed that, reporting of RTU is frequently interrupted because of frequent damages in UGFO. POWERTEL looking after the maintenance of this link. It was informed that UGFO link is damaged at 2-3 points within one Km. span and POWERTEL has suggested to hang the cable on 11 kV pole in the effected portion for restoration of the link. Work will be taken up as soon as shutdown is allowed for the line.			
6	Tenughat RTU	JSEB informed that, PLCC link could not be made up even after replacement of co-axial cable. There may be problem in LMU/LMDU, the replacement of which requires shutdown of PTPS-TTPS line. Due to break down of 220 kV TTPS-B'shariff line shutdown is not being allowed. AMC to PUNCOM for restoration of PLCC link is also under process. Work order is likely to be placed soon.			

In 88<sup>th</sup> OCC Sikkim and Powergrid updated the status as given below:

S/n	Name of RTU Locations	SIKKIM action plan for RTU supplied during ULDC project and restoration.
1	Melli 132 KV	E & PD Sikkim informed list of priority RTU has been given to Powergrid and RTU would report by Sep, 2013.

Sikkim & Powergrid may update.

## **Deliberation in the meeting**

Sikkim and Powergrid updated the status as given below:

S/n	Name of RTU Locations	SIKKIM action plan for RTU supplied during ULDC project and restoration.		
1	Melli 132 KV	Powergrid informed that RTUs are under manufacturing and will be completed by Nov, 2013.		

In 88<sup>th</sup> OCC OPTCL updated the status as given below:

S/n	Name of RTU Locations	OPTCL action plan for RTU supplied during ULDC project and restoration by June 2013.
1	Nalco	Work has been awarded and wiring is in progress. RTU will be commissioned by January, 2014.
2	Machkund HPS	OPTCL informed that Machkund HPS RTU will be commissioned by 31 <sup>st</sup> August, 2013.

OPTCL may update

## **Deliberation in the meeting**

OPTCL updated the status as given below:

S/n	Name of RTU Locations	OPTCL action plan for RTU supplied during ULDC project and restoration by June 2013.
1	Nalco	Work has been awarded and wiring is in progress. RTU will be commissioned by January, 2014.
2	Machkund HPS	OPTCL informed that RTU will be commissioned by end of September, 2013.

## Item no. B.4: Reliability of Auxiliary power supply in the stations of POWERGRID :

For the auxiliary power of the substations, power at 11kV is being taken from SEBs through dedicated feeder.

The reliability and availability of the auxiliary power in the following stations under BSPTCL & JSEB control area is very poor. The auxiliary power position wise is as under:

SI.	Name of Station	% reliability of auxiliary	No. of trippings per day
No.		supply	
01.	Biharshariff 400/220kV S/S	15%	5-6 times
02.	Patna 400/220kV S/S	20%	50-60 times
03.	Muzaffarpur 400/220kV S/S	70%	40-50 times
04.	Ara 220 /132kV S/S	80%	25 times
05.	Jamshedpur 400/ 220kV	30%	4-5 times
	S/S		
06.	Ranchi 400/220kV S/S	80% (Quality of supply is very	
		poor, voltage is low 380-390	
		V)	

The substations of POWERGRID are connected with high capacity inter- regional transmission lines in addition to the power fed to the beneficiaries through the inter- connecting transformers.

In 87<sup>th</sup> OCC BSPTCL informed that the matter has been taken up with MD, Discom to make available reliable power to Powergrid S/S.

Powergrid informed that as per Gazette notification Part-III, section-IV dated 09/03/2007, availability of two (2) independent source of Auxiliary power supply is required for 220 kV and above S/S. In compliance with the same following is the status:

Single Aux. supply source is available at following Sub-stations:

- a) Silliguri
- b) Malda
- c) Birpara
- d) Dalkhola
- e) Rourkela
- f) Keonjhar
- g) Jharsuguda
- h) Angul

Concerned utilities/SEB may please provide second dedicated source of supply. Further, existing HT feeders which are feeding power to station are being tapped for the supply in nearby rural areas.

In 88<sup>th</sup> OCC, OCC advised Powergrid to write letters to concerned utility in line with the OCC decision with a copy to ERPC/ERLDC for further effective persuasion. However BSPHCL representative assured firm supply for the purpose.

Concerned utilities may update the status.

#### **Deliberation in the meeting**

Bihar informed that it will be resolved within a week. JSEB also assured to take up the matter at the earliest. OCC advised Powergrid ER-II to take up the matter with other constituents also for ensuring the dedicated source of auxiliary power.

# Item no. B.5: Retrofitting of pilot wire protection of 132 kV Purnea(PG)-Purnea(BSPHCL) feeders - Powergrid

There are 04 nos. 132KV feeders to BSEB form 220/132KV Purnea Substation. 03 nos. feeders (line length at around 1Km) are connected to nearby Purnea 132/ 33KV Substation and 01 no. feeder (line length around 72Km) is connected to Kishenganj 132/ 33KV Substation.

For the 132KV Purnea-Purnea feeders, pilot wire protection had been provided as a main protection and Directional O/c E/F protection has been provided as a back up protection. Due to regular theft of pilot wire between the two stations, the pilot wire protection is in in-operative condition for these feeders. As such the relays provided in these feeders are also very old and obsolete. For reliability of power supply, it is proposed to retrofit the pilot wire protections with numerical type current differential protection relays through fiber optic link between Purnea (POWERGRID) and Purnea (BSPHCL). Further the old directional over current, earth fault relays and the trip relays are also required to be replaced with suitable numerical type relays/ new relays.

The relays connected in Kishenganj feeder are also very old and obsolete. These relays are also required to be replaced with suitable numerical type / new relays.

For replacement of these relays along with fiber optic link between Purnea (POWERGRID) and Purnea (BSPHCL), total cost involvement will be around 60 lacs.

In 88<sup>th</sup> OCC, members agreed in principle for the proposal. OCC referred the issue to 24<sup>th</sup> commercial meeting scheduled to be held on 28<sup>th</sup> August, 2013 at ERPC, Kolkata for deliberation/information on cost estimation details. Further the issue would be placed in TCC/ERPC meeting for final approval.

In recently concluded Commercial Committee meeting the cost has been agreed to. Now the issue will be placed before TCC/ERPC for final concurrence.

Members may Note.

## Deliberation in the meeting

OCC decided to refer the issue to TCC/ERPC for further concurrence with a time schedule of 6-8 months for implementation of the scheme.

Item no. B.6: (Item No. B1 of 84<sup>th</sup> OCC meeting)

#### a) Testing and calibration of special energy meter in Eastern Region--Powergrid

In 88<sup>th</sup> OCC Powergrid updated the latest status as given below:

- Total special energy meters in Eastern Region: 307
- Testing and calibration Completed: 179
- Expected date of completion: 30<sup>th</sup> November, 2013

## Deliberation in the meeting

Powergrid updated the latest status as given below:

Testing and calibration Completed: 189

65

80

• Expected date of completion: 30<sup>th</sup> November, 2013

## b) Automatic Meter Reading (AMR) -- Powergrid

In 88<sup>th</sup> OCC Powergrid updated the latest status as given below:

- Total stations in Eastern Region: 92
- Survey Completed:
- Expected date of completion: 30<sup>th</sup> November, 2013

Server installation at ERLDC, Kolkata is in progress.

Powergrid may update the latest status.

#### Deliberation in the meeting

Powergrid updated the latest status as given below:

- Survey Completed:
- Expected date of completion: 30<sup>th</sup> November, 2013

## Item no. B.7: Evacuation arrangement of DSTPS and Mejia B - ERLDC

In 87<sup>th</sup> OCC DVC informed that DSTPS-Ragunathpur line was synchronised from DSTPS end on 16<sup>th</sup> July, 2013 (at 19:20 Hrs) and Ragunathpur-Ranchi line would be completed by Sep'13.

In 88<sup>th</sup> OCC DVC informed the Ragunathpur-Ranchi line will be completed by Sep'13.

Powergrid and DVC may update the status.

#### Deliberation in the meeting

DVC informed that Ragunathpur-Ranchi line will be completed by December'13.

Item no. B.8: Bus strengthening at Malda and Birpara consequent to augmentation of transformation capacity at North Bengal – ERLDC (Item No. B2 of 82<sup>nd</sup> OCC meeting)

In 88<sup>th</sup> OCC WBSETCL informed that, bus strengthening at Birpara has been completed and the same at Malda would be completed after Puja.

WBSETCL may update the latest status.

#### **Deliberation in the meeting**

WBSETCL informed that work of bus strengthening at Malda will be started after Puja and expected to be completed within December, 2013.

# Item no. B.9: Commissioning of 220 kV bus bar protection at Ramchandrapur & Chandil substations (JSEB) – (Item No. B13 of 22<sup>nd</sup> TCC meeting)

In 86<sup>th</sup> OCC JSEB informed that, LBB has been provided in Chandil GSS as per committee report. For Ramchandrapur GSS work has been delayed as CTs are not available and it is under procurement process in headquarter. As such completion date is not certain. OCC advised JSEB to come with concrete action plan and target date by next OCC.

In 88<sup>th</sup> OCC JSEB informed that, CT is made available at Ramchandrapur GSS and bus bar protection would commission by 30<sup>th</sup> September, 2013. JSEB also informed that, LBB has been provided at Chandil S/s but not wired. OCC advised JSEB to make LBB operational at the earliest as per recommendation of the protection committee. JSEB agreed.

JSEB may update the latest status.

#### **Deliberation in the meeting**

JSEB informed that the bus bar protection at Ramchandrapur GSS will be commissioned by September, 2013. Regarding LBB operationalization at Chandil GSS, JSEB informed that the work as per recommendation of the committee has been completed; however, due to some additional pending work at Chandil the same could not be put in operation.

OCC advised JSEB to put the LBB in operation wherever the job is already completed.

OCC refer the issue for further deliberation in PCC meeting scheduled to be held on 11.09.2013.

#### Item no. B.10: Procurement of spare transformers by Powergrid

The procurement of following spare transformer and reactors by Powergrid as a part of disaster management plan in Eastern Region has been discussed and approved in various ERPC meetings (13<sup>th</sup> to 18<sup>th</sup> meeting):

- 4 number 400/220 kV, 315 MVA transformers
- 2 number 220/132 kV, 160 MVA transformers
- One 132/66 kV, 50 MVA transformer
- One 80 MVAR shunt reactor

In 88<sup>th</sup> OCC Powergrid updated the latest status a given below:

- 315 MVA spare transformers at Biharshariff and Jamshedpur were already installed, while the same at Durgapur and Rourkella were already reached the site.
- One 80 MVAR reactor at Rourkella was already commissioned.
- 1 number of 150/160 MVA, 220/132 kV ICTs of Baripada is being diverted to Purnea.
- o 1 number of 160 MVA, 220/132 kV ICT at Siliguri was already commissioned.
- 1 number of 50 MVA, 132/66 kV ICT of Gangtok is at Siliguri. Unable to dispatch to Gangtok due to road clearance problem.

Powergrid may update the latest status.

#### **Deliberation in the meeting**

Powergrid updated the latest status as given below:

- 315 MVA spare transformers at Biharshariff and Jamshedpur were already installed, while the same at Rourkella was already reached the site. The 315 MVA spare transformer installed at Durgapur has been diverted to Farakka to replace the failed ICT of NTPC, Farakka. The ICT will be reaching the site by 11.09.2013.
- One 80 MVAR reactor at Rourkella was already commissioned.
- 1 number of 150/160 MVA, 220/132 kV ICTs of Baripada was diverted to Purnea and commissioned on 02.08.2013.
- 1 number of 160 MVA, 220/132 kV ICT at Siliguri was already commissioned.
- 1 number of 50 MVA, 132/66 kV ICT of Gangtok is at Siliguri. Unable to dispatch to Gangtok due to road clearance problem.

#### Item no. B.11: Tripping of lines due to suspected PLCC problem

In the past tripping of 400kV Durgapur(PG)-Bidahnnagar(WB) was reported on several occasions, due to receipt of DT at Bidhannagar(WB) end from Durgapur(PG) end. Due to generation of spurious trip signals from Durgapur(PG) end, the line had to be taken into service without PLCC for a short duration and subsequently shutdown of the line was taken and the PLCC restored. WBSETCL may provide confirmation regarding above.

Similarly, repeated tripping of 400kV GMR-TSTPP has occurred due to suspected PLCC problem between TSTPP and GMR. On 08/07/13 and 09/07/13, as per report from GMR the line had tripped due to receipt of direct trip from TSTPP end. It has been reported that PLCC for the above section is maintained by OPTCL. TSTPP/GMR/OPTCL may intimate the reasons for repeated tripping of the line and the latest PLCC status.

It may be noted that both the above lines are important lines, tripping of which have the potential to cause grid disturbances.

In 88<sup>th</sup> OCC WBSETCL informed that, matter has been taken up and will be resolved by end of August, 2013.

NTPC informed that, PLCC at TSTPP end is the property of OPTCL. OPTCL agreed to look into it and resolve the problem. GMR informed that, they are inspecting PLCC panels at their end and it will be resolved within a week time.

WBSETCL, OPTCL and GMR may update the status.

## **Deliberation in the meeting**

WBSETCL informed that the PLCC problem of 400kV Durgapur(PG)-Bidahnnagar(WB) line has been resolved.

OPTCL clarified that PLCC at both TSTPP and GMR are the property of GMR and it is being maintained by them. GMR informed that the PLCC panels were rectified in August, 2013 and after that no suspected tripping has been observed.

# Item no. B.12: Heavy loading of 315MVA ICTs at Jeypore and 220KV Jaypore-Jaynagar D/C line & Over Loading of 315MVA ICT at Muzaffarpur

It has been observed that during June 13, the 400/220KV, 315MVA ICTs at Jeypore carried power to the extent of 150MW per ICT. With increase of generation from Balimela & U. Kolab hydro stations in Odisha in July, coupled with enhancement of export to SR through HVDC Gazuwaka, the loading of each of the ICTs is touching 200MW almost on daily basis. As (N-1) security criteria is being violated for there ICTs, it is felt that capacity augmentation of 400/220KV ICTs at Jeypore may be taken up by PGCIL, and the existing 220KV Jeypore-Jaynagar D/C line be strengthened by constructing a 2nd D/C line

It has been observed that 315MVA ICTs at Muzzafarpur are loaded to the levels of 200 MW or more per ICT, many a times it even touched 230 MW. Thus n-1 compliancy is not there. Hence, it is felt that augmentation of 400/220KV ICT capacity at Muzzafarpur ICT may please be expedited.

In 87<sup>th</sup> OCC OPTCL informed that the construction of another 220 kV D/C Jeypore-Jaynagar line is not possible at this stage and hence they may go for generation backing down in that area. The OCC advised OPTCL to plan a SPS for backing down of their generation to fulfill the (N-1) criteria and also to provide over current settings of above said line to ERLDC. Till the implementation of SPS, OPTCL will go for proper load management in the affected area so that per circuit flow never goes beyond 160MW.OPTCL agreed.

Powergrid informed that the DPR for augmentation of 400/220 kV ICT at Muzaffarpur is in approval stage.

Thereafter, OPTCL informed vide letter dated 03.08.2013 the construction of second 220 kV D/C Jeypore-Jaynagar line has already been taken up by OPTCL and it is under process.

In 88<sup>th</sup> OCC OPTCL informed that, construction of second 220 kV D/C Jeypore-Jaynagar line is in process and it would take one year.

ERLDC informed that, OPTCL is maintaining the load below 160 MW per circuit as per 87<sup>th</sup> OCC decision. OCC advised OPTCL to continue designing an SPS as was earlier decided and place the same before OCC for final deliberation. OCC also advised OPTCL to maintain the load in the affected region till the second line comes. OPTCL agreed.

OPTCL and Powergrid may update the status.

## **Deliberation in the meeting**

OPTCL informed that, construction of second 220 kV D/C Jeypore-Jaynagar line is in process and it will be completed in a year.

ERLDC informed that Balimela and U. Kolab generation is contributing the sensitivity factor of the order of 30-40 % for loading of 220 kV D/C Jeypore-Jaynagar line. Therefore, OPTCL may plan for regulation of generation in Balimela and U. Kolab Stations during overloading of the said line.

OPTCL informed that the situation can be improved by putting two units of Indravati in the 400 kV grid. OPTCL requested OCC to design the SPS for said line and same can be discussed for implementation. OCC requested ERLDC to design a SPS for OPTCL system and place before next OCC.

# Item no. B.13: 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 2<sup>nd</sup> August, 2013.

In 88<sup>th</sup> OCC, constituents requested for another workshop on this issue. OCC agreed and requested NTPC and CESC to share their scheme in the workshop.

Members may note and comply.

#### Deliberation in the meeting

Members noted.

#### Item no. B.14: Status of "Third Party Protection Audit"

List of the observations along with updated compliances received from the constituents is circulated in the meeting and also made available in ERPC website (**www.eastrpc.org**).

Members may note and ensure compliance on observations.

#### **Deliberation in the meeting**

MS I/C, ERPC informed that CEA vide mail dated 10.09.2013 has sought supplementary information in respect of DPRs as submitted by ER constituents. The same was circulated to the concerned members in the meeting and all were requested to submit the reply within a week. Members agreed.

# Item no. B.15: Identification of feeders for distress load shedding - ERLDC (Item No. B1 of 82<sup>nd</sup> OCC meeting)

Identified constituent wise list of radial feeders which can be disconnected during emergencies are circulated in the meeting.

Members may update the status.

#### **Deliberation in the meeting**

WBSETCL/WBSEDCL informed that for their system apart from UFR feeders it would not be possible to place other feeders dedicated for distress load shedding. Therefore there was no consensus on the lines under WBSETCL/WBSEDCL control area identified by ERLDC for distress load shedding.

Item no. B.16: Collection of Daily Energy Data – ERLDC (Item No. B4 of 82<sup>nd</sup> OCC meeting)

In 88<sup>th</sup> OCC ERLDC informed that, all constituents are sending the relevant information. However, WBSETCL has to give consolidated data as per the prescribed format.

JSEB informed that, Tisco and Jusco raised several queries and those queries have been replied. Action from Tisco and Jusco is awaited. OCC requested JSEB to pursue the issue.

ERLDC may update the latest status.

JSEB may update on status of monitoring Tisco and Jusco.

## **Deliberation in the meeting**

OCC requested WBSETCL to give station wise data. WBSETCL agreed.

JSEB informed that, response from Tisco and Jusco is awaited. OCC requested JSEB to pursue the issue.

# Item no. B.17: Submission of Grid Incidence Report as per specified format - ERLDC (Item No. B3 of 80<sup>th</sup> OCC meeting)

It has been observed that grid incidence reports though being submitted in the prescribed format are not furnished properly as they are not accompanied by relay indications or supported by proper analysis and are without DR/EL printouts. Also, in case of disturbance, ERLDC is issuing messages asking for DR/EL printouts with full relay indications, and such data are sometimes not received properly or are time delayed.

Accordingly, a list of disturbances that occurred in the month of August,2013 is attached and correspondingly the status and delay in receipt of data from the constituents involved have been compiled and circulated in the meeting.

Constituents from which there is a delayed or incomplete receipt of data as per the list circulated in the meeting are requested to note that they should take necessary action in future to furnish the complete data including DR/EL/tripping analysis, within the stipulated time.

Members may please note and ensure compliance.

#### **Deliberation in the meeting**

OCC requested all constituents to submit the grid incidence report in new format within 24 hours of the incidence. New format is enclosed at **Annexure-B.17**. Constituents agreed.

## Item no. B.18: GT and ICT Tap coordination throughout the Easter Region --- ERLDC

ERLDC compiled the list of GT/ICT Tap position data for ER. Missing and incomplete GT/ICT Tap position data as per available information is circulated in the meeting.

Constituents may update the status.

#### **Deliberation in the meeting**

All constituents agreed to submit the missing information.

## Item no. B.19: Restricted Governor Mode of Operation --- ERLDC

The latest status of units of ER under RGMO is circulated in the meeting.

In View of CERC order on petition no 150/MP/2012, 87<sup>th</sup> OCC advised all eligible generating stations in Eastern Region may therefore take necessary action to ensure that RGMO/FGMO with manual intervention is implemented without further delay.

Members may ensure necessary compliance.

#### **Deliberation in the meeting**

The committee reviewed the status of RGMO/FGMO. The latest status is enclosed at **Annexure-B.19**.

## Item no. B.20: Mock Black start exercises in Eastern Region --- ERLDC

i) The status of blackstart exercises scheduled for June/July13 are given below::

Schedule of the Mock Black start exercises prepared in 85<sup>th</sup> OCC meeting is circulated in the meeting.

Only mock blackstart of Upper Indravati HEP and Maithon HEP could be successfully done. The pending status is as indicated below:

- a) <u>Maithon HEP:</u>Detailed report from DVC has not yet been received.
- b) Rengali HEP: Revised date proposed after October'13
- c) <u>Upper Kolab HEP</u>:Due to non-comissioning of DG set the revised date for the exercise has been given as October, 2013

Members may update the status.

## **Deliberation in the meeting**

The latest status is as given below::

- d) Maithon HEP: Report submitted by DVC.
- e) Rengali HEP: Revised date proposed after October'13
- f) <u>Upper Kolab HEP</u>: Due to non-comissioning of DG set the revised date for the exercise has been given as October, 2013
- ii) Testing of DG sets meant for Black start

Report regarding test run of DG sets for the month of August, 2013 has not been received from any constituent except Rangit. All test reports may be forwarded to <u>erldc.cal@gmail.com&psdas\_psd@yahoo.com</u>.

Constituents may kindly ensure compliance.

## **Deliberation in the meeting**

It was brought to the notice of all members that as per previous decision of OCC if test run report is not submitted by a particular utility, DG set of that utility will be considered as healthy and the onus of healthiness would lie with the utilities. Members noted and agreed to comply.

# Item no. B.21: Schedule/generation restriction for Chuzachen HEP in view of repeated disturbances.

On implementation of SPS, the issue was discussed in 16<sup>th</sup> PCC meeting wherein M/s. Gati Infrastructure Ltd. appraised the house that testing of the SPS of Chuzachen was successfully carried out on 23.07.2013 in the presence of representative from POWERGRID, ERTS – II and Rangit, NHPC. Further functioning of the SPS implemented was explained before the house with a detail presentation.

On the request from Chuzachen to maintain higher generation level from the existing level of 50 MW, PCC considered allowing generation at 75MW i.e - an increase of 25MW. PCC desired that performance of the implemented SPS at Chuzachen would be reviewed at 75 MW generation level for a week and thereafter if there is no constraint, then the station will be allowed to generate maximum at 99 MW.

Post 16<sup>th</sup> PCC, there were several incidents of tripping involving NHPC generators and chuzachen. To resolve the problem a special meeting was convened at ERPC on 16<sup>th</sup> August, 2013.

In 88<sup>th</sup> OCC house was informed that, in the special meeting held at ERPC on 16<sup>th</sup> August, 2013, it was decided to restrict the Chuzachen generation upto 50 MW and also decided to refer the issue to TCC/ERPC meeting for further deliberation.

ERLDC pointed that situation has been improved after Chuzachen generation was restricted upto 50 MW.

ERLDC may update the status.

#### **Deliberation in the meeting**

OCC refer the issue to PCC scheduled to be held on 11.09.2013.

# Item no. B.22: Argumentation of Transformation capacity of 400/220 kV, 315 MVA ICT of Baripada Sub-station. (Item No. B1 of 85<sup>th</sup> OCC meeting)

In 85<sup>th</sup> OCC, OPTCL informed that 400/220 kV, 315 MVA ICT-I & II at New Duburi were idle charged since 27/02/13 and 29/04/13 respectively from 220 kV side. 400 kV connectivity to New Duburi is expected soon. As such, argumentation of ICT capacity at Baripada may not be required. This needs to be reexamined considering commissioning of New Duburi 400 kV/220 kV sub-station.

86<sup>th</sup> OCC advised OPTCL to give the load profile and line configuration details to ERLDC. OCC requested ERLDC to study the load profile and give their views in 87<sup>th</sup> OCC.

In 87<sup>th</sup> OCC ERLDC informed that, load profile and line configuration details are yet to be received from OPTCL. OCC advised OPTCL to give the requisite information. OPTCL agreed.

In recently concluded Standing Committee meeting of ER on 27.08.13 the issue was discussed and it was decided that before any decision of augmentation further analysis is required to be done.

OPTCL and ERLDC may update the status.

## **Deliberation in the meeting**

ERLDC informed that during analysis it was found that after commissioning of New Duburi S/S the load relief achieved for Baripada ICTs will be 30 MW per ICT.

OPTCL informed that further load relief can be achieved after the Bus-splitting at Balasore S/S which is under proposal stage.

OCC advised OPTCL to think for augmentation considering the future load growth of the control area.

#### Item no. B.23: Energy Generation data management from Renewable Energy Sources

As per Electricity Act, 2003, CEA has been entrusted with the task of collecting electricity generation data. CEA is monitoring all the existing generating stations with capacity more than 25 MW (Conventional sources only). In recent years there has been appreciable growth in generation from Renewable Energy Sources (RES).

In view of above it was decided to monitor all the generating stations under RES connected to the grid and also to bring out month wise, state wise and sector wise report on RES generation in MU including peak generation from RES.

CEA already requested to nominate Nodal officers at the level of SLDC for the above purpose. However, only few states have responded. Those SLDCs who have not yet nominated the nodal officers for Energy Generation Data management from RES are requested to furnish the details at following email/Fax:

Email: ceaopmwind@gmail.com with a copy to rishika.engineer@gmail.com and s.sewak@cea.nic.in

Nodal officers from CEA: Mrs. Rishika Sharan, Director, CEA, 011-26732663 and 26102263(Fax), Mobile: 9868021299 Mrs. Sarita Sewak, Dy. Director, 011-26732656

SLDCs may note and nominate their Nodal officers as advised.

In 87<sup>th</sup> OCC members agreed to comply.

Members may note and comply.

#### Deliberation in the meeting

Members noted.

# Item no. B.24: Certification through BIS as per IS 18001:2007 to al generating/transmission units. (Item No. B9 of 84<sup>th</sup> OCC meeting)

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

In 85<sup>th</sup> OCC NTPC informed that, NTPC-Farakka has been certified with IS 18001. Other constituents including OHPC requested to interact with BIS with intimation to ERPC and get certified as per CEA direction. The matter is getting reviewed by highest authorities with top priority.

In 88<sup>th</sup> OCC NTPC informed that, all NTPC stations in Eastern Region are certified with IS 18001. NHPC informed that, Teesta is also certified with IS 18001.

After that, CESC informed that their stations are certified with IS18001.

Members may note and update the status.

#### **Deliberation in the meeting**

OCC requested all other constituents to comply.

#### Item no. B.25: Commissioning of 400kV Baripada-Jamshedpur(Direct)

Presently one circuit of 400kV Baripada-TISCO D/C has been extended to Jamshedpur(PG) to form 400kV Jamshedpur(PG)-TISCO-Baripadackt. The other line has been kept openat TISCO end and is to be extended to Jamshedpur(PG) to form Jamshedpur(PG)-Baripada direct ckt. Pending commissioning of the direct ckt, theloading of 400kV Jamshedpur(PG)-TISCO section remains very high at more than 500MW and the TISCO-Baripada section also remains considerably loaded. To mitigate the transmssion constraint it is essential that 400kV Jamshedpur-Baripada(direct) be put into service at the earliest. Accordingly, Powergrid is requested to intimate the reasons for delay in commissioning of the same along with the expected date of commissioning.

In 88<sup>th</sup> OCC Powergrid informed that there is a problem in right of way and the line will be commissioned by September, 2013.

Powergrid may update.

## Deliberation in the meeting

Powergrid informed that the line will be commissioned by 12<sup>th</sup> September, 2013.

## Item no. B.26: Pollution mapping for Eastern Region -- Powergrid

In 87<sup>th</sup> OCC Powergrid gave a presentation on road map for pollution mapping of Eastern Region and requested to nominate a nodal officer from each constituent to co-ordinate the above programme. The committee requested Powergrid to prepare a detail programme with complete list of sites where the tests are to be carried out along with work-flow diagram. Powergrid agreed to place the details in next OCC for finalization of the procedure.

In 88<sup>th</sup> OCC the details were not suitably placed by Powergrid. So OCC again advised Powergrid to prepare a detail programme with complete list of sites where the tests are to be carried out along with work-flow diagram and place the details in next OCC.

Powergird may place the details.

#### **Deliberation in the meeting**

Powergrid submitted the work flow chart and list of sites along with the necessary formats to be filled up by the constituents (enclosed at **Annexure B.26**). Powergrid was requested to send the soft copy of the same to <u>mserpc-power@nic.in</u> so that the requisite formats could be sent to all concerned members.

OCC requested all constituents to fill the **formats at the earliest and send it to** <u>sksinghpg@yahoo.co.in</u>.

*In case of any query members could contact Shri S. K. Singh, 9434740009 or Shri Virendra Kumar 9434748239.* 

# Item no. B.27: Procurement of Emergency Restoration System (ERS Towers) for Eastern Region constituents-- Powergrid.

In 86<sup>th</sup> OCC members requested PGCIL to give a presentation in next OCC along with cost analysis.

In 87<sup>th</sup> OCC Powergrid gave a presentation for requirement of ERS with cost details.

OPTCL informed that they have procured 32 no. of 132 kV ERS tower. WBSETCL informed that they are also planning to procure ERS towers.

However, OCC felt that in the recent past incidences of tower failures has become an increasingly regular features in Eastern region and therefore in general pool Eastern Region should have adequate nos. of ERS towers for early restoration of snapped towers in case of emergency. OCC advised Powergrid to place the detail list of ERS available for ER under CTU control area and all constituents were requested to give their views in next OCC meeting.

In 88<sup>th</sup> OCC the details were not suitably placed, OCC requested Powergrid to place the requirement of ERS towers along with cost details in next OCC. Powergrid agreed.

Powergrid to place the details and members may discuss.

#### **Deliberation in the meeting**

Powergrid informed that presently in Eastern region there is only two sets of ERS is available at Durgapur and Rourkela which is not adequate to cater emergency situation of Eastern Region. The proposed four sets of ERS will be kept at Sikkim, Siliguri, Ranchi and Jamshedpur which

can be used by any constituents of ER during emergencies. The approximate total cost will be around Rs.32 crore.

Pending settlement of cost-sharing among ER constituents, members agreed to the proposal for procurement & endorsed to TCC for further concurrence.

# Item no. B.28: Procurement of Circuit Breaker, CT, CVT, LA for Eastern Region as O&M spare-- Powergrid.

In 86<sup>th</sup> OCC members requested PGCIL to give a presentation in next OCC along with cost analysis.

In 87<sup>th</sup> OCC Powergrid gave a presentation for requirement of O&M spare. OCC felt that in general pool of ER there should be adequate O&M spare for early restoration. However Powergrid was advised for exploring the possibility of procuring these items through the O&M component of tariff. Members also asked for the population & failure detail of equipments. Powergrid agreed to update their positions along with all these details in next OCC meeting. OCC also advised all constituents to give their comments on the issue in next OCC meeting.

In 88<sup>th</sup> OCC several queries were raised on possibilities of procurement of these items through O&M components of tariff. OCC requested Powergrid to place all the details to constituents clarifying the positions beforehand so that valued comments from respective constituents could be effectively deliberated in next OCC. Powergrid agreed. Constituents agreed to give their comments positively before next OCC.

Powergrid /constituents may update respective position.

#### **Deliberation in the meeting**

OCC advised Powergrid to interact with constituents to the satisfaction of their various queries and subsequently it could be placed again in OCC for further deliberation. Powergrid agreed.

#### Item no. B.29: Reactive Power performance of Generators

a) Review of reactive power generation/drawal of generators vis-à-vis 400kV station bus voltage of units

Maximum and minimum voltage observed (data taken from SCADA) Generating stations have been monitored for sample dates in the month of Aug 13

Power Plant	Max and Min Voltage observed	Date for monitoring (Aug 2013)	
	for Aug 13 (KV)		
Farakka STPS	423,405	21,22	
Khalgaon STPS	432,410	21,22	
Talcher STPS	418, 400	Voltage within IEGC Band	
Teesta	417,393 (Binaguri)	Voltage within IEGC Band	
Bakreshwar TPS	406,391	Voltage within IEGC Band	
Kolaghat TPS 420,397		Voltage within IEGC Band	
Sagardighi TPS	423,405 (Farakka)	21,22	
MPL	431,415 (Maithon)	21,22	
Mejia-B	431,415 (Maithon)	21,22	
DSTPS	434,416 (Jamshedpur)	21,22	
Adhunik TPS	434,416 (Jamshedpur)	21,22	
Sterlite	431,412	19,23	

#### Performance analysis:

I. Farakka: Both 210MW & 500MW units at FSTPP, absorbed VAR or injected zero VAR into the Grid for most of the time and hence performance of the units was satisfactory.

II. Kahalgaon : Both 210MW & 500MW units at khSTPP, absorbed VAR or injected zero VAR into the Grid for most of the time and hence performance of the units was satisfactory.

III. Sagardighi: Reactive performance of sagardighi was satisfactory.

IV. MPL: MPL absorbing VAR during High voltage condition and performance was satisfactory.

V. Sterlite: The VAR absorption by SEL units during high voltage condition was not adequate.

VI. Performance of Mejia-B, DSTPS and Adhunik TPS were not adequate.

## b) Optimization of GT tap position at Adhunik, Mejia-B and DSTPS

In the 88<sup>th</sup> OCC it was decided to change the relevant taps of identified units as follows:

DSTPS GT	-1 and 2	MEJIA'B	' GT - 1 & 2
Present tap position & voltage ratio	Suggested tap position & voltage ratio	Present tap position	Suggested tap position
<b>5</b> (21kV/420 kV)	<b>7</b> (21kV /399 kV)	<b>4</b> (21kV /430.5 kV)	<b>7</b> (21kV /399 kV)

Adhunik GT-1 & 2			
Present tap position & Suggested tap position &			
voltage ratio voltage ratio			
<b>8</b> (16.5kV /420kV)	12 (16.5kV /400.68 kV)		

In the meeting, DVC agreed to change one tap instead of two taps. Adhunik agreed to change the tap position during opportunity shutdown.

APNRL and DVC may update.

## **Deliberation in the meeting**

Members noted the presentation given by ERLDC on performance and assured to take all necessary steps as per requirement of grid.

DVC informed that it will be done.

Adhunik informed that they have tried to change the tap position during ensuing shutdown but they cannot do due to some technical reason. OCC advised Adhunik to discuss with ERLDC and resolve it.

SEL informed that, Unit#3 is under O&M, it will be put in grid after adopting the adequate tap position. After that, tap position of unit#1will be changed.

## c) Schedule for reactive capability tests

As discussed in the 88th OCC meeting, the status of reactive capability testing of identified generators is as follows:

a)	Adhunik TPS:	In Sep, 13
b)	DSTPS:	In Sep, 13
C)	Mejia TPS:	Date will be given after consulting with BHEL
d)	Koderma TPS:	Date will be given after consulting with BHEL
e)	Maithon RB	Unit #1: Under Shutdown
-		Unit #2: Date will be communicated within a week

DVC, MPL and Adhunik may confirm final dates.

## **Deliberation in the meeting**

MPL informed that, reactive capability test for Unit#2 will be communicated shortly. Status of the others remains same.

## PART C:: OPERATIONAL PLANNING

## Item no. C.1: Prolonged outage of power system elements in Eastern Region

Constituents updated the latest status as given below:

## (i) Generating units:

Generating	UNIT	CAP(MW)	Date of	REASONS FOR	Date of
Station	NO		Outage	OUTAGE	restoration
STERLITE	3	600	27.06.13	OVERHAULING	Sep, 2013
				R-PHASE BUSHING	7 <sup>th</sup> Sep, 2013
MPL	1	525	06.07.13	FAILURE OF GT	
				Kept out due to	20 <sup>th</sup> Sep, 13
TENUGHAT	2	210	27.07.13	transmission constraint.	
MEJIA	3	210	27.07.13	OVERHAULING	Restored
KOLAGHAT	2	210	11.08.13	OVERHAULING	30 <sup>th</sup> Sep, 2013
FSTPP	4	500	12.08.13	OVERHAULING	9 <sup>th</sup> Sep, 2013
WARIA	4	210	12.08.13	TUBE LEAKAGE	12 <sup>th</sup> Sep, 2013
BOKARO "B"	3	210	16.08.13	MAINTENANCE	Restored
IBTPS	1	210	24.08.13	OVERHAULING	10 <sup>th</sup> Oct, 2013
KHSTPS	6	500	25.08.13	OVERHAULING	19 <sup>th</sup> Sep, 2013

## (ii) Transmission elements

Name of the Line/Element	Outage Date	Reason	Date of restoration
220 KV TENUGHAT - BIHARSHARIFF	12.05.13	TOWER COLLAPSE AT LOC NO 424 A ,425 A, 426A	20 <sup>th</sup> Sep, 13
132 KV BIHARSARIF - SHEIKHPURA	12.05.13	4 NO. TOWER COLLAPSE	13 <sup>th</sup> Sep, 13
220 KV JEERAT - SATGACHIA D/C	15.06.10	DUE TO LAND SLIDE OF GANGES RIVER BANK	2014
315 MVA ICT - II AT BIDHANNAGAR	29.12.10	DUE TO PROFOUSE OIL LEAKAGE FROM DIVERTER TANK	Dec, 2013
220 KV INDRAVATI - THERUVALI -I	15.07.13	UNDER SHUTDOWN FOR RESTRINGING WORK	9 <sup>th</sup> Sep, 2013
220 KV TSTPS - MERAMANDALI D/C	24.08.13	BREAKER PROBLEM AT MERAMANDALI	
765 KV SASARAM - FATEHPUR	25.08.13	One no. tower collapse (61A/1) and another bent (61 A/0 )	Dec, 2013
220 KV FARAKKA - LALMATIA	19.08.13	HV SIDE(Y ,B PHASE) BUSHING OF 315 MVA ICT,400/220 KV BURST	Sep, 2013
400/220 KV , 315 MVA ICT AT FARAKKA	19.08.13	HV SIDE(Y ,B PHASE) BUSHING OF 315 MVA ICT,400/220 KV BURST	Sep, 2013

# Item no. C.2: Information regarding commissioning of new transmission element – ERLDC

- 1. 400kV Jeerat-Behrampore and 400kV Farakka-Behrampore lines (using Bus-I)were taken into service alongwith 80MVAR Bus Reactor on 17/08/13 for the first time, after construction of LILO of Farakka-Jeerat line at Behrampore. 400kV Bus-II at Behrampore was subsequently charged on 20/08/13.
- 2. 400kV Behrampore-Bheramara-I & II were charged upto Indian portion(Loc.46/0) on 29/08/13. Subsequently, the double circuit was charged uptoBheramara gantry on 30/08/13.

Attempt for first time charging of 400kVPurnea-Bihrashariff I & II from Purnea end was unsuccessful (due to B-ph and R-Ph E/F respectively) which led to immediate tripping of the line.

#### **Deliberation in the meeting**

OCC was appraised that, East North Interconnection Company Limited vide its letter dated 9.08.2013 informed that it had already completed their portion of work related to Purnea to Biharsariff transmission line on 1<sup>st</sup> August 2013 and the line has been connected to the interconnection bays of PGCIL S/S at both the ends i.e. Purnea and Biharsariif.

Accordingly, Powergrid informed that attempt for first time charging of 400kVPurnea-Bihrashariff I & II from Purnea end was already made but the line was tripped due to ground clearance problem. The same will be resolved by tomorrow.

All constituents are requested to intimate details of commissioning of new elements/generating units (if any) positively by the first working day of the current month for the previous month.

Latest status of commissioning of generating station and transmission elements are as follows:

New generating units:

S.No.	Power Plant	Plant Size	Expected date
1	GMR Unit#3	4x350MW	15 <sup>th</sup> Nov, 2013
2	Koderma Unit#2	2x500MW	30 <sup>th</sup> Sep, 2013
3	Corporate Power Unit#1	2x270MW	
4	Teesta-III Unit#1	1x200MW	
5	Raghunathpur Unit#1	2x600MW	Nov, 2013
6	TLDP-IV	1x40MW	
7	Barh-IV	660 MW	Sep, 2013

#### New transmission elements

SI No.	Name of Element	Expected
		Date/Remarks
1	400 kV Maithon-Gaya D/C	After December, 2013
2	400 kV Gaya-Koderma D/C	After December, 2013
3	LILO of 400kV Kahalgaon-Biharshariff 1& 2 at	Nov, 2013
	Lakhisarai	
4	400kV Sasaram-Daltonganj D/C &Daltonganj S/Stn	
5	400 kV Ranchi-Raghunathpur D/C	Mar, 2014
6	400 kV Meramandali-Dubri D/C	
7	400 kV Corporate- Ranchi D/C	
8	400 kV IB-Meramandali D/C	December, 2013
9	220 kV TLDP-IV – NJP ckt-2	2014
10	220 kV Kharagpur-Midnapur D/C	After Puja

11	220 kV Jeerat-Rishra D/C	Before Puja
12	220 kV Latehar-Daltonganj D/C	December, 2013
13	220 kV Lohardaga-Lathehar D/C	December, 2013
14	220 kV Bidhansai-Cuttack D/C	June, 2014
15	220 kV Girdih-Koderma D/C	Mar, 2014

## Item no. C.3: Anticipated power supply position during Oct'13

The abstract of peak demand (MW) vis-à-vis availability and energy requirement vis-à-vis availability (MU) for the month of Oct'13 were prepared by ERPC Secretariat on the basis of LGBR for 2013-14, keeping in view that the units are available for generation and expected load growth etc. The details are circulated in the meeting for discussion.

Members may confirm.

## **Deliberation in the meeting**

Modified anticipated power supply position for the month of October, 2013 after incorporating constituents' observations is given at **Annexure-C.3**.

# Item no. C.4: Shutdown proposal of transmission lines and generating units for the month of Oct' 13

Members may finalize the Shutdown proposals of the generating stations and transmission lines for the month of Oct'13 are placed in the meeting.

Members may finalize.

## Deliberation in the meeting

Approved maintenance programme of generating stations and transmission elements during the month of Oct, 2013 is at **Annexure-C.4**.

NHPC informed that, sleeve damaged at Teesta-V station and requested for shutdown from December, 2013 to January, 2014 for repairing.

OCC informed that, the issue will be discussed in OCC to be held in the month of Nov, 2013.

## PART D:: OTHER ISSUES

#### Item no. D.1: UFR operation during the month of Aug'13

Since system frequency did not touch 48.8 Hz in Aug'13, UFR did not operate. Reports of UFR operation from constituents in case of disturbances and local islanding have not yet received.

Members may note.

#### **Deliberation in the meeting**

Members noted.

#### Item no. D.2: Non-compliance of directions issued by SLDC --- ERLDC

Vide clause no 5.5.1.c)(h) of IEGC, non-compliance of SLDC direction by SEB/Distribution licenses/bulk consumers to curtail overdrawal is 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 over drawal, within two days after the day of operation.

No report from any constituent received. Hence ERLDC consider 'Nil' report for all Constituent for Aug'13.

Members may note.

#### **Deliberation in the meeting**

Members noted.

## Item no. D.3: Grid incidences during the month of Aug'13

S1 no	Disturbance Place	Date & Time	Generat ion loss (MW)	Load loss (MW)	Remark	Category
1	BSPHCL (Purnea, Kisanganj,part of Nepal)	02/08/13 at 04:20hrs	0	200	Various 132kV lines & ATRs fromPurnea (BSPHCL) tripped due fault in 132kV Purnea (BSPHCL)-Naugachialine & delayed clearance of the same at BSPHCL side. 132kV Purnea (PG)-Kishanganj also tripped.	
2	OPTCL (Meeramundali)	02/08/13 at 18:25hrs	0	660	Various 400kV, 220kV feeders & ATRs atMeeramundali s/s tripped due to bus fault at 220kV side of Meramundali s/s when discharge attempt was taken at 'B'-Ø breaker bus side pad clamp of 220kV Meramundali-KanihaCkt-I, when bus isolator was in closed condition	GD-1
3	Sikkim,Kurseong, Rangit & Chuzachen	03/08/13 at 05:26 Hrs	149	45	Total power failure occurred in Sikkim system due to tripping of 132kV Siliguri- Kurseong (on ph-ph fault[Y-B-N]) & 132kV Siliguri-Melli(on 3-ph fault[R-Y-B]) due to inclement weather conditions.Running units of Rangit U# 1,2, 3, Chuzachen U# 1& 2 tripped.	GD-1
4	BSPHCL(Muzaffarpu r)	04/08/13 at 11:58hrs	0	190	400/220kV, 315MVA ICT-I at Muzaffarpur (PG) &220kV Muzaffarpur (PG)-Hajipur-I tripped due to jumper snapped in 132kV MTPS-Motiharickt at MTPS.	GD-1
5	JSEB (Hatia, Patratu, Tenughat, Namkum, Kamdara)	04/08/13 at 14:05hrs	304	170	Due to suspected fault in 220kV Patratu- Tenughat ckt, Patratu U#4 & U#10, Tenughat U#1 & various 220kV & 132kV lines from Patratu & Hatia tripped.	GD-1
6	BSPHCL (Purnea, Kisanganj,part of Nepal)	10/08/13 at 21:16hrs	0	230	Various 132kV lines fromPurnea (BSPHCL) tripped due fault in 132kV Purnea (BSPHCL)-Naugachialine & delayed clearance of the same at BSPHCL side. 132kV Purnea (PG)-Kishanganj also tripped.	
7	Sikkim,Kurseong, Rangit & Chuzachen	11/08/13 at 12:52hrs	145	70	Various 132kV lines & ATRs from Silliguri (PG) tripped due fault in 132kV Silliguri- NBU-NJP line & non clearance of the same at Silliguri. Running units of Rangit U# 1, 2, 3, Chuzachen U# 1 & Rammam U# 1, 2, 3, 4 tripped.	GD-1
8	BSPHCL (Purnea)	13/08/13 at 21:16hrs	0	120	Various 132kV lines fromPurnea (BSPHCL) tripped due fault in downstream of Purnea	

					(BSPHCL) system& delayed clearance of	
					the same at BSPHCL side.	
9	Sikkim,Kurseong, Rangit & Chuzachen	14/08/13 at 15:12 hrs& 16:09 hrs	150	65	<ul> <li>(i) Total power failure occurred in Sikkim system due to flash over occurred in CT of 132kV Rammam- Lebong line. Running units of Rangit U# 1, 2, 3, Chuzachen U# 1 &amp; 2 &amp; Rammam U# 1, 2, 3, 4 tripped.</li> <li>(ii) All the running units of Rangit (u#1, 2 &amp; 3) &amp; Chuzachen (U#1) tripped due to tripping of 132kV Silliguri- Kurseong&amp; 132kV Silliguri-Melli ckt or B N foult</li> </ul>	GD-1
10	Sikkim Kurseong	19/08/13&	50	6	Various 132kV lines from Silliguri Rangit	
10	Rangit &	03:03 hrs	20		& Chuzachen tripped due to 132kV Rangit-	
	Chuzachen				Kurseong. Running units of Chuzachen U# 1	
					$\alpha \perp$ unpped.	

Members may note.

## **Deliberation in the meeting**

#### Members noted.

## Item no. D.4: Eastern Region grid performance during the month of Aug'13

In the month of August13, the percentage of time frequency was more than 50.2 Hz increased significantly to 23.52% as compared to 14.58% in the previous month (July13). The percentage of time frequency remained in the IEGC band decreased to 75.74% as compared to 84.91% in the previous month.

Members may note.

#### **Deliberation in the meeting**

#### Members noted.

# Item no. D.5: Black Start Exercise for availing start-up power for NTPC Simhadri(SR) from Eastern Region through AC by-pass at HVDC Gazuwaka

Black Start exercise by taking AC bypass at HVDC Gazuwaka into service and extending start up power from ER to NTPC, Simhadri was successfully carried out on 04/08/13.

Members may note.

#### **Deliberation in the meeting**

Members noted.

#### Item no. D.6: Any other point

#### D.6.1 Re-scheduling of Overhauling of unit#1 of TSTPS Stage-I

Overhauling of unit#1 of TSTPS, Stage-1 was scheduled w.e.f. 06.09.2013. However due to inadequate mobilization of the resources by M/s BHEL for the ESP R&M job, NTPC constrained to defer OH program. The same shall be mobilized by 17-18<sup>th</sup> of Sep, 2013. It may kindly noted that the clearance to operate issued by Odisha State Pollution Control Board (OSPCB) is valid till 30.09.2013 and for continued operation of the units above R&M job of ESP needs to be essentially carried out as per the directive of OSPCB.

In view of above, NTPC requested to allow the OH of unit#1 for a period of 30 days w.e.f. 18.09.2013.

#### **Deliberation in the meeting**

OCC requested NTPC to explore the possibility to start the OH of unit#1 of TSTPS Stage-I as early as possible and bring back the unit by 6<sup>th</sup> October, 2013. NTPC informed that they are planning to take the unit under overhauling on 15<sup>th</sup> September and assured returning the unit on bar positively by night of 6<sup>th</sup> October.

OCC, considering period of this overhauling as an opportune moment, requested OPTCL to allow synchronization of unit#2 of GMR for COD purpose during this period.

OPTCL agreed to look into the matter.

#### D.6.2 Transfer of 66 kV Melli-Sagbari line to Govt. of Sikkim

The matter was referred by 24<sup>th</sup> Commercial Committee meeting. Sikkim informed that the line was not being used by Powergrid since long time and requested to transfer the line to Govt. of Sikkim for utilization of the asset.

#### **Deliberation in the meeting**

OCC felt that from operational point of view this line is not required and it may be transferred to Govt. of Sikkim for utilization of the asset. OCC referred the issue to ensuing Commercial Committee meeting.

#### D.6.3 Transmission constraints in intra-state system.

#### **Deliberation in the meeting**

ERLDC informed that, MoP sought the information regarding Transmission constraints in intrastate system and requested all constituents to furnish the relevant information on monthly basis. The same will be updated in monthly OCC so that, it could send to higher authority as and when required.

# D.6.4 Outage of 315 MVA ICT at 400 kV Patna(PG) without any prior information to SLDC, Patna.

BSPHCL vide letter dated 09-09-2013 informed that, at 18:30 hrs Bihar come to know that, one 400/220 kV, 315 MVA ICT at 400 kV Patna(PG) is out of service without prior intimation to SLDC, Patna.

#### **Deliberation in the meeting**

Powergrid informed that, on that particular day around 13:00 hrs, sparking at R-Phase bushing was observed and immediately the ICT was tripped to avoid further stressing of ICT. The same could not be informed due to communication problem at Patna.

OCC advised Powergrid to communicate this type of incidences to SLDC and ERLDC within time so that they can take appropriate action to avoid overloading.

#### Meeting ended with vote of thanks to the chair.

\*\*\*\*\*\*

# Annexure-A

## Participants in 89th OCC Meeting

Venue: ERPC Conference Room, Kolkata

Time: 11:00 hrs

Date: 10.09.13 (Tuesday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
1	A.K. Bandy Smelly	Mszle	ERPe	9433068531	enie.in	Alaur
2	U.K. Verme	GM	ERLDC	08922496230	ywelkunge.	u Merrii
3	A.a. Marcia	35.5.8.	रिसार अल्ही	9433041802	dkshrivest ave st@	B & Dalie
4	P.S.Das	Ch. Manager	thuc	9433041 83,7-	Jahow-conce	un An
5	5 Barneryse	CM	ERLDC	9 4330 418 23	surgitb@gmail	: um Ky.
6	s.R.sinsh.	em (05)	POWER 4 PDD	943474 1009	Motolinglipg @gehan.	20
7	B. Pour	Head, SLDC	Dvc	9903247102	Odre-gov.in	Bom
8	PAILESHKOMAK	AGm (OS).	NTPC, ERSHO PATNA	9431011344	Thentpercond	Bycs Roan
9	CHANDAN CHAKRABORTY	GM (operation	NTPC/TSTB	9437565288	Chaudanchaltrob	Su creat
10	मनीख राज	उप २० (कि)	NHPC, TERSTA-2	980003548	Monitraz@gmiliten	Hates
11	Himadei S. Bhata	Gr. Head (operation)	MPL	9204853168	himadoi bhata Ctataponoo Com	Heard
12	Indi plu censory	Acre . lyn	VEL	09193729438	Overante wind	Struggy
13	Hissay Donjie Bhutia	D.E (SLOC)	EFPD. Sikkim	9647-879822	Kissenyday ie @ Yahro: My.	de l'
14	NAM GUAR TASKI	A-E(sub)	E2PD Sillin	942539977	Naingyalfashit	Stad
15	Ringin Chaponel	*A.E (THP)	Depc	05272848	mypher & Oscalae	Ringin
16	Noten Tshering	AFE (THP)	Dype	05372848	netenth pegmoul.	Nohue 2
17	T.R. Mohapatra	DM(opin)	ERLOC	9433641833	tushow moha patra egmand o	Tata 18.
18	S.K. Chandrakar	ngr.	-11-	9432041800	Sanjeeu Chadrol Egmarlicom	~ caste
19	Rijumzony Kuona,	Am (project)	APMRZ	9007098131	Pripumjay kumar Cadhunikgseup. sr.	lip
20	Aboke R Bhunis	AGM(OS)	NTPC/Kol	94330 27333	aloke bhunia @ rediffmant . Com	and

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

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# Participants in 89th OCC Meeting

Venue: ERPC Conference Room, Kolkata

Time: 11:00 hrs

Date: 10.09.13 (Tuesday)

Sl No	Name	Designation	Organization	Contact Number	Email	Signature
21	A Karmabar	SE(E) CPD	WBSETCL	9434910090	a sit. Karmelker Carissetch. in	Sel
22	N.G. Stake	SM(PS)	WEPPEL	9482015315	ngoeke @ esteret - co-co	spen
23	H.P. Mahapatra	Mgr (EI)	OHPC	9861164943	hpm, chpe (a)ganail. com	Hly
24	Timaxanda Salio	AGM(E)	BBSR	9438907403	UKS6557 @yahar tom	Ushi
25	P.K. Mishro	AGM(E)	SLD1, Bbsr	9438907402	ele.pkaishace sldcopissa.org.in	Shi
26	RAHUL CHARADOR	17 DGM	CELL	9831054610	CALL Chakivever	b rect
27	Ani readle Setty	A-MCED	GRIDCO	943850	èle asetui @ gnideo.com	distry
28	P.K. BRSh	Dam(0)	KTPS/ WDPach	94320133	pkbose @	-13_
29	A. Binsas	C.E.(*)	SLDC, UBSETCL	09434910030	220 groil. com	AS
30	T. K. DE	A. C.E/ ALDC	WISSEDCL	7433870748	Kumar tepan de O g mail, com	The
31	GI.K. Chout	YSLDC	BSPHCL	77638-	get 1959 C	gkawer
32	A.K. Singh	E.E.E.	JSEB	9973850 208	Cetrom.jseb Qginail.com	Autsh
33	G. Bose.	AEE	E. RIY.	9002020309	glose vailnet @ gmail. com.	9mg
34	Ganeswara Rae	ARE	ERPC			Anada
35	D. K. Bauri	EE	ERPC	2883619236	Siner - Sicabolnaillea	- Don's
36	B. SARKHA	SE(PS)	ERPL	743306574	Brildha Sorebel	John
37	A. Sen Kupta	Mga	CESC	9831802682	guptag . np-sg.in	A
38	P. Banoryi	DE	WBSEDCL	9432140765	preabon 720 gonon 1. con	K.
39	of Raichardhorn	QCE/SLDC	WBSITCL	9434910075		0.00.
40	P.K.De	AD-I	RPSO, CEA VCOLKETO	9433125844	Besokal Karta @gmail.com	Re:

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

# Participants in 89th OCC Meeting

Venue: ERPC Conference Room, Kolkata

Time: 11:00 hrs

Date: 10.09.13 (Tuesday)

SL	Name	Designation	Organization	Contact Number	Email	Signature
41	S.P. Datta.	ACM(NTPS)	ERPC	9433067022		-spl
42	Jiten Dan	CM(03)	ROWERGROD EL-I	9631815708	er-osle yahar. Con	- TE
43	P K Cupta	AGM(EE)	NTPC	9431821136	pkgrpta 0 Centpe,	-43 0-
44	R. P. Sirgh	DGM (05)	NTPC	9431011366	Entplicer is	of with m
45	R.V. Paliauk	AGM (05)	NTPC, EX-E	9439233243	a nipe-co.in	No
46	Vibender Kr.	mgr (os)	powergrup	9434748239	Viendertaine	Ar
47	Sarjay Kr. Sharma	Gigineer (R)	MHPC, Rargel	9200016796	sanjey hpgent.	0f-
48	Jayader Gouda	AM (£)	Energy Utd.	9178462828	jayader, gerdak	For
49	S.W.IM	CMIO)	ERIPC	943304182	Rediwapon kund	sur
50	Dewan Sherpa	Engineer	KHP/06PC Bhutam	-	deone. dape @ gmail.com	Ant
51	KINCEY TONZICH	Jre	CHP/BGPL	-	kulyEuza Quailis	ll
52	Tenzin Chophel	A.E	-do	-	chophelez@gnail.	tim.
53	40yan Tshai	PEE	KHP/DAPL	-	ogentshe. djpc.@6	and Quy:
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# FORMAT FOR REPORTING SYSTEM DISTURBANCES ( Detailed Report )

## **OCCURRENCE REPORT**

- (1) Date & Time of Occurrence
- (2) Name of the Sub Station / Generating Station
- (3) Details of Occurrence

(4) Connection arrangement of lines and other equipment (Attach SLD of the sub-station / power station indicating status of all CBs and isolators of lines / ATRs / Reactors/ Generators connected to the busbars )

## ALTERNATIVELY

At the time of occurrence the disposition of the feeders was as below (for 1-Main / 2-Main + 1 Transfer Scheme)

<u>Main Bus 1</u>	Main Bus 2

MAIN BUS COUPLER BREAKER WAS "ON" /"OFF"

Line / Transformer on Transfer Bus (if any):

# For one and half breaker scheme

	Feeder I	Feeder II	Tie-breaker (On/Off
Diameter 1			
Diameter 2			
Diameter 3			
•••••			

## (5) Antecedent conditions

Bus-1	kV	Hz
Bus-2	kV	Hz
Line-1	MW(export+ / import-)	MVAR(export+ / import -)
Line-2	MW(export+ / import-)	MVAR(export+ / import -)
•••		
ATR-1	MW(export+ / import-)	MVAR(export+ / import -)
ATR-2	MW(export+ / import-)	MVAR(export+ / import -)
••••		
Unit-1 (at GT primary)	MW(export+ / import-)	MVAR(export+ / import -)
Unit-2 (at GT primary)	MW(export+ / import-)	MVAR(export+ / import -)
••••		

# Weather conditions – Normal / Stormy / Rainy / Lightning strikes going on

## (6) Location and nature of Fault

Line	Fault Locator Reading	Fault Current

# (7) Sequence of Trippings

<b>T!</b>	Event	
(hh mm	ss)	

# (8) Protection out of service (if any)

Line / Transformer / Generator / Reactor	Protection out of service	Reasons

# (9) Relays / DR / EL NOT time-synchronized with GPS prior to the tripping

## (10) Relay Indication for Faulted Line/Bus

(A)			
Sl. No	Name of Bay / Line	Local End Relay type And	Remote End Relay type And
110.		Indications	Indications
1.			
2.			
3.			
•••	•••••		••••

# (11) Relay indication for Generating Units / Transformers / Reactors / FSC etc.

Unit / ATR	Relay Indication
Unit #1	
Unit #2	
•••••	
ATR #1	
ATR #2	
•••••	

## (12) PLCC counter readings

	Local end		Remote end		
	Before	After	Before	After	
СН І					
CH II					

(13) Analysis and Conclusion (with explanation and inference drawn from DR, EL and PLCC readings)

## (14) Restoration details

Sl.No.	Line / ATR / Unit	Outage	Restoration	Duration

# (15) Remedial Measures taken / Lesson Learnt

**Enclosure ::-**

- 1) Schematic Diagram showing position of (ON/OFF) breakers, Isolators and Relay Indications.
- 2) DR Charts.
- 3) **Event Logger outputs.**

#### Annexure-B.19

#### PARTICIPATING IN RGMO

NTPC	FARAKKA except unit#6
	KAHALGAON
	TALCHER
DVC	MEJIA
	BAKRESWAR
WBPDCL	SANTALDIH
	unit#5
CESC	BUDGE BUDGE
WBPDCL	DPL
JSEB	SUBARNREKHA
Sterlite	Sterlite
NHPC	
NITI C	THEESTA

#### NOT PARTICIPATING IN RGMO

	CHANDRAPURA TPS	RGMO mode of operation would not be possible for units1, 2 and 3. Because of non-availability of electro-hydraulic governor, digital voltage recorder and CMC.DVC has already applied for exception to Secretary, CERC.		
	CHANDRAPURA TPS	Efforts are being made for RGMO mode of operation in the new units of CTPS 7 & 8.		
DVC	BOKARO	<ol> <li>RGMO mode of operation would not be possible for units1, 2 and 3. Because of non-availability of electro-hydraulic governor, digital voltage recorder and CMC. DVC has already applied for exception to Secretary, CERC.</li> <li>For unit 4 governing system is proposed to be change during R&amp;M</li> </ol>		
	MEJIA	<ol> <li>RGMO mode of operation would not be possible for units1, 2 and 3. Because of non-availability of electro-hydraulic governor, digital voltage recorder and CMC. DVC has already applied for exception to Secretary, CERC.</li> <li>Efforts are being made for RGMO mode of operation in the new units 4, 5 &amp; 6.</li> </ol>		
	MEJIA-B	Efforts are being made for RGMO mode of operation in the new units 7 & 8.		
	DSTPS	Units 1 & 2 would put in RGMO within a short period.		
	WARIA	RGMO mode of operation would not be possible for units 3 & 4. Because of non- availability of electro-hydraulic governor, digital voltage recorder and CMC. DVC has already applied for exception to Secretary, CERC.		
JSEB	B TENUGHAT Difficulties in implementing RGMO & exemption not applied			
OPGC	IBTPS	Not adequate response in RGMO		
	KOLAGHAT	Already applied for exception to Secretary, CERC.		
	BANDEL	Already applied for exception to Secretary, CERC.		
WBPDCL	SANTALDIH unit#6	Could not be implemented because of some technical problem and the issue was refereed to manufacturer BHEL.		
	SAGARDIGHI	Could not be implemented because of some technical problem and the issue was refereed to manufacturer Dangfong, china.		
DVC	MAITHON HPS	RGMO mode of operation would not be possible for units1, 2 and 3. Because of non-availability of electro-hydraulic governor, digital voltage recorder and CMC. DVC has already applied for exception to Secretary, CERC.		
	PANCHET HPS	RGMO mode of operation would not be possible for units1 & 2. Because of non- availability of electro-hydraulic governor, digital voltage recorder and CMC. DVC has already applied for exception to Secretary, CERC.		
онрс	BURLA CHIPLIMA BALIMELA UPPER KOLAB RENGALI	Already applied for exception to Secretary, CERC.		
		Station is not in PGMO_W/PSETCL is pursuing with Parman		
WBSEDCL				
NTPC	FARAKKA LINIT #6			
MDI				
N/IEI	Linit#2	Linder Trail		
IVIFL	Unit#2	Under Trail		
	Unit#2 1	Under Trail		



# Format to be filled by the Central Transmission Utility/State Transmission Utility on identification of site for ESDD/NSDD Measurements

State Transmission Utility/Central Transmission		
Utility Name		
Transmission line Name		
Tower No. (Location No.)		
Tower Location GPS Coordinates	North (Latitude)	East (Longitude)
Contact Person Name (at Site), Mobile No. Email ID		
chemical industry, brick kiln, etc.)		
Distance of the above source of pollution from the		
identified Tower location		
Any other Remarks or Comments Regarding		
Pollution Site		

A(Decimal degrees)	B(Decimal degrees)	C(Decimal degrees)	D(Decimal degrees)	Name of Location (village)	Name of Transmission Line	Tower Identification	Owner of Line	Near by City/landmark
27.000000°,88.250000°	27.000000°,88.500000°	26.750000°,88.250000°	26.750000°,88.500000°		Rangit-Siliguri Line	Tower-205-236	POWERGRID	Sonada
27.000000°,88.500000°	27.000000°,88.750000°	26.750000°,88.500000°	26.750000°,88.750000°	Oodlabari, Bagrakot Tea Garden, Gorubathan				Oodlabari
27.000000°,88.750000°		26.750000°,88.750000°	26.750000°,89.000000°	Nagrakata, Chengmari Tea Garden, Mateli				Ngrakata
26.750000°,88.250000°	26.750000°,88.500000°	26.500000°,88.250000°	26.500000°,88.500000°		Rangit-Siliguri Line	Tower-314-336	POWERGRID	Siliguri
26.750000°.88.500000°	26.750000°.88.750000°	26,500000°,88,500000°	26,500000°.88,750000°		Bongaigaon-New Siliguri line	Tower-543-516	POWERGRID	Jalgaiguri
26.750000°,88.750000°	26.750000°,89.000000°	26.500000°,88.750000°	26.500000°,89.000000°		NSLG-Tala Ckt - III & IV	Tower-270-250	POWERGRID	Dhupguri
26.750000°.89.000000°	26.750000°.89.250000°	26.500000°.89.000000°	26,500000°.89,250000°		NSLG-Tala Ckt - I & II	Tower-172-146	POWERGRID	Birpara
26.750000°.89.250000°	26.750000°.89.500000°	26.500000°.89.250000°	26.500000°.89.500000°		Birpara-Chukha Line I & II	Tower-61-86	POWERGRID	Hasimara
26 750000° 89 500000°	26 750000° 89 750000°	26 500000° 89 500000°	26 500000° 89 750000°	Kotualpur, Kalchni, Panbari, Buxaforest				Buxa
26.50000° 88.250000°	26.500000° 88.500000°	26.2500000° 88.250000°	26.2500000° 88 500000°		New Purnea - New Siliguri - I & II	Tower-660-694	POWERGRID	Bidhan Nagar
26.500000 ,88.250000	26.500000 ,88.500000	26.250000 ,88.250000	26.250000 ,88.500000		Bongaigaon-New Siliguri line	Tower-317-285	POWERGRID	Mathurahagan
26.500000 ,85.250000	26.500000 ,85.300000	26.250000 ,85.250000	26.250000 ,85.500000		Bongaigaon-New Siliguri line	Tower 224 100		Alipurduar
20.300000 ,85.300000	26.300000 ,83.730000	26.230000 ,83.300000	20.2300000 ,89.730000		Now Purpos Now Siliguri 1 & II	Tower 740 780		Rapiipara
	20.230000 ,88.230000	20.000000 ,88.000000	25 750000 00 000000		New Purnea - New Siliguri - L& II	Tower 12 20	POWERGRID	Failjipala Kana diabi
25 750000 00 000000	26.000000 ,88.000000	25 500000 00 000000	25.750000 ,88.000000		New Pullea - New Singuli - L& II	Tower-12-30	POWERGRID	Karandigni
25.750000 ,88.000000	25.750000 ,88.250000	25.500000 ,88.000000	25.500000 ,88.250000	Durkeren (Alieneni Didienil Jerene	Maida -New Purnea - I & II	10wer-920-950	POWERGRID	Kalianani
25.750000 ,88.250000	23.730000,88.500000	23.300000,88.250000°	25.500000,88.500000	Purbarampur,Kallaganj,Bluisoli,Jarang				Naliagalij
		25 250000 07 500000	25 250000 00 0000000	Tallaha Kusia Hasiahahasi duru di Dudutu				Chanabal
25.500000°,87.500000°	25.500000°,88.000000°	25.250000°,87.500000°	25.250000°,88.000000°	Taiphakuria,Harishchandrapur,Daulathagar				
25.50000°,88.00000°	25.500000°,88.250000°	25.250000°,88.000000°	25.250000°,88.250000°		Dalkhola - Malda - I & II	Tower-145-115	POWERGRID	Itahar
25.50000°,88.250000°	25.500000°,88.500000°	25.250000°,88.250000°	25.250000°,88.500000°	Buniadpur,Badalpur,Daultapur,Hatiduba				Gangarampur
25.50000°,88.500000°		25.250000°,88.500000°	25.250000°,88.750000°	Dhopadighi,Rampur,Ashokgram				Kumarganj
25.250000°,87.750000°	25.250000°,88.000000°	25.000000°,87.750000°	25.000000°,88.000000°	Chandipur, Kesarpur, Mathurapur				Ratua
25.250000°,88.000000°	25.250000°,88.250000°	25.000000°,88.000000°	25.000000°,88.250000°		Malda -New Purnea - I & II	Tower-1120-1110	POWERGRID	Gazole
25.250000°,88.250000°	25.250000°,88.500000°	25.000000°,88.250000°	25.000000°,88.500000°	Pakuyahat,Hili,Khiripara,Khutadaha				Pakuyahat
25.000000°,88.000000°	25.000000°,88.250000°	24.750000°,88.000000°	24.750000°,88.250000°		Malda-Farakka DC Line	Tower-30-70	POWERGRID	Kaliachak
					400 kV SC Farakka - SGTPP -			
24.750000°,87.750000°	24.750000°,88.000000°	24.500000°,87.750000°	24.500000°,88.000000°		Subhashgram	Tower-SG50-SG70	POWERGRID	Sajinipara
24.500000°,87.750000°	24.500000°,88.000000°	24.250000°,87.750000°	24.250000°,88.000000°		Farraka-Durgapur Line-I	Tower-105-130	POWERGRID	Nalhat
					400 kV SC Farakka - SGTPP -			
24.500000°,88.000000°	24.500000°,88.250000°	24.250000°,88.000000°	24.250000°,88.250000°		Subhashgram	Tower-FSL05-FSL32	POWERGRID	Lalgola
24.250000°,87.500000°	24.250000°,87.750000°	24.000000°,87.500000°	24.000000°,87.750000°		400 kV SC Farakka-Durgapur	Tower-210-235	POWERGRID	Fatehpur
24.250000°,87.750000°	24.250000°,88.000000°	24.000000°,87.750000°	24.000000°,88.000000°		Farraka-Durgapur Line-I	Tower-160-172	POWERGRID	Rampurhat
24.250000°,88.000000°	24.250000°,88.250000°	24.000000°,88.000000°	24.000000°,88.250000°		Farrraka-Jeerut Line	Tower-185-220	POWERGRID	Nabagram
24.250000°,88.250000°	24.250000°,88.500000°	24.000000°,88.250000°	24.000000°,88.500000°	Gudhi, Kulbaria, Hariharpara, Moktarpur				Berhampore
24.250000°,88.500000°		24.000000°,88.500000°	24.000000°,88.750000°	Khayramari, Jalangi, Tikar Bariakalkihara				Jalangi
24.000000°,87.250000°	24.000000°,87.500000°	23.750000°,87.250000°	23.750000°,87.500000°	Chandrapur, Haridaspur, Tantipara, Rajnagar				Dubrajpur
24.000000°,87.500000°	24.000000°,87.750000°	23.750000°,87.500000°	23.750000°,87.750000°		Farraka-Durgapur Line-I	Tower-265-300	POWERGRID	Sainthia
24.000000°,87.750000°	24.000000°,88.000000°	23.750000°,87.750000°	23.750000°,88.000000°	Margram, Ganutia, Barawan, Biprasekhar				Labpur
					400 kV SC Farakka - SGTPP -			
24.000000°,88.000000°	24.000000°,88.250000°	23.750000°,88.000000°	23.750000°,88.250000°		Subhashgram	Tower-SG250-SG280	POWERGRID	Kandi
24.000000°,88.250000°	24.000000°,88.500000°	23.750000°,88.250000°	23.750000°,88.500000°	Bundainagar, Sarbangapur, Sonatikri				Sarbangapur
24.000000°,88.500000°	24.000000°,88.750000°	23.750000°,88.500000°	23.750000°,88.750000°	Kanthalia, Teinpur, Nazirpur, Betai				Mahishbathan
23.750000°,86.750000°	23.750000°,87.000000°	23.500000°,86.750000°	23.500000°,87.000000°		400 kV DC Ranchi-Maithon	Tower-25-48	POWERGRID	Kulti
23.750000°,87.000000°	23.750000°,87.250000°	23.500000°,87.000000°	23.500000°,87.250000°	Raniganj,Haripur,Jamuria		-		Raniganj
23.750000°.87.250000°	23.750000°.87.500000°	23.500000°.87.250000°	23.500000°.87.500000°		Farraka-Durgapur Line-I	Tower-386-350	POWERGRID	Durgapur
23.750000°.87.500000°	23.750000°.87.750000°	23.500000°.87.500000°	23.500000°.87.750000°	Chhora.Surul.Bolpur				Bolpur
23.750000°.87.750000°	23.750000°.88.000000°	23.500000°.87.750000°	23.500000°.88.000000°	Plita.Dighir para.Charkalgram		1		Nanoor
23.750000° 88.000000°	23.750000° 88 250000°	23.500000° 88.000000°	23.500000° 88 250000°	Katwa.Durmut.Barenda				Katwa
23.750000° 88 250000°	23.750000° 88 50000°	23.500000° 88 250000°	23.500000° 88 500000°		Farrraka-Jeerut Line	Tower-370-400	POWERGRID	Bethuadahari
23 500000° 85 750000°	23 500000° 86 00000°	23 250000° 85 750000°	23 250000° &6 00000°		400 kV DC Maithon (BB)- Ranchi	Tower-101/0-92/0	POWERGRID	Tulin
23.500000 ,85.750000	23.500000 ,80.000000	23.250000 ,05.750000	23.250000 ,80.000000		400 kV DC Banchi-Maithon	Tower-315-285	POWERGRID	Hanslata
23.500000 ,80.000000	23.500000 ,80.250000	23.250000 ,80.000000	23.250000 ,80.250000		Maithon-lamshedpur-line-ll	Tower-210-225	POWERGRID	Purulia
23.500000,80.250000	23.500000 ,80.300000	23.250000 ,80.250000	23.250000,80.500000		Maithon-Jamshedpur-line-II	Tower-153, 190		Kashinur
23.500000,00.5000000	23.500000,00.750000	23.230000,00.3000000	23.230000,00.730000	Iorehira Ibantinahari Maniharagraam	materion-sansneupui-inte-in	10WEI-133-100	OWLNGNID	Ibantinabari
23.300000,00.730000	23.300000,07.000000	23.230000,00,000,000	22.250000,07.000000	iorema,manupanan,waliiididgiddiii	Durganur-Jamshedpur Lino	Tower 142 105	DOWERCRID	Parajuri
23.300000,87.000000	23.300000,07.230000	23.230000,07.000000	23.230000,07.230000			Tower 75 45		Durgopur
∠3.300000 ,87.250000°	23.300000, 87.500000°	×3.250000 ,87.250000°	23.230000 ,87.500000		Durgahni-Jamsnenhni, rine	100001-75-45	FOWERGRID	Duigahni

23.500000°,87.500000°	23.500000°,87.750000°	23.250000°,87.500000°	23.250000°,87.750000°	Askaran, Bunda Tia, Suata				Suata
23.50000°.87.750000°	23.500000°.88.000000°	23.250000°.87.750000°	23.250000°.88.000000°	Mahachanda Gram.Simdal Gram				Bhatar
23.500000°.88.000000°	23.500000°.88.250000°	23.250000°.88.000000°	23.250000°.88.250000°	Bhagara. Kusumgram. Manteswar				Manteswar
23 500000° 88 250000°	23 500000° 88 500000°	23 250000° 88 250000°	23 250000° 88 500000°		Farrraka-leerut Line	Tower-440-465	POWERGRID	Nabadwin
25.500000 ,00.250000	23.300000 ,00.300000	23.230000 ,00.230000	23.230000 ,00.300000			100011440405	TOWERGRID	Hubuump
22 50000° 88 50000°	22 500000 88 750000	22 250000 88 500000	22 250000 88 250000	Taraknagar Hanskhali Krishnagani Bannur				Krishpagapi
23.300000 ,88.300000	23.300000 ,88.730000	23.230000 ,88.300000	23.230000 ,88.730000	Cargo Matiala Parria Matha Dahba				Kiisiiliagalij
23.230000 ,88.000000	23.250000 ,80.250000	23.000000 ,86.000000	23.000000 ,80.250000	Galga, Matiala, Barria, Matria, Dabria	Durana un la mala ada un Lina	Tauran 200 245	POWERCRIP	Delement
23.250000*,86.250000*	23.250000*,86.500000*	23.000000*,86.250000*	23.000000*,86.500000*		Durgapur-Jamsnedpur Line	Tower-380-345	POWERGRID	Balarampur
23.250000°,86.500000°	23.250000°,86.750000°	23.000000°,86.500000°	23.000000°,86.750000°		Durgapur-Jamsnedpur Line	Tower-310-270	POWERGRID	Puncha
23.250000°,86.750000°	23.250000°,87.000000°	23.000000°,86.750000°	23.000000°,87.000000°		Durgapur-Jamshedpur Line	Tower-230-211	POWERGRID	Indpur
23.250000°,87.000000°	23.250000°,87.250000°	23.000000°,87.000000°	23.000000°,87.250000°	Onda,Medinipur,Majdiha				onda
23.250000°,87.250000°	23.250000°,87.500000°	23.000000°,87.250000°	23.000000°,87.500000°	Birsinhga,RameswarKunria				Joypur
23.250000°,87.500000°	23.250000°,87.750000°	23.000000°,87.500000°	23.000000°,87.750000°	Indas,Karisunda,Donganal				indas
23.250000°,87.750000°	23.250000°,88.000000°	23.000000°,87.750000°	23.000000°,88.000000°	Haripur,Kukura,Sehara				Bardhaman
23.250000°,88.000000°	23.250000°,88.250000°	23.000000°,88.000000°	23.000000°,88.250000°	Memari,Boinchi,Kulingram				Memari
23.250000°,88.250000°	23.250000°,88.500000°	23.000000°,88.250000°	23.000000°,88.500000°	Pandua,Kalna,Jamgram				Kalna
23,250000°.88,500000°	23,250000°.88,750000°	23.000000°.88.500000°	23.000000°.88.750000°		Farrraka-Jeerut Line	Tower-535-560	POWERGRID	Ranaghat
23 250000° 88 750000°	23 250000° 89 000000°			Kuladharpur Kundipur Gangulia Baikola				Nonchanota
23,000000° 86,500000°	23.000000° 86.750000°	22 750000° 86 500000°	22 750000° 86 750000°	Rautara Bansanahari				Rautara
23.000000 ,80.300000	23.000000 ,80.750000	22.730000 ,80.300000	22.730000 ,80.730000	Ratara, Bansapanan				Nautara
22 000000 00 7500000	22 000000 07 000000	22 750000 00 750000	22 750000 07 000000	Khutakata Krichpapagar Khatra Mukutmasiana				Khatra
23.000000 ,86.750000	23.000000 ,87.000000	22.750000 ,86.750000	22.750000 ,87.000000	Kilutakata Kilsiinanagar, Kilatra, Wukutinanipur				Knatra
23.000000°,87.000000°	23.00000°,87.250000°	22.750000°,87.000000°	22.750000°,87.250000°	Mukundapur,Kustara,Dubrajpur				Simlapal
23.000000°,87.250000°	23.000000°,87.500000°	22.750000°,87.250000°	22.750000°,87.500000°	Amlagora,Madanhari,Garbeta				Garbeta
23.000000°,87.500000°	23.000000°,87.750000°	22.750000°,87.500000°	22.750000°,87.750000°	Kamarpukur,Ramjibanpur,Gurulia Bhatsala				
23.000000°,87.750000°	23.000000°,88.000000°	22.750000°,87.750000°	22.750000°,88.000000°	Keshabpur,Chak Hazi,Tirol				Arambagh
23.000000°,88.000000°	23.000000°,88.250000°	22.750000°,88.000000°	22.750000°,88.250000°	Bhandarhati, Harishpur, Haripal				Singur
				Chandannagar, Hooghly-Chinsurah,				
23.000000°,88.250000°	23.000000°,88.500000°	22.750000°,88.250000°	22.750000°,88.500000°	Kanchrapara				Kanchrapara
23.00000°.88.500000°	23.000000°.88.750000°	22.750000°.88.500000°	22.750000°.88.750000°		Farrraka-Jeerut Line	Tower-595-625	POWERGRID	Habra
22 750000° 86 750000°	22 750000° 87 000000°	22 500000° 86 750000°	22 500000° 87 000000°	Belpahari. Silda Binpur				Binpur
	2211 500000 /0710000000	221300000 (0011 30000	22.500000 ,07.000000					Billpul
22 750000° 87 000000°	22 750000° 87 250000°	22 500000° 87 000000°	22 500000° 87 250000°	Ibitka Ramgarh Goaltore				Goaltore
22.750000°,87.000000°	22.750000°,87.250000°	22.500000°,87.000000°	22.500000°,87.250000°	Jhitka,Ramgarh,Goaltore				Goaltore Salboni
22.750000°,87.000000° 22.750000°,87.250000°	22.750000°,87.250000° 22.750000°,87.500000°	22.500000°,87.000000° 22.500000°,87.250000°	22.500000°,87.250000° 22.500000°,87.500000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mahappur, Bachupathpur, Khirpai				Goaltore Salboni
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.500000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Dangara, Basisha J, Galadiana Basan				Goaltore Salboni Khirpai
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.000000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.000000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol, Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur				Goaltore Salboni Khirpai Khanakul
22.750000°,87.00000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.750000° 22.750000°,88.000000°	22.75000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia				Goaltore Salboni Khirpai Khanakul Jagatbalavpur
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.500000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.50000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum				Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.250000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.500000°	22.500000°,87.000000° 22.500000°,87.250000° 22.500000°,87.550000° 22.500000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000°	22.500000°,87.250000° 22.500000°,87.500000° 22.500000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000° 22.500000°,88.500000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum	400 kV SC Farakka - SGTPP -			Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.550000° 22.750000°,88.00000° 22.750000°,88.500000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.500000° 22.750000°,88.500000° 22.750000°,88.750000°	22.500000°,87.000000° 22.500000°,87.250000° 22.500000°,87.250000° 22.500000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000° 22.500000°,88.500000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.50000° 22.50000°,88.50000° 22.50000°,88.750000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.750000° 22.750000°,88.00000° 22.750000°,88.500000° 22.750000°,88.500000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.500000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.250000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.550000° 22.50000°,88.550000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.50000° 22.50000°,88.50000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat
22.750000*,87.000000* 22.750000*,87.250000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.250000* 22.750000*,88.500000* 22.750000*,88.750000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.750000° 22.750000°,88.00000° 22.750000°,88.250000° 22.750000°,88.500000°	22.50000°,87.00000° 22.50000°,87.25000° 22.50000°,87.50000° 22.50000°,87.75000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.50000° 22.50000°,88.75000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000° 22.500000°,88.750000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat
22.750000*,87.000000* 22.750000*,87.250000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.250000* 22.750000*,88.750000* 22.50000*,88.750000*	22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.750000° 22.750000°,88.00000° 22.750000°,88.250000° 22.750000°,88.500000° 22.750000°,88.750000°	22.500000°,87.000000° 22.500000°,87.250000° 22.500000°,87.550000° 22.500000°,88.000000° 22.500000°,88.250000° 22.500000°,88.500000° 22.500000°,88.750000°	22.500000°,87.250000° 22.500000°,87.500000° 22.500000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000° 22.500000°,88.500000° 22.500000°,88.750000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.000000° 22.750000°,88.50000° 22.750000°,88.50000° 22.50000°,86.750000° 22.500000°,86.750000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.050000° 22.750000°,88.250000° 22.750000°,88.500000° 22.750000°,88.750000° 22.500000°,87.000000° 22.500000°,87.250000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.50000° 22.50000°,88.750000° 22.50000°,86.750000° 22.250000°,87.00000°	22.500000°,87.250000° 22.500000°,87.500000° 22.500000°,87.750000° 22.500000°,88.250000° 22.500000°,88.250000° 22.500000°,88.500000° 22.500000°,88.750000° 22.250000°,87.000000° 22.250000°,87.250000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalaypur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,88.00000° 22.750000°,88.00000° 22.750000°,88.50000° 22.750000°,88.750000° 22.500000°,86.750000° 22.500000°,87.250000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.250000° 22.750000°,88.250000° 22.750000°,88.500000° 22.550000°,88.750000° 22.500000°,87.500000° 22.500000°,87.500000°	22.50000°,87.00000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,86.750000° 22.250000°,87.250000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,87.00000° 22.250000°,87.50000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul Ruonaravanpur, Kharagpur. Mediniour	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagour
22.750000*,87.000000* 22.750000*,87.250000* 22.750000*,87.50000* 22.750000*,88.00000* 22.750000*,88.250000* 22.750000*,88.500000* 22.750000*,88.750000* 22.50000*,88.750000* 22.500000*,87.50000* 22.500000*,87.50000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.500000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000°	22.50000°,87.00000° 22.50000°,87.25000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,86.750000° 22.250000°,87.50000°	22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.550000° 22.500000°,88.000000° 22.500000°,88.250000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.00000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur Debra	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Jhargapur Debra
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.500000° 22.750000°,88.750000° 22.50000°,86.750000° 22.500000°,87.250000° 22.500000°,87.250000° 22.500000°,87.250000°	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.750000° 22.750000°,88.050000° 22.750000°,88.250000° 22.750000°,88.550000° 22.50000°,87.50000° 22.50000°,87.50000° 22.500000°,87.500000° 22.500000°,87.500000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.250000°	22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.750000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,87.00000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul Rupnarayanpur, Kharagpur, Medinipur Ashari, Radhamohanpur, Debra Kolaebat Kodalia Dakshin Baguan	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Baanan
22.750000*,87.000000* 22.750000*,87.250000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.250000* 22.750000*,88.750000* 22.500000*,86.750000* 22.500000*,87.000000* 22.500000*,87.500000* 22.500000*,87.500000* 22.500000*,87.50000* 22.500000*,87.50000*	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.050000° 22.750000°,88.250000° 22.750000°,88.250000° 22.50000°,88.750000° 22.500000°,87.250000° 22.500000°,87.500000° 22.500000°,87.750000° 22.500000°,87.750000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,86.750000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.75000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,87.00000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.750000° 22.250000°,87.750000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul Rupnarayanpur, Kharagpur, Medinipur Ashari, Radhamohanpur, Debra Kolaghat, Kodalia, Dakshin Baguan	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Ealta
22.750000*,87.300000* 22.750000*,87.250000* 22.750000*,87.550000* 22.750000*,87.550000* 22.750000*,88.250000* 22.750000*,88.250000* 22.750000*,88.750000* 22.500000*,88.750000* 22.500000*,86.750000* 22.500000*,87.250000* 22.500000*,87.50000* 22.500000*,87.750000* 22.500000*,88.000000*	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.750000° 22.750000°,88.250000° 22.750000°,88.250000° 22.750000°,88.500000° 22.500000°,87.750000° 22.500000°,87.250000° 22.500000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,86.750000° 22.250000°,87.00000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.750000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.75000° 22.50000°,88.25000° 22.50000°,88.25000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,88.00000° 22.250000°,88.250000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta
22.750000*,87.000000* 22.750000*,87.250000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.500000* 22.750000*,88.500000* 22.500000*,88.750000* 22.500000*,87.000000* 22.500000*,87.00000* 22.500000*,87.50000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.500000° 22.500000°,87.50000° 22.500000°,87.250000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.000000° 22.500000°,88.250000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.50000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,87.50000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.0000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,88.00000° 22.250000°,88.00000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta	400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Jhargram Kharagpur Debra Bagnan Falta
22.750000°,87.000000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.500000° 22.750000°,88.500000° 22.50000°,88.750000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.00000° 22.500000°,88.00000°	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.750000° 22.750000°,88.050000° 22.750000°,88.250000° 22.750000°,88.550000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.50000° 22.500000°,88.50000° 22.500000°,88.50000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.50000° 22.250000°,87.250000° 22.250000°,87.550000° 22.250000°,87.550000° 22.250000°,87.550000° 22.250000°,88.250000° 22.250000°,88.250000°	22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,87.250000° 22.250000°,87.500000° 22.250000°,87.500000° 22.250000°,87.50000° 22.250000°,88.50000° 22.250000°,88.550000° 22.250000°,88.550000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul Rupnarayanpur, Kharagpur, Medinipur Ashari, Radhamohanpur, Debra Kolaghat, Kodalia, Dakshin Baguan Burul, Raipur, Falta	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Basirhat Jhargram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur
22.750000°,87.000000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.500000° 22.750000°,88.750000° 22.500000°,87.00000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.750000° 22.500000°,88.50000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,88.00000° 22.750000°,88.250000° 22.750000°,88.250000° 22.750000°,88.750000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.250000° 22.500000°,88.550000° 22.500000°,88.50000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,86.750000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.50000° 22.250000°,88.250000°	22.50000°,87.250000° 22.50000°,87.250000° 22.50000°,87.750000° 22.50000°,88.05000° 22.50000°,88.250000° 22.50000°,88.550000° 22.50000°,88.750000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.00000° 22.250000°,88.250000° 22.250000°,88.550000° 22.250000°,88.50000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning
22.750000*,87.300000* 22.750000*,87.55000* 22.750000*,87.550000* 22.750000*,87.550000* 22.750000*,88.250000* 22.750000*,88.250000* 22.750000*,88.750000* 22.500000*,88.750000* 22.500000*,87.550000* 22.500000*,87.550000* 22.500000*,87.550000* 22.500000*,88.250000* 22.500000*,88.250000* 22.500000*,88.250000*	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,88.050000° 22.750000°,88.250000° 22.750000°,88.250000° 22.750000°,88.250000° 22.500000°,87.00000° 22.500000°,87.250000° 22.500000°,87.750000° 22.500000°,88.00000° 22.500000°,88.250000° 22.500000°,88.50000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,86.750000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.50000° 22.250000°,88.250000° 22.250000°,88.50000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.500000°,88.250000° 22.500000°,88.250000° 22.500000°,88.750000° 22.250000°,87.00000° 22.250000°,87.50000° 22.250000°,87.750000° 22.250000°,88.00000° 22.250000°,88.250000° 22.250000°,88.50000° 22.250000°,88.50000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning
22.750000*,87.000000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.500000* 22.750000*,88.500000* 22.750000*,88.750000* 22.500000*,86.750000* 22.500000*,87.750000* 22.500000*,87.50000* 22.500000*,88.000000* 22.500000*,88.50000* 22.500000*,88.50000* 22.500000*,88.50000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.550000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.250000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.250000° 22.500000°,88.500000° 22.500000°,88.500000° 22.500000°,88.500000°	22.50000°,87.00000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,87.75000° 22.50000°,88.50000° 22.50000°,88.50000° 22.50000°,88.50000° 22.250000°,88.750000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.50000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.550000° 22.250000°,88.000000° 22.250000°,88.550000° 22.250000°,88.550000° 22.250000°,88.750000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning Sandeshkhali,Hingalganj,Chhotasahebkhali	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali
22.750000°,87.000000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.500000° 22.50000°,88.750000° 22.500000°,87.00000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.250000° 22.500000°,88.250000° 22.500000°,88.250000°	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.550000° 22.750000°,88.050000° 22.750000°,88.250000° 22.750000°,88.500000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.250000° 22.500000°,88.500000° 22.500000°,88.500000° 22.500000°,88.500000° 22.500000°,88.500000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.550000° 22.250000°,88.00000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.250000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.750000° 22.500000°,88.000000° 22.500000°,88.250000° 22.50000°,88.250000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.500000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.500000° 22.250000°,88.500000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul Rupnarayanpur, Kharagpur, Medinipur Ashari, Radhamohanpur, Debra Kolaghat, Kodalia, Dakshin Baguan Burul, Raipur, Falta GangaCheri, Gutri, Patikhali, Canning Sandeshkhali, Hingalganj, Chhotasahebkhali Daldali, Chaksuliapada, Dharampur, Gopiballabh	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID POWERGRID	Goaltore Salboni Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali
22.750000°,87.000000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.000000° 22.750000°,88.500000° 22.750000°,88.750000° 22.500000°,88.750000° 22.500000°,87.250000° 22.500000°,87.250000° 22.500000°,87.50000° 22.500000°,88.500000° 22.500000°,88.500000° 22.500000°,88.500000° 22.500000°,88.500000° 22.500000°,88.500000°	22.750000°,87.250000° 22.750000°,87.500000° 22.750000°,87.500000° 22.750000°,88.000000° 22.750000°,88.250000° 22.750000°,88.250000° 22.750000°,88.750000° 22.500000°,87.50000° 22.500000°,87.500000° 22.500000°,88.250000° 22.500000°,88.250000° 22.500000°,88.500000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.750000° 22.50000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,88.550000° 22.250000°,88.500000° 22.250000°,88.550000° 22.250000°,88.750000°	22.50000°,87.250000° 22.50000°,87.250000° 22.50000°,87.750000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.250000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.500000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.500000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning Sandeshkhali,Hingalganj,Chhotasahebkhali Daldali,Chaksuliapada,Dharampur,Gopiballabh pur	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID	Goaltore Salboni Khirpai Khirpai Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali Gopiballabhpur
22.750000*,87.000000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.250000* 22.750000*,88.750000* 22.500000*,88.750000* 22.500000*,87.50000* 22.500000*,87.50000* 22.500000*,87.50000* 22.500000*,88.250000* 22.500000*,88.50000* 22.500000*,88.50000* 22.500000*,88.50000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.750000° 22.750000°,88.000000° 22.750000°,88.00000° 22.750000°,88.00000° 22.500000°,87.00000° 22.500000°,87.00000° 22.500000°,87.750000° 22.500000°,88.00000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.55000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000°	22.50000°,87.250000° 22.50000°,87.550000° 22.500000°,88.000000° 22.500000°,88.000000° 22.500000°,88.00000° 22.50000°,88.750000° 22.250000°,87.000000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning Sandeshkhali,Hingalganj,Chhotasahebkhali Daldali,Chaksuliapada,Dharampur,Gopiballabh pur Rohini,Kultikri,BhaliaGhati,	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID POWERGRID	Goaltore Salboni Khirpai Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali Gopiballabhpur Nayagram
22.750000*,87.000000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.500000* 22.750000*,88.500000* 22.500000*,86.750000* 22.500000*,87.50000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.550000° 22.750000°,88.000000° 22.750000°,88.00000° 22.750000°,88.500000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,87.50000° 22.500000°,88.000000° 22.500000°,88.500000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,87.50000°	22.50000°,87.00000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,87.750000° 22.50000°,88.00000° 22.50000°,88.50000° 22.50000°,88.50000° 22.50000°,88.750000° 22.250000°,87.750000° 22.250000°,87.00000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000°	22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.0000° 22.50000°,88.0000° 22.50000°,88.750000° 22.250000°,87.250000° 22.250000°,87.750000° 22.250000°,87.50000° 22.250000°,88.00000° 22.250000°,88.500000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning Sandeshkhali,Hingalganj,Chhotasahebkhali Daldali,Chaksuliapada,Dharampur,Gopiballabh pur Rohini,Kultikri,BhaliaGhati, KasbaNarayangarh,Raipur,Belda,	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID POWERGRID	Goaltore Salboni Khirpai Khirpai Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali Gopiballabhpur Nayagram KasbaNarayangarh
22.750000*,87.000000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,87.50000* 22.750000*,88.000000* 22.750000*,88.250000* 22.750000*,88.500000* 22.50000*,88.750000* 22.500000*,87.00000* 22.500000*,87.50000* 22.500000*,87.50000* 22.500000*,88.250000* 22.500000*,88.250000* 22.500000*,88.50000* 22.500000*,88.750000* 22.500000*,88.750000* 22.500000*,88.750000* 22.50000*,88.750000* 22.250000*,88.750000* 22.250000*,87.50000* 22.250000*,87.50000* 22.250000*,87.50000*	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.550000° 22.750000°,88.000000° 22.750000°,88.00000° 22.750000°,88.00000° 22.750000°,88.750000° 22.50000°,87.250000° 22.50000°,87.250000° 22.500000°,87.550000° 22.500000°,88.000000° 22.500000°,88.500000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,88.750000° 22.500000°,87.00000° 22.50000°,87.00000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.50000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.200000°,88.750000° 22.200000°,88.750000° 22.00000°,87.50000°	22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.0000° 22.50000°,88.750000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.00000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.50000° 22.250000°,88.750000° 22.250000°,87.00000° 22.250000°,87.00000° 22.250000°,87.00000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning Sandeshkhali,Hingalganj,Chhotasahebkhali Daldali,Chaksuliapada,Dharampur,Gopiballabh pur Rohini,Kultikri,BhaliaGhati, KasbaNarayangarh,Raipur,Belda, Manelamaro,Bishnupur,Sabang,Manikara	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID POWERGRID	Goaltore Salboni Khirpai Khirpai Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali Gopiballabhpur Nayagram KasbaNarayangarh Sabanz
22.750000°,87.000000° 22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.250000° 22.750000°,88.250000° 22.750000°,88.750000° 22.50000°,88.750000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.50000° 22.50000°,88.50000° 22.50000°,88.750000° 22.50000°,88.750000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000°	22.750000°,87.250000° 22.750000°,87.50000° 22.750000°,87.50000° 22.750000°,88.00000° 22.750000°,88.00000° 22.750000°,88.500000° 22.750000°,88.750000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,87.50000° 22.50000°,88.000000° 22.50000°,88.500000° 22.50000°,88.500000° 22.50000°,88.750000° 22.50000°,88.750000° 22.50000°,87.50000° 22.50000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000°	22.50000°,87.00000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.500000° 22.250000°,88.750000° 22.250000°,88.750000° 22.200000°,87.50000° 22.00000°,87.50000° 22.00000°,87.50000° 22.00000°,87.50000°	22.50000°,87.250000° 22.50000°,87.250000° 22.50000°,87.50000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.250000° 22.50000°,88.750000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,87.50000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.250000° 22.250000°,88.500000° 22.250000°,88.500000° 22.250000°,88.500000° 22.250000°,87.500000° 22.00000°,87.50000° 22.00000°,87.50000° 22.00000°,87.50000° 22.00000°,87.50000°	Jhitka, Ramgarh, Goaltore Salboni, Kanashol, Mahishdubi, Durgapur Mohanpur, Raghunathpur, Khirpai Jayrampur, Ranichak, Sabalsinghapur Jagatbalavpur, Shankarhati, Bargachia Baranagar, Kolkata, South Dumdum Sangrampur, Basirhat, GulaiChandi Bahirgram, Murakati, Dholkat, Kuldiha, Chichra Saradiya, Manikpara, Gojasimul Rupnarayanpur, Kharagpur, Medinipur Ashari, Radhamohanpur, Debra Kolaghat, Kodalia, Dakshin Baguan Burul, Raipur, Falta GangaCheri, Gutri, Patikhali, Canning Sandeshkhali, Hingalganj, Chhotasahebkhali Daldali, Chaksuliapada, Dharampur, Gopiballabh pur Rohini, Kultikri, BhaliaGhati, KasbaNarayangarh, Raipur, Belda, Manglamaro, Bishnupur, Sabang, Manikara	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID POWERGRID POWERGRID	Goaltore Salboni Khirpai Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali Gopiballabhpur Nayagram KasbaNarayangarh Sabang Khondambari
22.750000*,87.300000° 22.750000*,87.250000* 22.750000*,87.50000° 22.750000*,87.550000* 22.750000*,88.250000* 22.750000*,88.250000* 22.750000*,88.500000* 22.500000*,88.750000* 22.500000*,87.50000* 22.500000*,87.50000* 22.500000*,87.50000* 22.500000*,88.250000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.500000* 22.500000*,88.750000* 22.500000*,88.750000* 22.250000*,87.5000* 22.250000*,87.5000* 22.25000* 22.25000* 20.20	22.750000°,87.250000° 22.750000°,87.550000° 22.750000°,87.550000° 22.750000°,88.000000° 22.750000°,88.00000° 22.750000°,88.00000° 22.50000°,87.00000° 22.50000°,87.00000° 22.50000°,87.50000° 22.50000°,88.00000° 22.50000°,88.750000° 22.50000°,88.750000° 22.50000°,88.750000° 22.50000°,88.750000° 22.50000°,88.750000° 22.50000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000°	22.50000°,87.20000° 22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,87.550000° 22.50000°,88.00000° 22.50000°,88.00000° 22.50000°,88.750000° 22.250000°,88.750000° 22.250000°,87.250000° 22.250000°,87.250000° 22.250000°,87.50000° 22.250000°,88.250000° 22.250000°,88.500000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.200000°,87.250000° 22.00000°,87.250000° 22.00000°,87.250000° 22.00000°,87.250000° 22.00000°,87.250000° 22.00000°,87.50000° 22.00000°,87.50000° 22.00000°,87.50000°	22.50000°,87.250000° 22.50000°,87.550000° 22.50000°,88.500000° 22.500000°,88.000000° 22.500000°,88.00000° 22.50000°,88.750000° 22.50000°,87.750000° 22.250000°,87.750000° 22.250000°,87.750000° 22.250000°,88.500000° 22.250000°,88.500000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,88.750000° 22.250000°,87.750000° 22.00000°,87.750000° 22.00000°,87.750000° 22.00000°,87.750000°	Jhitka,Ramgarh,Goaltore Salboni,Kanashol,Mahishdubi,Durgapur Mohanpur,Raghunathpur,Khirpai Jayrampur,Ranichak,Sabalsinghapur Jagatbalavpur,Shankarhati,Bargachia Baranagar,Kolkata,South Dumdum Sangrampur,Basirhat,GulaiChandi Bahirgram,Murakati,Dholkat,Kuldiha,Chichra Saradiya,Manikpara,Gojasimul Rupnarayanpur,Kharagpur,Medinipur Ashari,Radhamohanpur, Debra Kolaghat,Kodalia,Dakshin Baguan Burul,Raipur,Falta GangaCheri,Gutri,Patikhali,Canning Sandeshkhali,Hingalganj,Chhotasahebkhali Daldali,Chaksuliapada,Dharampur,Gopiballabh pur Rohini,Kultikri,BhaliaGhati, KasbaNarayangarh,Raipur,Selda, Manglamaro,Bishnupur,Sabang,Manikara Narandanri,Kulapara,Machhandapur	400 kV SC Farakka - SGTPP - Subhashgram 400 kV SC Farakka - SGTPP - Subhashgram	Tower-60-100	POWERGRID POWERGRID POWERGRID	Goaltore Salboni Khirpai Khirpai Khanakul Jagatbalavpur Kolkata Deganga Basirhat Bahirgram Jhargram Kharagpur Debra Bagnan Falta Rajpur Sonarpur Canning Sandeshkhali Gopiballabhpur Nayagram KasbaNarayangarh Sabang Khodambari Haldia

22.250000°,88.250000°	22.250000°,88.500000°	22.000000°,88.250000°	22.000000°,88.500000°	Lakshmikantapur, Kashinagar, Mirzapur		Dakshin Barasat
22.250000°,88.500000°	22.250000°,88.750000°	22.000000°,88.500000°	22.000000°,88.750000°	Meraganj, Budh Khali, Dakshin Garankati		Dakshin Garankati
22.250000°,88.750000°	22.250000°,89.000000°	22.000000°,88.750000°	22.000000°,89.000000°	Sudhansupur, Kakmari, Dayapur, Anpur, Gosaba		Gosaba
22.000000°,87.250000°	22.000000°,87.500000°	21.750000°,87.250000°	21.750000°,87.500000°	Anikola, Jankapur, Bamanda, Dantan		Mohanpur
22.000000°,87.500000°	22.000000°,87.750000°	21.750000°,87.500000°	21.750000°,87.750000°	Urdhabpur,Balighai,Asit chak,Khejurda		Egra
22.000000°,87.750000°	22.000000°,88.000000°	21.750000°,87.750000°	21.750000°,88.000000°	Kasaria, Ajan Bari, Sona Chura, Baratala		Dekhali
22.000000°,88.000000°	22.000000°,88.250000°	21.750000°,88.000000°	21.750000°,88.250000°	Kastala, Sapkhali, Kasinagar, kakdwip		Kakdwip
22.000000°,88.250000°	22.000000°,88.500000°	21.750000°,88.250000°	21.750000°,88.500000°	Kailaspur, Damkal, Kamdebnagar, Uttardurgapur		Patharpratima
22.000000°,88.500000°	22.000000°,88.750000°	21.750000°,88.500000°	21.750000°,88.750000°	Lot No124, Maipit, Lot No121		Lot-121
21.750000°,87.500000°	21.750000°,87.750000°			Ramnagar, Jamrashyampur, Digha, Mandarmani		Mandarmani
21.750000°,88.250000°	21.750000°,88.500000°			Sibrampur,Lothian Island,Gplot		Sibrampur

Note-

Grid Representation



The name of location (village) is written in order of proximity to the centre of the GRID.

Tower shall be identified near to the village preferably not exceeding 10 km from the village for installation of dummy insulator . In case of POWERGRID line, prefered location is middle of identified Towers.

A(Decimal degrees)	B(Decimal degrees)	C(Decimal degrees)	D(Decimal degrees)	Name of Location	Name of Transmission Line	Tower Identification	Owner of Line	Landmark / Near by City
				Rampurva,Borwal,Nadda,Meh				
27.250000°, 84.000000°	27.250000°,84.250000°		27.000000°,84.250000°	ura,Bagha				Bagha
				Ramnagar, TelpurDeoraj, Narka				
27.250000°,84.250000°		27.000000°,84.250000°	27.000000°,84.500000°	tiaganj				Narkatiaganj
27 000000 04 500000	27 000000 04 7500000		26 7500001 04 7500001	Kunsenheish Detis Dik Lelsenh				Chamastia Dattiah
27.000000°,84.500000°	27.000000°,84.750000°	26.750000°,84.500000°	26.750000°,84.750000°	Kumarbagn,Betia Din,Lalgarn				Chanpatia,Bettian
27.000000*,84.750000*	26 750000 04 750000	26.750000*,84.750000*	26.750000*,85.000000*	Ramgarnwa,Kaurinar				Ramgarnwa
26.750000*,84.500000*	26.750000*,84.750000*	26.500000*,84.500000*	26.500000*,84.750000*	Panarpur,Ganiri,areraj				Panarpur
26.750000*,84.750000*	26.750000*,85.000000*	26.500000*,84.750000*	26.500000*,85.000000*	Siswa,turkaulla,iviotinari				Niotinari
26.750000*,85.000000*	26.750000*,85.250000*	26.500000*,85.000000*	26.500000*,85.250000*					Dhaka Citementei
26.750000°,85.250000°	26.750000*,85.500000*	26.500000*,85.250000*	26.500000*,85.500000*	Rharsan, Maniari, Manesia				Sitamarni
26.750000*,85.500000*	26 500000 04 500000	26.500000,85.500000	26.500000*,85.750000*	Bathnana,Sursand				Sursand
26.500000*,84.250000*	26.500000*,84.500000*	26.250000*,84.250000*	26.250000*,84.500000*	Hatnua,Gopaiganj				Hathua
26 500000 84 500000	26 500000 84 750000	26 250000 84 500000	26 250000 84 750000	Potoncoroj Doroviji Colomnur				Darauli
26.500000,84.500000	26.500000,84.750000	26.250000°,84.500000°	26.250000°,84.750000°	Katansarai, Barauli, Salempur				Barauli
26.500000,84.750000	26.500000,85.000000	26.250000°,84.750000°	26.250000°,85.000000°	Kesariya, Alaula, sanebganj				sanebganj
26.500000 ,85.000000	26.500000 ,85.250000	20.250000 ,85.000000	20.250000 ,85.250000	Maunupan, Chakia				Ividunuban
26 500000 85 250000	26 500000 85 500000	26 250000 85 250000	26 250000 85 500000	Ciri khinria Madhkaul Dalaand				Delegand
20.300000 ,03.230000	20.300000 ,83.300000	20.230000 ,83.230000	20.230000 ,85.300000	Sin killina, Maunkaul, Beisanu				Deisallu
26 E00000° 85 E00000°	26 500000 85 750000	26 250000° 85 500000°	26 250000 85 750000	Sirci Dokhraira Halimpur Dupri				Halimpur
20.300000 ,83.300000	20.300000 ,83.730000	20.230000 ,85.300000	20.230000 ,85.730000	Moghban Matrabari Parsauni				пашпри
26 500000 85 750000	26 500000 86 000000	26 250000 85 750000	26.250000° 86.000000°	Roninatti				Parcauni
20.300000 ,83.730000	20.300000 ,80.000000	20.230000 ,83.730000	20.230000 ,80.000000	Bempatti				Faisaulli
26 500000 86 000000	26 500000 86 250000	26.250000° 86.000000°	26 250000 86 250000	rainagar Madhubani kothia				Painagar
20.300000 ,80.000000	20.300000 ,80.230000	20.230000 ,80.000000	20.230000 ,80.230000	AndhraTharhi Babubarhi Khut				Najilagai
26 500000° 86 250000°	26 500000° 86 500000°	26 250000° 86 250000°	26 250000° 86 500000°	uana Siswar				Phulparas
20.500000 ,00.250000	20.500000 ,00.500000	20.230000 ,00.230000	20.250000 ,00.500000	Nirmali Hanriahi MahthourGo				i naiparas
26 500000° 86 500000°	26 500000° 86 750000°	26 250000° 86 500000°	26 250000° 86 750000°	t				Bhantiahi
201000000 (001000000	201000000 ,0017 00000	201200000 (001000000	201200000 ,0011 00000	Ratannura SimrahiBazar Ihila				Shapelani
26.500000°.86.750000°	26.500000°.87.000000°	26.250000°.86.750000°	26.250000°.87.000000°	Dhumari				Pratapgani
26.500000°.87.000000°	26.50000°.87.250000°	26.250000°.87.000000°	26.250000°.87.250000°	Narpatgani. Forbesgani				Forbesgani
26.250000°.84.250000°	26.250000°.84.500000°	,	26.000000°.84.500000°	Ziradei. Siwan. Maharaigani				Ziradei
26.250000°.84.500000°	26.250000°.84.750000°	26.000000°.84.500000°	26.000000°.84.750000°	Basantpur. Haraipur				Basantpur
,.								
26.250000°,84.750000°	26.250000°,85.000000°	26.00000°,84.750000°	26.000000°,85.000000°		800 kV HVDC Saharsa- Gopalganj	Tower-77/0 to 75/1	POWERGRID	Taraiya
,	,	,	,					
26.250000°,85.000000°	26.250000°,85.250000°	26.00000°,85.000000°	26.000000°,85.250000°		800 kV HVDC Saharsa- Gopalganj	Tower-72/0 to 65/0	POWERGRID	Parukhas
,	,,	,,			400 kV DC Biharsharif-	,,.		
26.250000°,85.250000°	26.250000°,85.500000°	26.00000°,85.250000°	26.000000°,85.500000°		Muzaffarpur	Tower-348 to 330	POWERGRID	Musahari
26.250000°,85.500000°	26.250000°,85.750000°	26.00000°,85.500000°	26.00000°,85.750000°	Jaranag, Jilamissrouli	н			Jilamissrouli
,	,	,	,	Sahapur, Bastawara, Darbhang				
26.250000°,85.750000°	26.250000°,86.000000°	26.00000°,85.750000°	26.000000°,86.000000°	a,Dekuli				darbhanga
26.250000°,86.000000°	26.250000°,86.250000°	26.00000°,86.00000°	26.000000°,86.250000°	Habibhouar,patai				patai
26.250000°,86.250000°	26.250000°,86.500000°	26.00000°,86.250000°	26.00000°,86.500000°	Madhepur, chunni				Madhepur
26.250000°,86.500000°	26.250000°,86.750000°	26.00000°,86.500000°	26.000000°,86.750000°	Baspati, supaul				supaul
26.250000°,86.750000°	26.250000°,87.000000°	26.00000°,86.750000°	26.000000°,87.000000°	ThalhaGarhia, Tribenganj				Tribenganj

26.250000°,87.000000°	26.250000°,87.250000°	26.00000°,87.000000°	26.000000°,87.250000°	Bhargama,Sirsiakala,				Bhargama
26.250000°,87.250000°	26.250000°,87.500000°	26.000000°,87.250000°	26.00000,87.500000°		800 kV HVDC Islampur- Saharsa	Tower-356 to 350	POWERGRID	Basantpur
26.250000°,87.500000°	26.250000°,87.750000°	26.000000,87.500000°	26.000000°,87.750000°		800 kV HVDC Islampur- Saharsa	Tower-346 to 338	POWERGRID	Chakai
26.250000°,87.750000°	26.250000°,88.000000°	26.000000°,87.750000°	26.000000°,88.000000°		800 kV HVDC Islampur- Saharsa	Tower-329to 326	POWERGRID	Kishanganj
				GurdahanKhurd,Revelganj,Ch				
26.00000°,84.500000°	26.000000°,84.750000°	25.750000°,84.500000°	25.750000°,84.750000°	hapra				Chhapra
26.000000°,84.750000°	26.000000°,85.000000°	25.750000°,84.750000°	25.750000°,85.000000°	PojhiKapoor,Bheldi				Bheldi
26.00000°,85.000000°	26.000000°,85.250000°	25.750000°,85.000000°	25.750000°,85.250000°	Sadullahpur,jafrabad,Lalganj				Lalganj
26.000000°,85.250000°	26.000000°,85.500000°	25.750000°,85.250000°	25.750000°,85.500000°		800 kV HVDC Saharsa- Gopalganj	Tower-52/0 to 50/0	POWERGRID	Bhagwanpur
26.000000°,85.500000°	26.000000°,85.750000°	25.750000°,85.500000°	25.750000°,85.750000°		800 kV HVDC Saharsa- Gopalganj	Tower-37/0 to 34/0	POWERGRID	Tajpur
								a
26.000000°,85.750000°	26.000000°,86.000000°	25.750000°,85.750000°	25.750000°,86.000000°		800 kV HVDC Saharsa- Gopalganj	Tower-20/0 to 18/0	POWERGRID	Samstipur
26.00000°,86.000000°	26.00000°,86.250000°	25.750000°,86.000000°	25.750000°,86.250000°		800 kV HVDC Saharsa- Gopalganj	Tower-12/0 to 8/0	POWERGRID	Baheri
		25 750000 06 250000	25 7500001 06 5000001			T 10/01 0/5		
26.000000°,86.250000°	26.000000°,86.500000°	25.750000°,86.250000°	25.750000°,86.500000°		800 kV HVDC Saharsa- Gopalganj	Tower-4B/0 to 3/5	POWERGRID	Supaul
	20 000000 00 750000	25 750000 00 500000	25 750000 00 750000			Taura 410 ta 400	DOWEDCHID	California
26.000001,86.5000001	26.000001,86.7500001	25.750000*,86.500000*	25.750000*,86.750000*		800 KV HVDC Islampur- Sanarsa	Tower-418 to 406	POWERGRID	Sanarsa
20 000000 00 750000	20 000000 07 000000	25 750000 06 750000	25 750000 07 000000			T 205 to 201	DOWEDCHID	
20.000000 ,80.750000	26.000000 ,87.000000	25.750000 ,80.750000	25.750000 ,87.000000		800 KV HVDC Islampur- Sanarsa	10wei-395 to 391	POWERGRID	Iviaunepura
26 000000 87 000000	26 000000 87 250000	25 750000 97 000000	25 750000 87 250000		800 kV HVDC Islampur, Sabarsa	Tower 291 to 276		Daribari
20.000000 ,87.000000	20.000000 ,87.250000	23.730000 ,87.000000	23.730000 ,87.230000		800 KV HVDC Islampur- Sanarsa	10WEI-361 (0 370	POWERGRID	Pdillidii
26 000000° 87 250000°	26 00000 87 500000°	25 750000° 87 250000°	25 750000 87 500000°	Sarsi Istamrar kirtianandnagar				kirtianandnagar Purnia
26.000000 ,37.230000 26.000000 87 500000°	26.000000,87.300000	25.750000 ,87.250000 25.750000 87.500000°	25.750000,87.500000 25.750000° 87.750000°	Sarsi istarinar, kii tiananunagai	220 kV DC Dalkbola-Purnea	Tower-70 to 40	POWERGRID	Gandhas
25.750000° 84.500000°	25.750000° 84.750000°	25.500000° 84.500000°	25.750000°,87.750000°		400 kV DC Patna- Ballia	Tower- 190-160	POWERGRID	Arrah
25 750000° 84 750000°	25 750000° 85 000000°	25 500000° 84 750000°	25 500000° 85 000000°		400 kV DC Patna- Ballia	Tower- 108-90	POWERGRID	Bihta
25.750000°.85.000000°	25.750000°.85.250000°	25.500000°.85.000000°	25.50000°.85.250000°		220 kV DC Ara- Khagaul	Tower- 150-130	POWERGRID	Danapur
251750000 (051000000	25// 50000 (05/250000	231300000 (051000000	251500000 (051250000			101101 100 100	10112Hollip	Banapai
				Chak Sikandar. Desri. Kamalpur				
25.750000°.85.250000°	25.750000°.85.500000°	25.500000°.85.250000°	25,500000°.85,500000°	Singhiya				Kamalpur Singhiya
			,		400 kV DC Biharsharif-			
25.750000°.85.500000°	25.750000°.85.750000°	25,500000°.85,500000°	25,500000°.85,750000°		Muzaffarpur	Tower- 190-150	POWERGRID	Mohiuddin nagar
,				Bachwara, Dalsingh	•			
25.750000°,85.750000°	25.750000°,86.000000°	25.500000°,85.750000°	25.500000°,86.000000°	Sarai, Biphutipur, Garh Sisai				Dalsingh Sarai
25.750000°,86.000000°	25.750000°,86.250000°	25.500000°,86.000000°	25.500000°,86.250000°	Jayrampur,hasanpur				Naokothi
				Hathwan,Goriami,Jahangira,Bi				
25.750000°,86.250000°	25.750000°,86.500000°	25.500000°,86.250000°	25.500000°,86.500000°	than				Bithan
				SimriBakhtiarpur, sonbarasa, B				
25.750000°,86.500000°	25.750000°,86.750000°	25.500000°,86.500000°	25.500000°,86.750000°	adlaghat,Chautham				Badlaghat,Chautham
25.750000°,86.750000°	25.750000°,87.000000°	25.500000°,86.750000°	25.500000°,87.000000°	Kurman, Udakishanganj				Udakishanganj
				RampurParhat, Chausa, Dhamd				
25.750000°,87.000000°	25.750000°,87.250000°	25.500000°,87.000000°	25.500000°,87.250000°	aha				Chausa, Dhamdaha

25.750000°,87.250000°	25.750000,87.500000°	25.500000°,87.250000°	25.500000,87.500000°	Dumar, Phulwaria, Kora				Kora
				Khanwan,Katihar,Raghunatpu				
25.750000,87.500000°	25.750000°,87.750000°	25.500000,87.500000°	25.500000,87.750000°	r				Katihar,Raghunatpur
25.750000°,87.750000°	25.750000,88.000000°	25.500000,87.750000°	25.500000,88.000000°	Azamnagar, salmari				Azamnagar
25.500000°,84.000000°	25.50000°,84.250000°	25.250000°,84.000000°	25.250000°,84.250000°		765 kV SC Gaya-Ballia	Tower- 86/1-75/1	POWERGRID	Dhansoi
25.50000°,84.250000°	25.50000°,84.500000°	25.250000°,84.250000°	25.250000°,84.500000°		220 kV DC Pusauli- Ara	Tower- 207-273	POWERGRID	Jagdishpur
25.500000°,84.500000°	25.50000°,84.750000°	25.250000°,84.500000°	25.250000°,84.750000°		400 kV Biharsharif -Ballia Line	Tower- 270-245	POWERGRID	Arrah
25.500000°.84.750000°	25,500000°.85.000000°	25.250000°.84.750000°	25.250000°.85.000000°		400 kV Biharsharif -Ballia Line	Tower- 214-174	POWERGRID	Bikram
25.500000°.85.000000°	25,500000°.85,250000°	25.250000°.85.000000°	25.250000°.85.250000°		400 kV Biharsharif -Ballia Line	Tower- 140-104	POWERGRID	Masaurhi
25.500000°.85.250000°	25,500000°.85,500000°	25.250000°.85.250000°	25.250000°.85.500000°		400 kV DC Kahalgaon- Patna	Tower- 650-602	POWERGRID	Chandi
25.500000°.85.500000°	25.50000°.85.750000°	25.250000°.85.500000°	25.250000°.85.750000°		400 kV DC Kahalgaon- Patna	Tower- 575-535	POWERGRID	Basti
					400 kV DC LILO of Patna-			
					Kahalgaon at Barh (Barh-Patna)			
25 500000° 85 750000°	25 500000° 86 000000°	25 250000° 85 750000°	25 250000° 86 000000°		F1-018 Final	Tower- 10-55	POWERGRID	Sirshi
25 500000° 86 000000°	25.500000° 86.250000°	25.250000° 86.000000°	25.250000° 86.250000°	Bihat Begusarai Barhiya		101101 10 00	1011211011D	Begusarai Barhiya
25.500000°,86.250000°	25.500000°,86.500000°	25.250000°,86.250000°	25.250000°,86.500000°	bindt, begusarai, barniya	400 kV DC Kabalgaon- Patna	Tower- 320-290	POWERGRID	lamalnur
25.500000°,86.500000°	25.500000°,86.750000°	25.250000°,86.500000°	25.250000°,86.750000°		400 kV DC Kahalgaon- Patna	Tower- 257-228	POWERGRID	Gangania
25.500000°,86.750000°	25.500000°,80.750000°	25.250000°,86.750000°	25.250000 ,80.750000	Nagarpara Narkatia		10WCI 237 220	TOWERGRID	Nagarnara
25.500000°,80.750000°	25.500000°,87.000000°	25.250000 ,80.750000	25.250000 ,87.000000 25.250000° 87.250000°	Naugachia Kabalgaon				Naugachia
25.500000 ,87.000000	25.500000 ,87.250000	25.250000 ,87.000000	25.250000 ,87.250000	EkchariDivara Mathuranur				EkchariDivara
23.300000 ,87.230000	23.300000,87.300000	23.230000 ,87.230000	23.230000 ,87.300000		122 kV SC Dobri Busauli Mobria			LKCHAHDIyara
25 250000° 82 500000°	25 250000 82 750000°	25 000000 82 500000	25 00000 82 750000°		132 KV SC Denni-rusaun-ivionnia-	Tower- 280-210	POWERGRID	Mohania
23.230000 ,83.300000	23.230000,83.730000	23.000000 ,83.300000	23.000000,83.730000		Karmanasa	10wei-200-210	FOWLINGIND	Iviolialia
25 250000 82 750000°	25 250000° 84 000000°	25 00000 82 750000°	25 000000 84 000000		400 kV/ Bibarsarif Sasaram Lino	Tower- 472-442	POWEPGPID	Siwan
23.230000,83.730000	23.230000 ,84.000000	23.000000,83.730000	23.000000 ,84.000000		400 kV DC Sasaram Bibarcharif	10wei- 472-442	FOWLINGIND	Siwali
25 250000 84 000000	25 250000 84 250000	25 000000 84 000000	25 000000 84 250000			Tower 11/0 18/0	DOWERCRID	Sanihauli
25.250000 ,84.000000	25.250000 ,64.250000	25.000000 ,84.000000	25.000000 ,84.230000	-	Lille-II	Tower- 11/0- 16/0	POWERGRID	Daudaagar
25.250000 ,84.250000	25.250000 ,84.500000	25.000000 ,84.250000	25.000000 ,84.500000	-	100 kV SC Gaya-Ballia	TUWEI- AP36-50/0	POWERGRID	Dauunagai
25 250000 84 500000	25 250000 84 750000	25 000000 84 500000	25 000000 84 750000		400 KV DC Sasaram- Binarsham	Tower 25/2 41/2		Hansnura
25.250000 ,84.500000	25.250000 ,84.750000	25.000000 ,84.500000	25.000000 ,84.750000		Line-II	Tower- 35/2-41/2	POWERGRID	Harispura
25 250000 84 750000	25 250000 85 000000	25 000000 84 750000	25 000000 85 000000		400 KV DC Sasaram- Binarsham	Tower 47/0 52/0		Manihash
25.250000 ,84.750000	25.250000 ,85.000000	25.000000 ,84.750000	25.000000 ,85.000000		Line-II	Tower- 47/0-53/0	POWERGRID	wanjnosn
25 250000 05 000000	25 250000 05 250000	25 000000 05 000000	25 000000 05 250000		400 kV DC Sasaram- Binarsharif	T C7/0 7C/0	DOWEDCHID	tele on one
25.250000*,85.000000*	25.250000*,85.250000*	25.000000*,85.000000*	25.000000*,85.250000*		Line-II	Tower- 67/0-76/0	POWERGRID	Islampur
	25 250000 85 500000	25 000000 85 250000	25 000000 85 500000		400 W/ Dibertonif Constant	Towar 50.20	DOWEDCDID	Dorwolnur
25.250000*,85.250000*	25.250000*,85.500000*	25.000000*,85.250000*	25.000000*,85.500000*		400 kV Binarsarif-Sasaram Line	Tower- 50-20	POWERGRID	Parwaipur
25 250000 05 500000	25 250000 05 3500000	25 000000 05 500000	25 000000 05 7500000		400 KV DC Binarsharif- Kanaigaon		DOLUTRODID	c
25.250000*,85.500000*	25.250000*,85.750000*	25.000000*,85.500000*	25.000000*,85.750000*		Line-II	Tower- 520-185	POWERGRID	Sare
					400 KV Binarsharif-Kanaigaon DC			
25.250000°,85.750000°	25.250000°,86.000000°	25.000000°,85.750000°	25.000000°,86.000000°			10wer- 440-405	POWERGRID	Sneiknpura
25.250000°,86.000000°	25.250000°,86.250000°	25.000000°,86.000000°	25.000000°,86.250000°		400 KV DC Kahalgaon- Patna	10wer- 405-380	POWERGRID	Laknisarai
25.250000°,86.250000°	25.250000°,86.500000°	25.000000°,86.250000°	25.000000°,86.500000°	Abhaipur,Anantpur,Barhat				Barhat
25.250000°,86.500000°	25.250000°,86.750000°	25.000000°,86.500000°	25.000000°,86.750000°		400 kV DC Kahalgaon- Patna	Iower- 207-190	POWERGRID	Tarapur,Kharagpur
25.250000°,86.750000°	25.250000°,87.000000°	25.000000°,86.750000°	25.000000°,87.000000°		400 kV DC Kahalgaon- Patna	Tower- 150-120	POWERGRID	Manoharpur
25.250000°,87.000000°	25.250000°,87.250000°	25.000000°,87.000000°	25.000000°,87.250000°		400 kV DC Kahalgaon- Patna	Tower- 65-40	POWERGRID	Agarpur
25.000000°,83.500000°	25.000000,83.750000°	24.750000°,83.500000°	24.750000, 83.750000°	Lohandi, keshriganj, Tala				Tala

					132 kV SC Dehri-Pusauli-Mohnia-			
25.00000,83.750000°	25.000000°,84.000000°	24.750000, 83.750000°	24.750000°,84.000000°		Karmanasa	Tower-100-84	POWERGRID	Kamahu
25.000000°,84.000000°	25.000000°,84.250000°	24.750000°,84.000000°	24.750000°,84.250000°		400 kV DC Nabinagar- Sasaram	Tower-25/0-15/0	POWERGRID	Dehri
25.000000°,84.250000°	25.000000°,84.500000°	24.750000°,84.250000°	24.750000°,84.500000°		765 kV SC Gaya- Sasaram	Tower-38/6-AP33/0	POWERGRID	Obra, Panchahra
25.000000°,84.500000°	25.000000°,84.750000°	24.750000°,84.500000°	24.750000°,84.750000°		765 kV SC Gaya- Sasaram	Tower-30/6-AP24	POWERGRID	Rafiganj
25.000000°,84.750000°	25.000000°,85.000000°	24.750000°,84.750000°	24.750000°,85.000000°		400 kV Biharsarif-Sasaram Line	Tower-210-189	POWERGRID	Mau
25.000000°,85.000000°	25.000000°,85.250000°	24.750000°,85.000000°	24.750000°,85.250000°	Sonaut, Kurkihar, Maulanagar				Maulanagar
25.000000°,85.250000°	25.000000°,85.500000°	24.750000°,85.250000°	24.750000°,85.500000°	Chandpura, Hisua, Nardiganj				Hisua
25.000000°,85.500000°	25.000000°,85.750000°	24.750000°,85.500000°	24.750000°,85.750000°		400 kV DC Biharsharif- Koderma	Tower-24/0-26/0	POWERGRID	Kadirganj
25.000000°,85.750000°	25.000000°,86.000000°	24.750000°,85.750000°	24.750000°,86.000000°	Arha,Kawakol				Arha
					400 kV DC Biharsharif- Kahalgaon			
25.000000°,86.000000°	25.000000°,86.250000°	24.750000°,86.000000°	24.750000°,86.250000°		Line-II	Tower-370 -360	POWERGRID	Jamui
					400 kV DC Biharsharif- Kahalgaon			
25.000000°,86.250000°	25.000000°,86.500000°	24.750000°,86.250000°	24.750000°,86.500000°		Line-II	Tower-300-270	POWERGRID	Darha,Gidhaur
					400 kV DC Biharsharif- Kahalgaon			
25.000000°,86.500000°	25.000000°,86.750000°	24.750000°,86.500000°	24.750000°,86.750000°		Line-II	Tower-230-205	POWERGRID	Sangrampur
					400 kV DC Biharsharif- Kahalgaon			
25.000000°,86.750000°	25.000000°,87.000000°	24.750000°,86.750000°	24.750000°,87.000000°		Line-II	Tower-160-145	POWERGRID	Banka
24.750000, 83.500000°	24.750000, 83.750000°		24.500000, 83.750000°	Kolhua, Chikta, Adhaura,				Adhaura
24.750000, 83.750000°	24.750000°,84.000000°	24.500000, 83.750000°	24.500000°,84.000000°	Nauhatta, Rehal				Rehal
24.750000°,84.000000°	24.750000°,84.250000°	24.500000°,84.000000°	24.50000°,84.250000°		400 kV DC Nabinagar- Sasaram	Tower-5/8-Deadend gant	POWERGRID	Karma,
				Barnada				
24.750000°,84.250000°	24.750000°,84.500000°	24.50000°,84.250000°	24.500000°,84.500000°	Rampur, Deo, Aurangabad				Aurangabad
24.750000°,84.500000°	24.750000°,84.750000°	24.500000°,84.500000°	24.500000°,84.750000°		765 kV SC Gaya- Sasaram	Tower-AP17/0-14/3	POWERGRID	Madanpur
24.750000°,84.750000°	24.750000°,85.000000°	24.500000°,84.750000°	24.500000°,85.000000°		765 kV SC Gaya- Sasaram	Tower-7/5-AP2/0	POWERGRID	Dariaura
24.750000°,85.000000°	24.750000°,85.250000°	24.500000°,85.000000°	24.500000°,85.250000°		765 kV SC Gaya- Sasaram	Tower-G1/3-4F/0	POWERGRID	Bhadeya
24.750000°,85.250000°			24 500000 05 500000	Estabour Gurps Sirdala				Pajauli
24 7500000 05 5000000	24.750000°,85.500000°	24.50000°,85.250000°	24.500000*,85.500000*	Fateripui,Guipa,Siruaia				Najauli
24.750000*,85.500000*	24.750000°,85.500000° 24.750000°,85.750000°	24.500000°,85.250000° 24.500000°,85.500000°	24.500000°,85.750000°	TolaChehara,Chakai				TolaChehara

Note-Grid Representation



The name of location (village) is written in order of proximity to the centre of the GRID.

Tower shall be identified near to the village preferably not exceeding 10 km from the village for installation of dummy insulator. In case of POWERGRID line, prefered location is middle of identified Towers.

	1				1		1	n
A(Decimal degrees)	B(Decimal degrees)	C(Decimal degrees)	D(Decimal degrees)	Name of Location	Name of Transmission Line	Tower Identification	Owner of Line	Landmark / Near by City
25.000000°,87.250000°	25.000000°,87.500000°	24.750000°,87.250000°	24.750000°,87.500000°		400 kV DC Kahalgaon-Maithon	Tower-126-82	POWERGRID	Godda
25.000000°,87.500000°	25.00000°,87.750000°	24.750000°,87.500000°	24.750000°,87.750000°		400kV DC Farakka-Kahalgaon Line- II	Tower-138-70	POWERGRID	Barharwa
24.750000°,85.750000°	24.750000°,86.000000°	24.500000°,85.750000°	24.500000°,86.000000°		400 kV DC Biharsharif- Koderma	Tower-45/0-65/0	POWERGRID	Gawan
24.750000°,87.000000°	24.750000°,87.250000°	24.500000°,87.000000°	24.500000°,87.250000°		400 kV DC Kahalgaon-Maithon	Tower-215-160	POWERGRID	Hansdiha
24.750000°,87.250000°	24.750000°,87.500000°	24.500000°,87.250000°	24.500000°,87.500000°	Chandna, Tilaipara				Tilaipara
24.750000°,87.500000°	24.750000°,87.750000°	24.500000°,87.500000°	24.500000°,87.750000°	Hiranpur,Litripara				Litripara
	24.500000°,83.7500000°	24.250000°,83.5000000°	24.250000°,83.7500000°	Makri,Kailan,Sinduria,				Sinduria
24.500000°,83.7500000°	24.500000°,84.0000000°	24.250000°,83.750000°	24.250000°,84.0000000°	Mohsinnagar, Majhiaon				Majhiaon
24.500000°,84.0000000°	24.500000°,84.2500000°	24.250000°,84.000000°	24.250000°,84.2500000°	Chhatarpur, Shildag				Gulabjhari
24.500000°,85.0000000°	24.500000°,85.2500000°	24.250000°,85.000000°	24.250000°,85.2500000°		400 kV DC Koderma- Gaya	Tower-28/0-35/0	POWERGRID	Itkori
24.500000°,85.2500000°	24.500000°,85.500000°	24.250000°,85.250000°	24.250000°,85.500000°		400 kV DC Koderma- Gaya	Tower-19/0-11/0	POWERGRID	Singhrawan
24.500000°,85.500000°	24.50000°,85.750000°	24.250000°,85.500000°	24.250000°,85.750000°		400 kV DC Biharsharif- Koderma	Tower-86/1- 77/0	POWERGRID	Jainagar
24.500000°,85.7500000°	24.50000°,86.00000°	24.250000°,85.750000°	24.250000°,86.000000°	Gobindpur,Simaria,Argali				Rajdhanwar
24.500000°.86.0000000°	24.500000°.86.250000°	24.250000°.86.000000°	24.250000°.86.250000°	Jamua.Kharagdiha.Govindatand				Deori
24.500000°.86.5000000°	24.500000°.86.750000°	24.250000°.86.500000°	24.250000°.86.750000°	Kendua.Deoghar				Deoghar
24.500000°.86.7500000°	24.500000°.87.000000°	24.250000°.86.750000°	24.250000°.87.000000°		400 kV DC Biharsharif- Koderma	Tower-250-295	POWFRGRID	Jarmundi
24,500000°.87.0000000°	24,500000°.87.250000°	24.250000°.87.000000°	24.250000°.87.250000°	Jama. Palasi. Jarmundi				Jarmundi
24.500000°.87 2500000°	24.500000° 87 500000°	24.250000° 87 250000°	24.250000° 87 50000°	katikund Amgachhi Gonikandar				Gopikandar
24 500000° 87 500000°	24 500000° 87 750000°	24 250000° 87 50000°	24 250000° 87 750000°	Pakur Maheshnur				Maheshnur
24.250000 ,87.500000	24.250000 ,37.750000	24.000000 82 500000	24.000000 82.750000	Danrai Belri alias Chinia Pampa	<u> </u>			Danrai
24.230000 ,03.3000000	24.230000 84.000000	24.000000 ,05.3000000	24.00000 84.00000	Panka, Tiluag Carbawa				Carbawa
24.250000 ,83.750000	24.250000 ,84.000000	24.000000 ,83.750000	24.000000 ,84.000000	Nalika, Hludg,OdHldWa	+			GarildWd Datan Locligani
24.250000,84.000000	24.250000 ,84.250000	24.000000 ,84.000000	24.000000 ,84.250000	Dartenganj, Patan, Lesliganj	l			raidii,Lesiiganj
24.250000°,84.250000°	24.250000°,84.500000°	24.000000°,84.250000°	24.000000°,84.500000°	Pauurna,ivianatu,panki				wanatu
24.250000°,84.500000°	24.250000°,84.750000°	24.000000°,84.500000°	24.00000°,84.750000°	Pinjni, ligda, Kundu				Kundu
24.250000°,84.750000°	24.250000°,85.000000°	24.000000°,84.750000°	24.000000°,85.000000°	Chatra,Simaria Kalan				Chatra
24.250000°,85.000000°	24.250000°,85.250000°	24.000000°,85.000000°	24.000000°,85.250000°	Bariatu, Gidhaur, Kotkamsari				Gidhaur
24.250000°,85.250000°	24.250000°,85.500000°	24.000000°,85.250000°	24.000000°,85.500000°	ļ	400 kV DC Maithon- Gaya	Tower-AP157-AP142	POWERGRID	Padma
24.250000°,85.500000°	24.250000°,85.750000°	24.000000°,85.500000°	24.000000°,85.750000°		400 kV DC Maithon- Gaya	Tower-AP130-AP118	POWERGRID	Kudar
24.250000°,85.750000°	24.250000°,86.000000°	24.000000°,85.750000°	24.000000°,86.000000°		400 kV Koderma- Bokaro	Tower-33/0-44A/0	POWERGRID	Saria
24.250000°,86.000000°	24.250000°,86.250000°	24.000000°,86.000000°	24.00000°,86.250000°	Baghmara, Pararmania, koyridih				Chirki
24.250000°,86.250000°	24.250000°,86.500000°	24.000000°,86.250000°	24.000000°,86.500000°	Giridih,Gande				Giridih
24.250000°,86.500000°	24.250000°,86.750000°	24.000000°,86.500000°	24.000000°,86.750000°	Koridih,Karmatam,Karon				Koridih
24.250000°,86.750000°	24.250000°,87.000000°	24.000000°,86.750000°	24.000000°,87.000000°		400 kV DC Kahalgaon-Maithon	Tower-330-381	POWERGRID	Fatehpur
24.250000°,87.000000°	24.250000°,87.250000°	24.000000°,87.000000°	24.000000°,87.250000°	Naosar, Masalia				Masalia
24.250000°,87.250000°	24.250000°,87.500000°	24.000000°,87.250000°	24.000000°,87.500000°	Asanbani, Ranishwar, Sikaripara				Sikaripara
24.000000°,83.5000000°	24.000000°,83.750000°	23.750000°,83.5000000°	23.750000°,83.750000°	Rampura, Bardari, Bisrampur				Bisrampur
24.000000°,83.750000°	24.000000°,84.000000°	23.750000°,83.750000°	23.750000°,84.000000°	Chapri, Ramkanda, Rodo		l l	İ	Rodo
24.000000°.84.000000°	24.000000°.84.250000°	23.750000°.84.000000°	23.750000°.84.250000°	Barwadiha.Betla	1			Barwadiha
24.000000°.84 250000°	24.000000° 84 500000°	23.750000° 84 250000°	23.750000° 84 500000°	Aunratanr.Manika			1	Manika
24 000000° 84 50000°	24 000000° 84 750000°	23 750000° 84 50000°	23 750000° 84 750000	Porsam Nawada Humbu			1	Porsam
24.000000 ,04.00000	24.000000 ,84.750000	23.750000 ,84.750000	23.750000 ,84.750000	Nagra Bariatu Balumath	<u> </u>			Balumath
24.000000 ,04.730000	24.000000 ,85.000000	23.730000 ,84.730000	23.750000,85.000000	Reltu Barkagaon Tandwa				Tandwa
24.000000 ,65.000000	24.000000 ,65.250000	23.730000,85.000000	23.730000,65.230000	Morangi Hazaribagh Mandu	+	<u> </u>		Hazaribagh
24.000000 ,85.250000	24.000000 ,85.500000	23.750000,85.250000	23.750000,85.500000	iviorarigi,mazaribagn,iVianou	l			naZd110dg11
24.000000°,85.500000°	24.000000,85.750000°	23.750000°,85.500000°	23.750000°,85.750000°	Jumara,Kola	100 b) (Kadamaa Dali	T	DOINEDCOID	parugnutu Cumin
24.00000°,85.750000°	24.00000°,86.000000°	23.750000°,85.750000°	23.750000°,86.000000°		400 KV KOđerma- Bokaro	10wer-59/0-88/0	POWERGRID	Gumia
24.00000°,86.000000°	24.00000°,86.250000°	23.750000°,86.000000°	23.750000°,86.250000°		400 KV DC Maithon- Gaya	Tower-AP89-AP81	POWERGRID	Dumri
24.00000°,86.250000°	24.00000°,86.500000°	23.750000°,86.250000°	23.750000°,86.500000°		400 KV DC Maithon- Gaya	Iower-AP51-AP43	POWERGRID	Unanbad
24.000000°,86.500000°	24.00000°,86.750000°	23.750000°,86.500000°	23.750000°,86.750000°		400 kV DC Maithon- Gaya	Tower-AP32/0-AP22/0	POWERGRID	Pokhria
24.000000°,86.750000°	24.000000°,87.000000°	23.750000°,86.750000°	23.750000°,87.000000°		400 kV DC Kahalgaon-Maithon	Tower-434-454	POWERGRID	Geria
24.000000°,87.000000°	24.000000°,87.250000°	23.750000°,87.000000°	23.750000°,87.250000°	Kundahit, Sarasbad	ļ	<u> </u>		Sarasad
23.750000°,83.750000°	23.750000°,84.000000°	23.500000°,83.750000°	23.500000°,84.000000°	Paraswar,Sangali,Bhandaria				Bhandaria
23.750000°,84.000000°	23.750000°,84.250000°	23.500000°,84.000000°	23.500000°,84.250000°	Baresanr, Maromar				Garu
23.750000°,84.250000°	23.750000°,84.500000°	23.500000°,84.250000°	23.500000°,84.500000°	Jamti,Rol,Dabri,Chanpi				Jamti
23.750000°,84.500000°	23.750000°,84.750000°	23.500000°,84.500000°	23.500000°,84.750000°	Khiriwar alias Kharcha, Bari				Bari
23.750000°,84.750000°	23.750000°,85.000000°	23.500000°,84.750000°	23.500000°,85.000000°	Dumaro, Mccluskieganj, kuru				Kuru
23.750000°,85.000000°	23.750000°,85.250000°	23.500000°,85.000000°	23.500000°,85.250000°	Siram,Churi				Churi
					400 kV DC Ranchi 765- Ranchi 400			
23.750000°.85.250000°	23.750000°.85.500000°	23.500000°.85.250000°	23.500000°.85.500000°		Interconnect Line-II	Tower-47/0-43A/0	POWFRGRID	Hariharpur
23.750000° 85 50000°	23.750000° 85 750000°	23.500000° 85 500000°	23.500000° 85 750000°		400 kV DC Maithon (RB)- Ranchi	Tower-129/0-118/0	POWFRGRID	Gola
23 750000° 85 750000°	23 750000° 86 00000°	23 500000° 85 750000°	23 500000° 86 00000°	Peterbar Kasmar				Kasmar
23.750000 86.00000	23 750000 86 250000	23 500000 86 00000	23 500000 86 250000	r eter barjitasmar	400 kV DC Maithon (PB)- Panchi	Tower-79/0-70/0	POWERGPID	Chas
23.750000,00.000000	23.750000,00.230000	23 500000 ,80.000000	23.500000,80.250000	1	400 kV DC Maithon (RP) Panchi	Tower-51/0-40/0	DOW/ERGPID	Sindri
23.730000,00.230000	23.750000,84,350000	23.300000 84.000000	23.300000,84.350000	Cobar Ambaatali Jairagi		10wei-31/0-40/0	FOWERGRID	Jinuri
23.500000°,84.000000°	23.500000°,84.250000°	23.250000°,84.000000°	23.250000°,84.250000°	Sonar,Amboatoli,Jairagi		1		Jairagi

23.500000°,84.250000°	23.500000°,84.500000°	23.250000°,84.250000°	23.250000°,84.500000°	Chipri,Banari,Paunri				Paunri
23.500000°,84.500000°	23.500000°,84.750000°	23.250000°,84.500000°	23.250000°,84.750000°	Ekaguri,Lohardaga,Naudiha				Lohardaga
23.500000°,84.750000°	23.500000°,85.000000°	23.250000°,84.750000°	23.250000°,85.000000°		400 kV DC Ranchi- Sipat (up to Pilki)	Tower-160-150	POWERGRID	Cahram
					400 kV DC Ranchi 765- Ranchi 400			
23.500000°,85.000000°	23.500000°,85.250000°	23.250000°,85.000000°	23.250000°,85.250000°		Interconnect Line-I	Tower-52/0-48/0	POWERGRID	Mandar
23.500000°,85.250000°	23.500000°,85.500000°	23.250000°,85.250000°	23.250000°,85.500000°		400 kV DC Ranchi-Maithon	Tower-534-512	POWERGRID	Tatisiliwai,Ranchi
23.500000°,85.500000°	23.500000°,85.750000°	23.250000°,85.500000°	23.250000°,85.750000°		400 kV DC Ranchi-Maithon	Tower-470-445	POWERGRID	Guridih
23.500000°,85.750000°	23.500000°,86.000000°	23.250000°,85.750000°	23.250000°,86.000000°		400 kV DC Ranchi-Maithon	Tower-402-384	POWERGRID	Silli
23.250000°,84.250000°	23.250000°,84.500000°	23.000000°,84.250000°	23.000000°,84.500000°	Chainpur,Dumri				Dumri
23.250000°,84.500000°	23.250000°,84.750000°	23.000000°,84.500000°	23.000000°,84.750000°		400 kV DC Ranchi- Sipat (up to Pilki)	Tower-290-250	POWERGRID	Gumla
23.250000°,84.750000°	23.250000°,85.000000°	23.000000°,84.750000°	23.000000°,85.000000°		400 kV DC Ranchi- Sipat (up to Pilki)	Tower-212-198	POWERGRID	Bharno
23.250000°,85.000000°	23.250000°,85.250000°	23.000000°,85.000000°	23.000000°,85.250000°	Anrotoli,Kara,Gobindpur				Kara
23.250000°,85.250000°	23.250000°,85.500000°	23.000000°,85.250000°	23.000000°,85.500000°		400 kV DC Ranchi- Sipat (up to Pilki)	Tower-47-32	POWERGRID	Kalamati
23.250000°,85.500000°	23.250000°,85.750000°	23.000000°,85.500000°	23.000000°,85.750000°	Bundu, Tamar, Sonahatu				Bundu
23.250000°,85.750000°	23.250000°,86.000000°	23.000000°,85.750000°	23.000000°,86.000000°	Situ,Tikar				Situ
23.000000°,84.750000°	23.000000°,85.000000°	22.750000°,84.750000°	22.750000°,85.000000°		400 kV DC Ranchi- Sipat (up to Pilki)	Tower-345-311	POWERGRID	Palkot
23.000000°,85.000000°	23.000000°,85.250000°	22.750000°,85.000000°	22.750000°,85.250000°	Bakaspur,Surhu,Basia				Basia
23.000000°,85.250000°	23.00000°,85.500000°	22.750000°,85.250000°	22.750000°,85.500000°	Torpa,Jaipur				Torpa
23.000000°,85.500000°	23.00000°,85.750000°	22.750000°,85.500000°	22.750000°,85.750000°	Bandgaon,Hesadi				Hesadi
23.000000°,85.750000°	23.000000°,86.000000°	22.750000°,85.750000°	22.750000°,86.000000°	Sinjani,Baruhatu,Kuchai				Baruhatu
23.000000°,86.000000°	23.000000°,86.250000°	22.750000°,86.000000°	22.750000°,86.250000°	Turu,Ranka,Urmal				Khunti
					220 kV SC Ramchandrapur- Chandil (JSEB			
23.000000°,86.250000°	23.000000°,86.500000°	22.750000°,86.250000°	22.750000°,86.500000°		Line)	Tower-60-100	POWERGRID	Chandil
23.000000°,86.500000°	23.000000°,86.750000°	22.750000°,86.500000°	22.750000°,86.750000°	Poklabera, Patamda				Patamda
	22.750000°,84.250000°	22.500000°,84.000000°	22.500000°,84.250000°	Gariajor,Hethma,Kurdeg				Hethma
22.750000°,84.250000°	22.750000°,84.500000°	22.500000°,84.250000°	22.500000°,84.500000°	Kochedega,Birkera,Masekera				Simdega
22.750000°,84.500000°	22.750000°,84.7500000°	22.500000°,84.500000°	22.500000°,84.750000°	Bandarchuan, Taisera, Arani, Tamra				Kolebira
22.750000°,84.7500000°	22.750000°,85.000000°	22.500000°,84.750000°	22.500000°,85.000000°	Lachragarh,Jaldega,Bano				Bano
22.750000°,85.000000°	22.750000°,85.250000°	22.500000°,85.000000°	22.500000°,85.250000°	Saubera, Ramjal				Saubera
22.750000°,85.250000°	22.750000°,85.500000°	22.500000°,85.250000°	22.500000°,85.500000°		400 kV SC Jamshedpur- Rourkela Line-I	Tower-243-228	POWERGRID	Sonua
22.750000°,85.500000°	22.750000°,85.750000°	22.500000°,85.500000°	22.500000°,85.750000°		400 kV SC Jamshedpur- Rourkela Line-I	Tower-144-127	POWERGRID	Chakardharpur
22.750000°,85.750000°	22.750000°,86.000000°	22.500000°,85.750000°	22.500000°,86.000000°		400 kV SC Jamshedpur- Rourkela Line-II	Tower-90-70	POWERGRID	Saraikela
22.750000°,86.000000°	22.750000°,86.250000°	22.500000°,86.000000°	22.500000°,86.250000°		400 kV DC Jamshedpur- Baripada	Tower-14/0-24/0	POWERGRID	Gobindpur
22.750000°,86.250000°	22.750000°,86.500000°	22.500000°,86.250000°	22.500000°,86.500000°		400 kV DC Jamshedpur- Baripada	Tower-36/0-48/0	POWERGRID	Jadugora
22.750000°,86.500000°	22.750000°,86.750000°	22.500000°,86.500000°	22.500000°,86.750000°		400 kV DC Jamshedpur- Baripada	Tower-53/0/0-63/2	POWERGRID	Dhalbhumgarh
22.500000°,84.250000°	22.500000°,84.500000°	22.250000°,84.250000°	22.250000°,84.500000°	Bolba,Kadopani,Alingburu				Bolba
22.500000°,85.000000°	22.500000°,85.250000°	22.250000°,85.000000°	22.250000°,85.250000°		400 kV SC Jamshedpur- Rourkela Line-II	Tower-346-326	POWERGRID	Manoharpur
22.500000°,85.250000°	22.500000°,85.500000°	22.250000°,85.250000°	22.250000°,85.500000°	Banki, Hinua, Tuebera				Jamkundia
22.500000°,85.500000°	22.500000°,85.750000°	22.250000°,85.500000°	22.250000°,85.750000°	Bambaisai, Palisai, Kenjra				Kenjra
22.500000°,85.750000°	22.500000°,86.000000°	22.250000°,85.750000°	22.250000°,86.000000°	Tonto, Jaldhar, Jhinkpani				Jhinkpani
22.500000°,86.250000°	22.500000°,86.500000°	22.250000°,86.250000°	22.250000°,86.500000°	Haludbani, Dumriya, Paruliya				Paruliya
22.500000°,86.500000°	22.500000°,86.750000°	22.250000°,86.500000°	22.250000°,86.750000°		400 kV DC Jamshedpur- Baripada	Tower-73/0/0-78/0	POWERGRID	Jhariya
22.250000°,85.000000°	22.250000°,85.250000°	22.000000°,85.000000°	22.000000°,85.250000°	Baliba, Thaikobad, Tinilposi				Meghahatuburu
22.250000°,85.500000°	22.250000°,85.750000°	22.000000°,85.500000°	22.000000°,85.750000°	Maluka, Dangoaposi, Jagnathpur				Jagnathpur
22.250000°,85.750000°	22.250000°,86.000000°	22.000000°,85.750000°	22.000000°,86.000000°	Majhgaon, Kumardungi, Ghorabandha				Kumardungi

Note-Grid Representation



The name of location (village) is written in order of proximity to the centre of the GRID. Tower shall be identified near to the village preferably not exceeding 10 km from the village for installation of dummy insulator . In case of POWERGRID line, prefered location is middle of identified Towers.

Destroncy Automot         Performance Automot         Performance Automot         Performance Automot         Performance Automot         Performance Automot         Performance Automot           2.000007 AUGOU         2.000007 AUGOU         2.200007 AUGOU         2.200007 AUGOU         Performance Automot	A(Decimal degrees)	B(Decimal degrees)	C(Decimal degrees)	D(Decimal degrees)	Name of Location	Name of Transmission Line	Tower Identification	Owner of Line	Landmark / Near by City
12.50007/s15000     2.50007/s15000     2.50007/s15	22.500000°,84.000000°	22.500000°,84.250000°	22.250000°,84.000000°	22.250000°,84.250000°	Talsara, Balisankara, Subdega				Talsara
21.50007/8.70007     22.50007/8.70007 <td>22.500000°,84.500000°</td> <td>22.500000°,84.750000°</td> <td>22.250000°,84.500000°</td> <td>22.250000°,84.750000°</td> <td>Raiboga, Kadobahal, Bartoli</td> <td></td> <td></td> <td></td> <td>Raiboga</td>	22.500000°,84.500000°	22.500000°,84.750000°	22.250000°,84.500000°	22.250000°,84.750000°	Raiboga, Kadobahal, Bartoli				Raiboga
Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner         Partner         Partner           Partner         Partner         Partner         Partner         Partner         Partner         Partner         Partner         Partner	22.500000°,84.750000°	22.500000°,85.000000°	22.250000°,84.750000°	22.250000°,85.000000°		400 kV DC Rourkela - Raigarh	Tower-1105-1138	POWERGRID	Khutgan
shore         galaxy shore         galaxy shore         galaxy shore         galaxy shore         galaxy shore           212000740000         212000740000         20000741000         2	22.500000°,86.000000°	22.500000°,86.250000°	22.250000°,86.000000°	22.250000°,86.250000°	BasingiVillage, Anandpur, Jharadihi				Jharadihi
21250000/14.00000         213000/14.00000         213000/14.0		22.250000°,84.000000°	22.000000°,83.750000°	22.000000°,84.000000°	Lephripara, Ujalpur, Telendihi				Lephripara
21250007432000         212000743200         212000743200         212000743200         212000743200         212000743200         212000743200         212000743200<	22.250000°,84.000000°	22.250000°,84.250000°	22.000000°,84.000000°	22.000000°,84.250000°	Karamdihi, Jharangloi, Sundargarh				Sundargarh
212.50007/s1.500021.00007/s1.500021.	22.250000°,84.250000°	22.250000°,84.500000°	22.000000°,84.250000°	22.000000°,84.500000°		400 kV DC Rourkela - Raigarh	Tower-945-985	POWERGRID	Pindhapathar
21.2000/5.500021.0000/5.000020.00	22.250000°,84.500000°	22.250000°,84.750000°	22.000000°,84.500000°	22.000000°,84.750000°		400 kV DC Rourkela - Raigarh	Tower-1020-1060	POWERGRID	Rajganpur
12.25000/3.50000     2.20000/3.510000     2.20000/3.51000     2.20000/3.50000     2.20000/3.5000     2.2000/	22.250000°,84.750000°	22.250000°,85.000000°	22.000000°,84.750000°	22.000000°,85.000000°		Talcher-Raurkela Line	Tower-430-390	POWERGRID	Rourkela
12.25007.8.000     2.20007.8.000     2.00007.8.000     2.00007.8.000     1.0	22.250000°,85.250000°	22.250000°,85.500000°	22.000000°,85.250000°	22.000000°,85.500000°	Barbil,Balagoda,Raeka				Barbil
12.25007.8500     2.20007.8500     2.20007.8500     2.00007.8500     POMEGNO     Rojo       2.25007.8507     7.0007.8500     1.00007.8500     0.0007.8500     0.0007.8500     POMEGNO     Rojo       2.00007.8500     2.00007.8500     1.70007.8500     1.70007.8500     0.0007.8500     Rojo     Rojo       2.00007.8500     2.00007.8500     1.70007.8500     1.70007.8500     Rojo     Rojo     Rojo       2.00007.8500     2.00007.8500     1.70007.8500     Rojo     Rojo     Rojo       2.00007.8500     1.70007	22.250000°,86.000000°	22.250000°,86.250000°	22.000000°,86.000000°	22.000000°,86.250000°	Aharbandh, Joypur, Badampahar				Manda
P12.50007.87.000         P2.00007.87.000         P2.00007.	22.250000°,86.250000°	22.250000°,86.500000°	22.000000°,86.250000°	22.000000°,86.500000°	Dhana, Bisoi, Hatibari				Bisoi
122222200 <th< td=""><td>22.250000°,86.500000°</td><td>22.250000°,86.750000°</td><td>22.000000°,86.500000°</td><td>22.000000°,86.750000°</td><td></td><td>400 kV DC Jamshedpur- Baripada</td><td>Tower-84/0-95/0</td><td>POWERGRID</td><td>Rajaloka</td></th<>	22.250000°,86.500000°	22.250000°,86.750000°	22.000000°,86.500000°	22.000000°,86.750000°		400 kV DC Jamshedpur- Baripada	Tower-84/0-95/0	POWERGRID	Rajaloka
12.000007.81.75000     12.00007.81.75000     17.0007.81.25000     17.0007.84.25000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000     17.0007.85.2000		22.000000°,83.750000°		21.750000°,83.750000°		400 kV DC Rourkela - Raigarh	Tower-650-700	POWERGRID	Chhuipali,Kanika
12.0000/3.4.0000     21.5000/3.4.2000     1.75000/3.4.2000     1.75000/3.4.2000     Mahdaha Shahaga     MoU KC Rounkels neight     POWE Reg ID     Beams       20.0000/3.4.5000     20.0000/3.4.5000     1.75000/3.4.5000     Kalanda Kandeha Shahaga     Tader-Raurkel Line     Tower-34.5 80     POWE Reg ID     Fower-34.5 80	22.000000°,83.750000°	22.000000°,84.000000°	21.750000°,83.750000°	21.750000°,84.000000°		400 kV DC Rourkela - Raigarh	Tower-740-800	POWERGRID	Belpahar
21.00007.41.5000       21.750007.45.0000       17.50007.45.0000 <t< td=""><td>22.000000°,84.000000°</td><td>22.000000°,84.250000°</td><td>21.750000°,84.000000°</td><td>21.750000°,84.250000°</td><td></td><td>400 kV DC Rourkela - Raigarh</td><td>Tower-845-880</td><td>POWERGRID</td><td>Bhasma</td></t<>	22.000000°,84.000000°	22.000000°,84.250000°	21.750000°,84.000000°	21.750000°,84.250000°		400 kV DC Rourkela - Raigarh	Tower-845-880	POWERGRID	Bhasma
12.000007 84.75000         20.00007 84.75000         21.750007 84.75000         21.750007 84.75000         Condensity and the second	22.000000°,84.250000°	22.000000°,84.500000°	21.750000°,84.250000°	21.750000°,84.500000°	Bhalubahal, Khandokata, Solbaga	-			Kochinda
2         2         3         2         3         3         7         Talder Raurkela Line         Tower 335-31         POWERGID         Degring           2.000007 8.050000         2.000007 8.550000         2.050007 8.550000         2.050007 8.550000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.55000         2.050007 8.50000         2.050007 8.50000         2.050007 8.50000         2.050007 8.50000         2.050007 8.50000         2.050007 8.5000         2.0500	22.000000°,84.500000°	22.000000°,84.750000°	21.750000°,84.500000°	21.750000°,84.750000°	Kelo, Janda, Kundheidiha				Kundheidiha
12 000007 #5.00000         2 000007 #5.00000         2 750007 \$5.00000         2 750007 \$5.00000         2 750007 \$5.	22.000000°,84.750000°	22.000000°,85.000000°	21.750000°,84.750000°	21.750000°,85.000000°	,	Talcher-Raurkela Line	Tower-335-315	POWERGRID	Darjing
22.000007,85.20000       22.00007,85.20000       21.750007,85.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,84.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,85.20000       21.500007,	22.000000°.85.000000°	22.000000°.85.250000°	21.750000°.85.000000°	21.750000°.85.250000°	Jamudihi.Bakhartola.Tensa				Tensa
12 000007, 85 50000         21,750007, 85 50000         21,50007, 85 50	22.000000°.85.250000°	22.000000°.85.500000°	21.750000°.85.250000°	21.750000°.85.500000°	Joda.Navagarh				Navagarh
12 00000*/85 57000       12 50000*/85 57000       12 50000*/85 52000       12 5000*/85 52000       12 5000*/85 52000       12 5000*/85 52000       12 5000*/85 52000       12 5000*/85 52000       12 5000*/85 52000       12 5000*/85 520	22.000000°.85.500000°	22.000000°.85.750000°	21.750000°.85.500000°	21.750000°.85.750000°	Parsora.Baria				Baria
12.00000°, 86.00000         21.75000°, 86.50000         21.75000°, 86.50000         12.75000°, 86.50000         12.75000°, 86.50000         12.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.75000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 86.50000         21.5000°, 85.50000	22.000000°.85.750000°	22.000000°.86.000000°	21.750000°.85.750000°	21.750000°.86.000000°	Jamunti, Raruan.				Tilakuti
22.000007/86.570000       20.000007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.750007/86.570000       21.50007/86.570000       21.50007/86.570000       21.50007/86.570000       21.50007/86.570000       21.500007/86.570000	22.000000°.86.000000°	22.000000°.86.250000°	21.750000°.86.000000°	21.750000°.86.250000°	Baranga, Suanpal.				Handipuhan
22.000000*/85.70000       22.00000*/87.70000       21.75000*/85.70000       21.75000*/85.700000       21.75000*/85.700000       21.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.700000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.75000*/85.70000       11.5000*/85.70000	22.000000°.86.250000°	22.000000°.86.500000°	21.750000°.86.250000°	21.750000°.86.500000°	Budhabalanga.Haldia				Haldia
12.0000°,87.0000       21.0000°,87.0000       17.5000°,87.0000 <td< td=""><td>22.000000°.86.500000°</td><td>22.000000°.86.750000°</td><td>21.750000°.86.500000°</td><td>21.750000°.86.750000°</td><td>Sankerko.Baripada</td><td></td><td></td><td></td><td>Baripada</td></td<>	22.000000°.86.500000°	22.000000°.86.750000°	21.750000°.86.500000°	21.750000°.86.750000°	Sankerko.Baripada				Baripada
22.00000*/87.00000         21.75000*/87.00000         21.75000*/87.00000         21.75000*/87.00000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.75000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/84.50000         21.5000*/85.5000         21.5000*/85.5000         21.5000*/85.5000         21.5000*/85.5000         21.5000*/85.5000         21.5000*/85.5000 <td>22.000000°.86.750000°</td> <td>22.000000°.87.000000°</td> <td>21.750000°.86.750000°</td> <td>21.750000°.87.000000°</td> <td>Pratapchandrapur.Anua.Silda</td> <td></td> <td></td> <td></td> <td>Muruda</td>	22.000000°.86.750000°	22.000000°.87.000000°	21.750000°.86.750000°	21.750000°.87.000000°	Pratapchandrapur.Anua.Silda				Muruda
21.75000*,84.25000*///       21.50000*,84.25000*////       21.50000*,84.25000*////       21.50000*,84.25000*////       Hirakund Reservoir         21.75000*,84.25000*////       21.50000*,84.25000*////       21.50000*,84.25000*////       21.5000*/84.25000*////       Pravasuni         21.75000*////       21.5000*////       21.5000*///       84.5000*///       Pravasuni       Pravasuni         21.75000*///       21.5000*///       84.5000*//       21.5000*///       Pravasuni       Pravasuni         21.75000*///       21.5000*//       85.0000*//       21.5000*//       S5.0000*//       Pravasuni       Pravasuni         21.75000*///       21.5000*//       85.0000*//       21.5000*//       S5.0000*//       Pravasuni       Tuladihi         21.75000*//       21.5000*//       21.5000*//       S5.0000*/       21.5000*//       S5.0000*//       Tuladihi       Tangarada         21.75000*/       85.50000*/       21.5000*//       S5.50000*/       21.5000*//       S5.5000*/       Tangarada	22.000000°.87.000000°	,	21.750000°.87.000000°	21.750000°.87.250000°	Bhodua.Lakshmannath.Olmara				Lakshmannath
21.75000*8.4.250000       21.75000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.450000       21.50000*8.52000       21.50000*8.52000       21.50000*8.52000       21.50000*8.52000       21.50000*8.52000       21.50000*8.52000       21.50000*8.52000       21.50000*8.52000       21.50000*8.550000       21.50000	21.750000°.84.000000°	21.750000°.84.250000°	21.500000°.84.000000°	21,500000°.84,250000°	Rengali.Mahulmunda				Hirakund Reservoir
21.75000/84.750000       21.75000/84.750000       21.50000/84.750000       21.50000/84.750000       21.50000/84.750000       21.50000/84.750000       21.50000/84.750000       21.50000/85.00000       21.50000/85.00000       21.50000/85.00000       21.50000/85.00000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/85.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/86.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000       21.50000/87.50000	21.750000°.84.250000°	21.750000°.84.500000°	21.500000°.84.250000°	21,500000°.84,500000°	Bhoipur.Fasimal				Bhoipur
21.750000*,84.750000*       21.750000*,85.200000*       21.50000*,85.200000*       21.50000*,85.200000*       21.50000*,85.200000*       21.50000*,85.20000       21.50000*,85.20000       21.50000*,85.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,86.20000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       21.50000*,87.2000*       <	21.750000°.84.500000°	21.750000°.84.750000°	21.500000°.84.500000°	21,500000°.84,750000°	Jhargogua, Phulapatharakh				Pravasuni
21.750000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000       21.50000*,87.750000	21.750000°,84.750000°	21.750000°,85.000000°	21.500000°,84.750000°	21.500000°,85.000000°		Talcher-Raurkela Line	Tower-225-190	POWERGRID	Ambagaon
21.750000*85.250000       21.500000*85.250000       21.500000*85.250000       21.500000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*85.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.250000       21.50000*86.550000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000       21.50000*87.50000	21.750000°.85.000000°	21.750000°.85.250000°	21.500000°.85.000000°	21,500000°.85,250000°	Kunu.Outal.Fulihar				Fulihar
21.750000*,85.750000       21.50000*,85.750000       21.50000*,85.750000       21.50000*,85.750000       21.50000*,85.750000       21.50000*,85.750000       21.50000*,85.750000       21.50000*,85.750000       21.50000*,86.250000       21.50000*,86.250000       21.50000*,86.250000       21.50000*,86.500000       21.50000*,86.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.5000*,87.50000       21.5000*,87.50000       21.5000*,87.50000       21.5000*,87.50000       21.5000*,87.5000       21.5000*,87.5000       21.5000*,87.5000       21.5000*,87.5000       21.5000*	21.750000°,85.250000°	21.750000°,85.500000°	21.500000°,85.250000°	21.500000°,85.500000°	Saharpur, Adala, Tuladihi				Tuladihi
21.750000°,85.75000°       21.50000°,86.00000°       21.50000°,85.75000°       21.50000°,86.00000°       21.50000°,86.00000°       21.50000°,86.00000°       21.50000°,86.00000°       21.50000°,86.25000°       Xendurundi,Januposi       Kendurundi         21.75000°,86.50000°       21.50000°,86.50000°       21.50000°,86.50000°       21.50000°,86.50000°       Xandursahi       Sarukana         21.75000°,86.50000°       21.50000°,86.50000°       21.50000°,86.50000°       21.50000°,87.0000°       Kadikapada,Sarukana       Sarukana         21.75000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       Kundai,Dunda,Baniadiha       AmardaRd         21.75000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       Batagan,Bhagari,Balagal       MardaRd         21.50000°,87.25000°       21.50000°,87.25000°       21.25000°,87.50000°       Batagan,Bhagari,Balagal       Atabira         21.50000°,87.25000°       21.50000°,87.25000°       21.25000°,87.50000°       Bargarh,Katapal       Atabira         21.50000°,84.25000°       21.25000°,84.25000°       21.25000°,84.25000°       21.25000°,84.25000°       Butel,Bhulki,Loisingha       Iayantpur         21.50000°,84.75000°       21.25000°,84.75000°       21.25000°,84.50000°       21.25000°,84.50000°       S1.25000°,84.50000°       Butel,Bhulki,Loisingha       Iayantpur       Balipashi <tr< td=""><td>21.750000°.85.500000°</td><td>21.750000°.85.750000°</td><td>21.500000°.85.500000°</td><td>21.500000°.85.750000°</td><td>Gumura.Kenduihar</td><td></td><td></td><td></td><td>Kenduihar</td></tr<>	21.750000°.85.500000°	21.750000°.85.750000°	21.500000°.85.500000°	21.500000°.85.750000°	Gumura.Kenduihar				Kenduihar
21.750000*,86.00000*       21.750000*,86.250000*       21.50000*,86.250000*       21.50000*,86.250000*       Xendurundi,Jamuposi       Kendurundi,Jamuposi         21.750000*,86.250000*       21.50000*,86.250000*       21.50000*,86.250000*       Xendurundi,Jamuposi       Nandursahi         21.750000*,86.250000*       21.50000*,86.250000*       21.50000*,86.250000*       Xendurundi,Jamuposi       Nandursahi         21.750000*,86.250000*       21.50000*,86.250000*       21.50000*,86.750000*       Xendurundi,Jamuposi       Sarukana         21.750000*,86.250000*       21.50000*,86.750000*       21.50000*,86.750000*       Xendurundi,Jamuposi       Baisinga         21.750000*,86.250000*       21.50000*,87.250000*       21.50000*,87.250000*       Xendurundi,Jamuposi       Baisinga         21.750000*,87.250000*       21.50000*,87.250000*       21.50000*,87.250000*       Xendali,Banjaga       Baisinga         21.50000*,87.250000*       21.50000*,87.250000*       21.50000*,87.250000*       Batgan, Rhagari,BaligaJ       Batgan, Shagari,Batgani       Batgan, Shagari,Satgani         21.50000*,84.050000*       21.50000*,84.050000*       21.25000*,84.050000*       21.25000*,84.05000*       Staspani       Batgan,Shagari,Batgani         21.50000*,84.050000*       21.50000*,84.50000*       21.25000*,84.25000*       Staspani       Batgan         21.50000*,84.050000*	21.750000°,85.750000°	21.750000°,86.000000°	21.500000°,85.750000°	21.500000°,86.000000°	Tangarpada, Erendei				Tangarpada
21.75000°,86.50000       21.75000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,86.50000       21.50000°,87.00000       21.50000°,87.00000       21.50000°,87.00000       21.50000°,87.00000       21.50000°,87.00000       21.50000°,87.00000       21.50000°,87.00000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.50000°,87.25000       21.5000°	21.750000°,86.000000°	21.750000°,86.250000°	21.500000°,86.000000°	21.500000°,86.250000°	Kendumundi, Jamuposi				Kendumundi
21.750000*,86.750000       21.50000*,86.750000       21.50000*,86.750000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.00000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,87.50000       21.50000*,83.50000       21.50000*,83.50000       21.50000*,83.50000       21.50000*,83.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,84.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50000*,85.50000       21.50	21.750000°.86.250000°	21.750000°.86.500000°	21.500000°.86.250000°	21,500000°.86,500000°	Matihudi. Bhanibasa.				Nandursahi
21.750000*,87.000000       21.750000*,87.000000       21.500000*,87.000000       21.500000*,87.000000       21.500000*,87.000000       21.500000*,87.000000       21.500000*,87.250000       21.500000*,87.250000       21.500000*,87.250000       21.500000*,87.250000       21.500000*,87.250000       21.500000*,87.250000       21.50000*,84.250000       21.50000*,84.250000       21.50000*,84.250000       21.50000*,84.500000       21.50000*,84.500000       21.50000*,84.500000       21.50000*,84.500000       21.50000*,84.750000       21.50000*,84.750000       21.50000*,84.750000       21.50000*,84.750000       21.50000*,84.750000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.250000       21.50000*,85.500000       21.50000*,85.500000       21.50000	21.750000°,86.500000°	21.750000°,86.750000°	21.500000°,86.500000°	21.500000°,86.750000°	Khadikapada, Sarukana				Sarukana
21.750000°,87.25000°       21.75000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.50000°,87.25000°       21.5000°,87.25000°       21.5000°,83.75000°       21.5000°,83.75000°       21.5000°,83.75000°       21.25000°,83.75000°       21.25000°,83.75000°       21.25000°,83.75000°       21.25000°,83.75000°       21.25000°,83.75000°       21.25000°,83.75000°       21.25000°,84.0000°       21.25000°,84.0000°       21.25000°,84.0000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,84.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°       21.25000°,85.5000°	21.750000°.86.750000°	21.750000°.87.000000°	21.500000°.86.750000°	21.500000°.87.000000°	Jogal.Baisinga				Baisinga
21.750000°,87.250000°       21.750000°,87.250000°       21.50000°,87.250000°       21.50000°,87.250000°       21.50000°,87.250000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.750000°       21.25000°,83.75000°       21.25000°,84.00000°       21.25000°,84.00000°       Xunelsingha,Kardola,Attabira       Attabira         21.50000°,84.00000°       21.50000°,84.250000°       21.25000°,84.250000°       21.25000°,84.25000°       21.25000°,84.25000°       Badsahir,Mundher,Jayantpur       Badyantpur         21.50000°,84.250000°       21.50000°,84.250000°       21.25000°,84.75000°       21.25000°,84.75000°       21.25000°,84.75000°       Balipashi,Bamparda       Badyantpur       Balipashi         21.50000°,85.25000°       21.5000°,85.25000°       21.25000°,85.25000°       21.25000°,85.25000°       Balipashi,Bamparda       Regalipashi         21.50000°,85.25000°       21.25000°,85.25000°       21.25000°,85.25000°       21.25000°,85.25000°       Talcher-Raurkela Line       Tower-130-100       POWERGRID       Balipashi         21.50000°,85.25000°       21.25000°,85.25000°       21.25000°,85.25000°       21.25000°,85.25000°       S1.25000°,85.25000°       S1.25000°,85.25000°       S1.25000°,85.25000°       <	21.750000°,87.000000°	21.750000°,87.250000°	21.500000°,87.000000°	21.50000°,87.250000°	Kundali, Dunda, Baniadiha				AmardaRd
21.500000°,83.750000°       21.50000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,83.750000°       21.250000°,84.000000°       21.250000°,84.000000°       21.250000°,84.00000°       21.250000°,84.00000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.50000°       21.250000°,84.50000°       21.250000°,84.750000°       21.250000°,84.750000°       21.250000°,84.750000°       21.250000°,84.750000°       21.250000°,84.750000°       21.250000°,84.75000°       21.250000°,84.75000°       Realmal,Nuansahi       Realmal,         21.50000°,85.500000°       21.50000°,85.50000°       21.250000°,85.50000°       21.250000°,85.50000°       21.250000°,85.50000°       21.250000°,85.50000°       Rengali reservoir       Balipashi,Bamparda       Balipashi,Cualaraa       Balipashi,Cualaraa       Balipashi       Balipashi       Balipashi,Cualaraa       Balipashi,Cualaraa       Balipashi,Cualaraa       Balipashi       Balipashi       Balipashi       Balipashi       Balipashi       Balipashi       Balipashi       Balipashi <td>21.750000°,87.250000°</td> <td>21.750000°,87.500000°</td> <td>21.500000°,87.250000°</td> <td>21.500000°,87.500000°</td> <td>Batagan, Bhagari, Baliapal</td> <td></td> <td></td> <td></td> <td>Baliapal</td>	21.750000°,87.250000°	21.750000°,87.500000°	21.500000°,87.250000°	21.500000°,87.500000°	Batagan, Bhagari, Baliapal				Baliapal
21.500000*,83.750000°       21.500000*,84.000000°       21.250000*,83.750000°       21.250000*,84.000000°       21.250000*,84.000000°       21.250000*,84.000000°       21.250000*,84.000000°       21.250000*,84.000000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.250000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.50000°       21.250000*,84.75000°       21.250000*,84.75000°       21.250000*,84.75000°       21.250000*,84.75000°       Realmal,Nuansahi       Realmal         21.500000*,85.50000°       21.50000*,85.50000°       21.250000*,85.50000°       21.250000*,85.50000°       21.250000*,85.5000°       Rengali reservoir       Balipashi,Bamparda       Balipashi,Bamparda       Balipashi,Cualaraa	21.500000°,83.500000°	21.500000°,83.750000°	21.250000°,83.500000°	21.250000°,83.750000°	Bargarh,Katapali				Bargarh
21.500000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       21.250000°,84.250000°       Badsahir,Mundher,Jayantpur         21.500000°,84.250000°       21.50000°,84.250000°       21.250000°,84.250000°       21.250000°,84.50000°       Bhutel,Bhuluki,Loisingha       Bhutel         21.500000°,84.50000°       21.50000°,84.50000°       21.250000°,84.50000°       21.250000°,84.50000°       Badsahir,Mundher,Jayantpur       Bhutel         21.50000°,84.50000°       21.50000°,84.50000°       21.250000°,84.50000°       21.25000°,84.50000°       Realmal         21.50000°,85.00000°       21.50000°,85.50000°       21.250000°,85.50000°       21.25000°,85.50000°       Rengali reservoir         21.50000°,85.250000°       21.50000°,85.250000°       21.25000°,85.250000°       21.25000°,85.25000°       Balipashi,Bamparda       Balipashi         21.50000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       Tekoi,Kuladera       GovindPur         21.50000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       Tekoi,Kuladera       GovindPur         21.50000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       Tekoi,Kuladera       Janebira	21.500000°,83.750000°	21.500000°,84.000000°	21.250000°,83.750000°	21.250000°,84.000000°	Kumelsingha,Kardola,Attabira				Attabira
21.500000°,84.50000°       21.50000°,84.50000°       21.250000°,84.50000°       21.250000°,84.50000°       Bhutel,Bhuluki,Loisingha         21.50000°,84.50000°       21.50000°,84.50000°       21.25000°,84.50000°       21.25000°,84.50000°       Realmal,Nuansahi       Realmal         21.50000°,84.50000°       21.50000°,84.75000°       21.25000°,84.75000°       21.25000°,85.00000°       Realmal,Nuansahi       Realmal         21.50000°,85.0000°       21.50000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       Rengali reservoir         21.50000°,85.25000°       21.50000°,85.25000°       21.25000°,85.25000°       Balipashi,Bamparda       Balipashi         21.50000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       Tekoi,Kuladera       GovindPur         21.50000°,85.50000°       21.25000°,85.50000°       21.25000°,85.50000°       Tekoi,Kuladera       Ianephira	21.500000°,84.000000°	21.500000°,84.250000°	21.250000°,84.000000°	21.250000°,84.250000°	Badsahir, Mundher, Jayantpur				Jayantpur
21.500000°, 84.750000°       21.50000°, 84.750000°       21.250000°, 84.750000°       21.250000°, 84.750000°       21.250000°, 84.750000°       Realmal         21.500000°, 84.750000°       21.50000°, 84.750000°       21.250000°, 84.750000°       21.250000°, 84.750000°       Realmal, Nuansahi       Realmal         21.50000°, 84.750000°       21.50000°, 84.750000°       21.250000°, 84.750000°       21.250000°, 84.750000°       Realmal, Nuansahi       Realmal         21.50000°, 85.00000°       21.250000°, 85.00000°       21.250000°, 85.00000°       21.25000°, 85.00000°       Balipashi, Bamparda       Balipashi         21.50000°, 85.500000°       21.250000°, 85.500000°       21.250000°, 85.50000°       Telkoi, Kuladera       GovindPur         21.50000°, 85.500000°       21.250000°, 85.500000°       21.250000°, 85.500000°       21.250000°, 85.50000°       Telkoi, Kuladera       Janehira	21.500000°,84.250000°	21.500000°,84.500000°	21.250000°,84.250000°	21.250000°,84.500000°	Bhutel, Bhuluki, Loisingha				Bhutel
21.500000°,84.750000°       21.250000°,85.000000°       21.250000°,84.750000°       21.250000°,85.00000°       21.250000°,85.00000°       21.250000°,85.00000°       21.250000°,85.00000°       21.250000°,85.00000°       21.25000°,85.00000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.0000°       21.25000°,85.000°       21.25000°       21.25000°,85.000°       21.25000°,85.000°       21.25000°,85.000°       21.25000°,85.000°       21.25000°,85.000°       21.25000°,85.000°       21.25000°       21.25000°       21.25000°       21.25000°       21.25000°       21.25000°       21.25000°       21.25000°       21.25000°       21.2500°       21.2500°       21.2500°       2	21,500000°,84,500000°	21.500000°.84.750000°	21,250000°,84,500000°	21.250000°.84.750000°	Realmal.Nuansahi				Realmal
21.500000°, 85.00000°       21.50000°, 85.25000°       21.250000°, 85.25000°       21.250000°, 85.25000°       21.250000°, 85.25000°       Balipashi, Bamparda         21.50000°, 85.25000°       21.50000°, 85.25000°       21.250000°, 85.25000°       1.25000°, 85.50000°       Telkoi, Kuladera       GovindPur         21.50000°, 85.75000°       21.25000°, 85.50000°       21.25000°, 85.50000°       Telkoi, Kuladera       GovindPur	21.500000°,84.750000°	21.500000°,85.000000°	21.250000°,84.750000°	21.250000°,85.000000°	· , · · · ·	Talcher-Raurkela Line	Tower-130-100	POWERGRID	Rengali reservoir
21.50000°,85.25000° 21.50000°,85.50000° 21.250000°,85.25000° 21.25000°,85.50000° Telkoi,Kuladera GovindPur 21.50000°,85.50000° 21.50000°,85.75000° 21.25000°,85.50000° 1.25000°,85.50000° Telkoi,Kuladera GovindPur	21.500000°,85.000000°	21.500000°,85.250000°	21.250000°,85.000000°	21.250000°,85.250000°	Balipashi, Bamparda			-	Balipashi
21.500000° 85.500000° 21.500000° 21.250000° 21.250000° 21.250000° 21.250000° Khantamara Janghira	21.500000°,85.250000°	21.500000°,85.500000°	21.250000°,85.250000°	21.250000°,85.500000°	Telkoi, Kuladera				GovindPur
	21.500000°,85.500000°	21.500000°,85.750000°	21.250000°,85.500000°	21.250000°,85.750000°	Khantamara, Janghira				Janghira

21.500000°,85.750000°	21.500000°,86.000000°	21.250000°,85.750000°	21.250000°,86.000000°	Ghatgaon,Arjunbila				Ghatgaon
21.500000°,86.000000°	21.500000°,86.250000°	21.250000°,86.000000°	21.250000°,86.250000°	Godabhanga,Durara Suni				Durara Suni
21.500000°,86.250000°	21.500000°,86.500000°	21.250000°,86.250000°	21.250000°,86.500000°	Kalamgadia, Bhandar, Sarat				Sarat
21.500000°,86.500000°	21.500000°,86.750000°	21.250000°,86.500000°	21.250000°,86.750000°	Khunta, Digbhanra, Ghodamara				Soro
21.500000°,86.750000°	21.500000°,87.000000°	21.250000°,86.750000°		Rasalpur,Barunsing,Chandipur,Srijung				Chandipur
	21.250000°,83.500000°	21.000000°,83.250000°	21.000000°,83.500000°	Birjam, Ghens, Bijepur				Bijepur
21.250000°,83.500000°	21.250000°,83.750000°	21.000000°,83.500000°	21.000000°,83.750000°	Barpali,Rampur				Barpali
21.250000°,83.750000°	21.250000°,84.000000°	21.000000°,83.750000°	21.000000°,84.000000°	Chichinda,Lamtul				Chichinda
21.250000°,84.000000°	21.250000°,84.250000°	21.000000°,84.000000°	21.000000°,84.250000°	Badmal, Patupal, Charmal				Charmal
21.250000°,84.250000°	21.250000°,84.500000°	21.000000°,84.250000°	21.000000°,84.500000°		400 kV SC Rengali-Indravati	Tower-914-950	POWERGRID	Redhakhol
21.250000°,84.500000°	21.250000°,84.750000°	21.000000°,84.500000°	21.000000°,84.750000°		400 kV SC Rengali-Indravati	Tower-985-1011	POWERGRID	Kanalai
21.250000°,84.750000°	21.250000°,85.000000°	21.000000°,84.750000°	21.000000°,85.000000°		400 kV SC Rengali-Indravati	Tower-1070-1094	POWERGRID	Bagdia
21.250000°,85.000000°	21.250000°,85.250000°	21.000000°,85.000000°	21.000000°,85.250000°		Talcher-Meramundali Line	Tower-10-40	POWERGRID	Seepur
21.250000°,85.250000°	21.250000°,85.500000°	21.000000°,85.250000°	21.000000°,85.500000°	Rohila, Ghagaramunda, Pathargarh				Rohila
21.250000°,85.500000°	21.250000°,85.750000°	21.000000°,85.500000°	21.000000°,85.750000°	Bahadapal, Kantapal, Sasapasi, Kote				Kantapal
21.250000°,85.750000°	21.250000°,86.000000°	21.000000°,85.750000°	21.000000°,86.000000°	Pancham, Daitari, Kansa, Mahbirapasitalabedas	ahi			Daitari
21.250000°,86.000000°	21.250000°,86.250000°	21.000000°,86.000000°	21.000000°,86.250000°	Hasanpur, Anandapur, Deogaon				Anandapur
21.250000°,86.250000°	21.250000°,86.500000°	21.000000°,86.250000°	21.000000°,86.500000°	Bant, Kusun Nagar, Kantia, Dharampur				Kusun Nagar
21.250000°,86.500000°	21.250000°,86.750000°	21.000000°,86.500000°	21.000000°,86.750000°	Balikhand, Markona, Arandua, Chalunigan				Markona
21.000000°,82.7550000°	21.000000°,83.000000°	20.750000°,82.7550000°	20.750000°,83.000000°	Jonk, Khariar Rd, Nuapada				Jonk
21.000000°,83.000000°	21.000000°,83.250000°	20.750000°,83.000000°	20.750000°,83.250000°	Gourjuri, Paikamal, Manbhang, Dhandamunda				Paikamal
21.000000°,83.250000°	21.000000°,83.500000°	20.750000°,83.250000°	20.750000°,83.500000°	Larambha, Ambahal, Guthuria				Padmapur
21.000000°,83.500000°	21.000000°,83.750000°	20.750000°,83.500000°	20.750000°,83.750000°	Kandhumunda, Tenganapali, Kudopali				Kushang
21.000000°,83.750000°	21.000000°,84.000000°	20.750000°,83.750000°	20.750000°,84.000000°		400 kV SC Meramundali - Jeypore	Tower 500-520	POWERGRID	Taraikela
21.000000°,84.000000°	21.000000°,84.250000°	20.750000°,84.000000°	20.750000°,84.250000°		400 kV SC Meramundali - Jeypore	Tower 440-520	POWERGRID	Ulunda
21.000000°,84.250000°	21.000000°,84.500000°	20.750000°,84.250000°	20.750000°,84.500000°		400 kV SC Meramundali - Jeypore	Tower 380-350	POWERGRID	Anandapur
21.000000°,84.500000°	21.000000°,84.750000°	20.750000°,84.500000°	20.750000°,84.750000°		400 kV SC Meramundali - Jeypore	Tower 304-290	POWERGRID	Kadalimunda
21.000000°,84.750000°	21.000000°,85.000000°	20.750000°,84.750000°	20.750000°,85.000000°		400 kV SC Meramundali - Jeypore	Tower 242-222	POWERGRID	Handapa
21.000000°.85.000000°	21.000000°.85.250000°	20.750000°.85.000000°	20.750000°.85.250000°		400 kV SC Meramundali - Jevpore	Tower 138-115	POWERGRID	Naupada
21.000000°.85.250000°	21.000000°.85.500000°	20.750000°.85.250000°	20.750000°.85.500000°		Talcher-Kolar HVDC	Tower 54-70	POWERGRID	Bhalugadia
21.000000°.85.500000°	21.000000°.85.750000°	20.750000°.85.500000°	20.750000°.85.750000°		Talcher-Meramundali Line	Tower 94-112	POWERGRID	TalcherTown
21.000000°.85.750000°	21.000000°.86.000000°	20.750000°.85.750000°	20.750000°.86.000000°	Kamakhyanagar. Bijadiha. Mahuli				Kamakhvanagar
21.000000°.86.000000°	21.000000°.86.250000°	20.750000°.86.000000°	20.750000°.86.250000°	Bhuban.Murdanga.Sukinda				Sukinda
21.000000°.86.250000°	21.000000°.86.500000°	20.750000°.86.250000°	20.750000°.86.500000°	Jabara Korai Artia				Dharmasala
21.000000°.86.500000°	21.000000°.86.750000°	20.750000°.86.500000°	20.750000°.86.750000°	Katikata. Jaipur. Khandara				Jaipur
21.000000°.86.750000°	21.000000°.87.000000°	20.750000°.86.750000°	20.750000°.87.000000°	Loknathpur, Aradi, Nizampur				Nizampur
21.000000°.87.000000°	21.000000°.87.250000°	20.750000°.87.000000°	20.750000°.87.250000°	Bansada Kaithkhola Dhamara				Bansada
20.750000°.82.500000°	20.750000°.82.750000°	20.500000°.82.500000°	20.500000°.82.750000°	Thongo.Tarbod.Karangayata				Karangavata
20.750000°.82.750000°	20.750000°.83.000000°	20.500000°.82.750000°	20.500000°.83.000000°	Badimal, Parlimal, Ghagara,				Khaprakhol
20.750000°.83.000000°	20.750000°.83.250000°	20.500000°.83.000000°	20.500000°.83.250000°	Juba.Radbahal.Jalia.Patnagarh				Patnagarh
20.750000°.83.250000°	20.750000°.83.500000°	20.500000°.83.250000°	20.500000°.83.500000°	Sibatala.sahaibahal				Balangir
20.750000°.83.500000°	20.750000°.83.750000°	20.500000°.83.500000°	20.500000°.83.750000°		400 kV SC Rengali-Indravati	Tower-640-660	POWERGRID	Tarbha
20.750000°.83.750000°	20.750000°.84.000000°	20.500000°.83.750000°	20.500000°.84.000000°	Malangi, Turideula, Tilikamal				Kantamal
20.750000°.84.000000°	20.750000°.84.250000°	20.500000°.84.000000°	20.500000°.84.250000°	Buruguda Kureipada Khamar				Jamuihari
20.750000°.84.250000°	20.750000°.84.500000°	20.500000°.84.250000°	20.500000°.84.500000°	Puranakatak Bhubneswar Jabalpur				Puranakatak
20.750000°.84.500000°	20.750000°.84.750000°	20.500000°.84.500000°	20.500000°.84.750000°	Aida Bankul Pataka Sankari				Athmallik
20.750000°.84.750000°	20.750000°.85.000000°	20.500000°.84.750000°	20.500000°.85.000000°	Tulka. Takarsinga. Purunakot. Tikarpada				Purunakot
20.750000°.85 000000°	20.750000°.85 250000°	20.500000°.85 00000°	20.500000° 85 250000°	,	400 kV SC Rengali-Indravati	Tower-170-200	POWERGRID	Hindol
20.750000°.85.250000°	20.750000°.85.500000°	20.500000°.85.250000°	20.500000°.85.500000°	Kunua.Bhaktapur.Nabakisorepur.Khandatiri				Khandatiri
20.750000°.85.500000°	20.750000°.85.750000°	20.500000°.85.500000°	20.500000°.85.750000°	Gadagovindpur.Dhenkanal.Talbarkote				Dhenkanal
20.750000°.85.750000°	20.750000°.86.000000°	20.500000°.85.750000°	20.500000°.86.000000°	Machhapangi, Aniua, Kolha, Chandannur				Chaudwar
20.750000°.86.000000°	20.750000°.86.250000°	20.500000°.86.000000°	20.500000°.86.250000°	Baiapura Mauda Dhanmandal Colony				Dhanmandal Colony
_00000000000000000000000000000000000	2050000 ,00.250000	20.000000,00.000000	20.000000,00.200000	sajapara, muduu, phannanuar corony				2annundur colony

20.750000°,86.250000°	20.750000°,86.500000°	20.500000°,86.250000°	20.500000°,86.500000°	Indupur,Ratnagiri,Bari,Taradipal				Taradipal
20.750000°,86.500000°	20.750000°,86.750000°	20.500000°,86.500000°	20.500000°,86.750000°	Madan, Nurugan,				Pattamundai
20.750000°,86.750000°	20.750000°,87.000000°	20.500000°,86.750000°	20.500000°,87.000000°	Gupti,Magarkanda,Keruapal				Gupti
20.500000°,82.500000°	20.500000°,82.750000°	20.250000°,82.500000°	20.250000°,82.750000°	Redhamal, Sirli, Kallimati, Kirejhola				Komana
20.500000°,82.750000°	20.500000°,83.000000°	20.250000°,82.750000°	20.250000°,83.000000°	Degan,Karuamunda,Bhalumunda				Bhalumunda
20.500000°,83.000000°	20.500000°,83.250000°	20.250000°,83.000000°	20.250000°,83.250000°	Gulmi, satbahani, Salepara, Ghusuramunda				Titlagarh
20.500000°,83.250000°	20.500000°,83.500000°	20.250000°,83.250000°	20.250000°,83.500000°		400 kV SC Meramundali - Jeypore	Tower-665-695	POWERGRID	Saintal
20.500000°,83.500000°	20.500000°,83.750000°	20.250000°,83.500000°	20.250000°,83.750000°	Mutabali, Kumerpata				Mutabali
20.500000°,83.750000°	20.500000°,84.000000°	20.250000°,83.750000°	20.250000°,84.000000°	Rangapadar, Gogadpata, palisuga				palisuga
20.500000°,84.000000°	20.500000°,84.250000°	20.250000°,84.000000°	20.250000°,84.250000°	Kanibali,Sarangada,Duduki				Sarangada, Phulbani
20.500000°,84.250000°	20.500000°,84.500000°	20.250000°,84.250000°	20.250000°,84.500000°	Line Pada, Simbali, Khajuripada				Khajuripada
20.500000°,84.500000°	20.500000°,84.750000°	20.250000°,84.500000°	20.250000°,84.750000°	Kandi,Takuda,Banigocha				Banigocha
20.500000°,84.750000°	20.500000°,85.000000°	20.250000°,84.750000°	20.250000°,85.000000°	Champadali, Jhuntamara, Jamujhola, Daspalla				Daspalla
20.500000°,85.000000°	20.500000°,85.250000°	20.250000°,85.000000°	20.250000°,85.250000°		Talcher-Kolar HVDC	Tower-245-300	POWERGRID	Kishoreprasad
20.500000°,85.250000°	20.500000°,85.500000°	20.250000°,85.250000°	20.250000°,85.500000°	Kendupalli,Badamba,Khuntakata				Khuntakata
20.500000°,85.500000°	20.500000°,85.750000°	20.250000°,85.500000°	20.250000°,85.750000°	Kuspangi, Dompada, Nuaostia				Athagarh
20.500000°,85.750000°	20.500000°,86.000000°	20.250000°,85.750000°	20.250000°,86.000000°	Barang, Sankataras, Cuttack				Cuttack
20.500000°,86.000000°	20.500000°,86.250000°	20.250000°,86.000000°	20.250000°,86.250000°	Arilo,Adhanga,Natara				Salipur
20.500000°,86.250000°	20.500000°,86.500000°	20.250000°,86.250000°	20.250000°,86.500000°	Patkura,Korua,Mirzapur,Tirtol				Tirtol
20.500000°,86.500000°	20.500000°,86.750000°	20.250000°,86.500000°		Paradip, Mahakalpara, Khujang, Ratanpur				Ratanpur
20.250000°,82.500000°	20.250000°,82.750000°	20.000000°,82.500000°	20.000000°,82.750000°	Babebir, Godal, Nuamalpada				Nuamalpada
20.250000°,82.750000°	20.250000°,83.000000°	20.000000°,82.750000°	20.000000°,83.000000°	Bagha Munda, Banjipadar, Charpali				Sindhekela
20.250000°,83.000000°	20.250000°,83.250000°	20.000000°,83.000000°	20.000000°,83.250000°		400 kV SC Meramundali - Jeypore	Tower-822-803	POWERGRID	Kesinga
20.250000°,83.250000°	20.250000°,83.500000°	20.000000°,83.250000°	20.000000°,83.500000°		400 kV SC Rengali-Indravati	Tower-490-465	POWERGRID	Sripur
20.250000°,83.500000°	20.250000°,83.750000°	20.000000°,83.500000°	20.000000°,83.750000°	Kurupadar,Karlakipadar,Khamanpada				Madanpur Ramapur
20.250000°,83.750000°	20.250000°,84.000000°	20.000000°,83.750000°	20.000000°,84.000000°	Sitapadi, Bagada, Dudugum, Gadaringia				Baliguda
20.250000°,84.000000°	20.250000°,84.250000°	20.000000°,84.000000°	20.000000°,84.250000°	Budamaha, Chanchedi, Bilabadi, Argadi				Raikia
20.250000°,84.250000°	20.250000°,84.500000°	20.000000°,84.250000°	20.000000°,84.500000°	Udayagiri,Kalinga				Tikkabali
20.250000°,84.500000°	20.250000°,84.750000°	20.000000°,84.500000°	20.000000°,84.750000°	Siuli, Kanapaju, Galleri				Galleri
20.250000°,84.750000°	20.250000°,85.000000°	20.000000°,84.750000°	20.000000°,85.000000°		Talcher-Kolar HVDC	Tower-457-425	POWERGRID	Odagaon
20.250000°,85.000000°	20.250000°,85.250000°	20.000000°,85.000000°	20.000000°,85.250000°		Talcher-Kolar HVDC	Tower-370-335	POWERGRID	Nayagarh
20.250000°,85.250000°	20.250000°,85.500000°	20.000000°,85.250000°	20.000000°,85.500000°	Pichukuli, Puania, Sanagada, Garhmanatri				Pichukuli
20.250000°,85.500000°	20.250000°,85.750000°	20.000000°,85.500000°	20.000000°,85.750000°	Taraboi, Khordha, Kurdahamalla				Khordha
20.250000°,85.750000°	20.250000°,86.000000°	20.000000°,85.750000°	20.000000°,86.000000°	Uttara,Pipili,Jajapur				Uttara
20.250000°,86.000000°	20.250000°,86.250000°	20.000000°,86.000000°	20.000000°,86.250000°	Athantar, Mahangapara, Niali				Niali
20.250000°,86.250000°	20.250000°,86.500000°	20.000000°,86.250000°		Ersama, Saharabedi, Nuagan				Saharabedi, Nuagan
20.000000°,82.000000°	20.000000°,82.250000°	19.750000°,82.000000°	19.750000°,82.250000°	Raighar, Bharsundi, Hatibena				Raighar
20.000000°,82.750000°	20.000000°,83.000000°	19.750000°,82.750000°	19.750000°,83.000000°		400 kV SC Meramundali - Jeypore	Tower-960-930	POWERGRID	Kaliakundal
20.000000°,83.000000°	20.000000°,83.250000°	19.750000°,83.000000°	19.750000°,83.250000°		400 kV SC Rengali-Indravati	Tower-365-390	POWERGRID	Bhawanipatna
20.000000°,83.250000°	20.000000°,83.500000°	19.750000°,83.250000°	19.750000°,83.500000°	Pokhari Bandha,Madibandha,Ambodala				Ambodala
20.000000°,83.500000°	20.000000°,83.750000°	19.750000°,83.500000°	19.750000°,83.750000°	Dumamasaka, Bikapanga, Sanatukella				Tumudibandh
20.000000°,83.750000°	20.000000°,84.000000°	19.750000°,83.750000°	19.750000°,84.000000°	Subarnagiri, Pakari, Samanabadi				Subarnagiri
20.000000°,84.000000°	20.000000°,84.250000°	19.750000°,84.000000°	19.750000°,84.250000°	Daringbadi,Simanbadi				Daringbadi
20.000000°,84.250000°	20.000000°,84.500000°	19.750000°,84.250000°	19.750000°,84.500000°	Kaliamba, Darju, Duba				Duba
20.000000°,84.500000°	20.000000°,84.750000°	19.750000°,84.500000°	19.750000°,84.750000°	Bellaguntha, Bhajanagar, Badadodanga				Bellaguntha
20.000000°,84.750000°	20.000000°,85.000000°	19.750000°,84.750000°	19.750000°,85.000000°		Talcher-Kolar HVDC	Tower-490-510	POWERGRID	
20.000000°,85.000000°	20.000000°,85.250000°	19.750000°,85.000000°	19.750000°,85.250000°	Tikriaipada, Jamuganda, Raipada				Karadapalli
20.000000°,85.250000°	20.000000°,85.500000°	19.750000°,85.250000°	19.750000°,85.500000°	Tangi,Baulabandha,Kuhuri				Tangi
20.000000°,85.500000°	20.000000°,85.750000°	19.750000°,85.500000°	19.750000°,85.750000°	Gadakokal, Brahmagiri, Gadasahi				Brahmgiri
20.000000°,85.750000°	20.000000°,86.000000°	19.750000°,85.750000°		Gaindol,Puri				Puri
20.000000°,86.000000°	20.000000°,86.250000°			Konark, Bada Sirei				Konark
19.750000°,82.000000°	19.750000°,82.250000°	19.500000°,82.000000°	19.500000°,82.250000°	Hirapur, Taraguda, Budrapara				Sankarda

19.750000°,82.250000°	19.750000°,82.500000°	19.500000°,82.250000°	19.500000°,82.500000°	Barahaguda,Phupugam,Chacha				Jharigaon
19.750000°,82.500000°	19.750000°,82.750000°	19.500000°,82.500000°	19.500000°,82.750000°	Temra, Badpodaguda, Koksara, Badpodaguda				Badpodaguda
19.750000°,82.750000°	19.750000°,83.000000°	19.500000°,82.750000°	19.500000°,83.000000°		400 kV SC Rengali-Indravati	Tower-275-240	POWERGRID	Kalampur
19.750000°,83.000000°	19.750000°,83.250000°	19.500000°,83.000000°	19.500000°,83.250000°	Gunpur,Karlapat				Gunpur
19.750000°,83.250000°	19.750000°,83.500000°	19.500000°,83.250000°	19.500000°,83.500000°	Lakhpadar, Tadijhola, Palberi				Lanjigarh
19.750000°,83.500000°	19.750000°,83.750000°	19.500000°,83.500000°	19.500000°,83.750000°	RayalGhati, Kanimani, Kutrabali, Deokupuli				Koramohan
19.750000°,83.750000°	19.750000°,84.000000°	19.500000°,83.750000°	19.500000°,84.000000°	Chandrapur, Arma, Siliguda, Meriapata				Meriapata
19.750000°,84.000000°	19.750000°,84.250000°	19.500000°,84.000000°	19.500000°,84.250000°	Paniganda, Haraguda, Gudikupa				Haraguda
19.750000°,84.250000°	19.750000°,84.500000°	19.500000°,84.250000°	19.500000°,84.500000°	Madhapur, Keranjali, Hatikhal				Badagada
19.750000°,84.500000°	19.750000°,84.750000°	19.500000°,84.500000°	19.500000°,84.750000°		Talcher-Kolar HVDC	Tower-628-640	POWERGRID	Pittal
19.750000°,84.750000°	19.750000°,85.000000°	19.500000°,84.750000°	19.500000°,85.000000°		Talcher-Kolar HVDC	Tower-570-590	POWERGRID	Polasara
19.750000°,85.000000°	19.750000°,85.250000°	19.500000°,85.000000°	19.500000°,85.250000°	Garh, Nirmalajhara, Kanaka				Chilika lake
19.750000°,85.250000°	19.750000°,85.500000°	19.500000°,85.250000°		Chilika Nuapada, Stapada, Titipa				
19.500000°,82.250000°	19.500000°,82.500000°	19.250000°,82.250000°	19.250000°,82.500000°	Sindhiguda ,Kerandimal,Dabugaon				Kosagumuda
19.500000°,82.500000°	19.500000°,82.750000°	19.250000°,82.500000°	19.250000°,82.750000°		400 kV SC Meramundali - Jeypore	Tower-1120-1140	POWERGRID	Achalguma
19.500000°,82.750000°	19.500000°,83.000000°	19.250000°,82.750000°	19.250000°,83.000000°		Indravati-Jeypore Line	Tower-192-175	POWERGRID	Jaipatna
19.500000°,83.000000°	19.500000°,83.250000°	19.250000°,83.000000°	19.250000°,83.250000°	Kasipur				Kasipur
19.500000°,83.250000°	19.500000°,83.500000°	19.250000°,83.250000°	19.250000°,83.500000°	Pitesu, Bhatapur				Bhatapur
19.500000°,83.500000°	19.500000°,83.750000°	19.250000°,83.500000°	19.250000°,83.750000°	Batapulisi, Aripadar				Batapulisi, Bishmakatek
19.500000°,83.750000°	19.500000°,84.000000°	19.250000°,83.750000°	19.250000°,84.000000°	Gumi,Gudari				Gumi
19.500000°,84.000000°	19.500000°,84.250000°	19.250000°,84.000000°	19.250000°,84.250000°	Bhaliasahi, Jungle Block 45				Adaba
19.500000°,84.250000°	19.500000°,84.500000°	19.250000°,84.250000°	19.250000°,84.500000°	Kharidhepa, Luhagudi, Bhishmagiri				Mohana
19.500000°,84.500000°	19.500000°,84.750000°	19.250000°,84.500000°	19.250000°,84.750000°		Talcher-Kolar HVDC	Tower-655-690	POWERGRID	Digapahandi
19.500000°,84.750000°	19.500000°,85.000000°	19.250000°,84.750000°	19.250000°,85.000000°	Sunathar, Chhatrapur, Ganjam, Brahmapur				Chhatrapur
19.250000°,82.250000°	19.250000°,82.500000°	19.000000°,82.250000°	19.000000°,82.500000°	Kotapad ,Dhanpunji				Kotapad
19.250000°,82.500000°	19.250000°,82.750000°	19.000000°,82.500000°	19.000000°,82.750000°		400 kV SC Meramundali - Jeypore	Tower-1170-1200	POWERGRID	
19.250000°,82.750000°	19.250000°,83.000000°	19.000000°,82.750000°	19.000000°,83.000000°	Guma, Talaratabandha, Kalati				Khatiguda
19.250000°,83.000000°	19.250000°,83.250000°	19.000000°,83.000000°	19.000000°,83.250000°	Tikiri, Phulajuba, Tayaput				Tikiri
19.250000°,83.250000°	19.250000°,83.500000°	19.000000°,83.250000°	19.000000°,83.500000°	Rayagada,Ledda				Rayagada
19.250000°,83.500000°	19.250000°,83.750000°	19.000000°,83.500000°	19.000000°,83.750000°	Lenda, Ramanguda				Tandikona
19.250000°,83.750000°	19.250000°,84.000000°	19.000000°,83.750000°	19.000000°,84.000000°	Ukkampa, Gunupur, Tolana				Ukkamba
19.250000°,84.000000°	19.250000°,84.250000°	19.000000°,84.000000°	19.000000°,84.250000°	Nuagada,Lakijhol				Nuagada
19.250000°,84.250000°	19.250000°,84.500000°	19.000000°,84.250000°	19.000000°,84.500000°	Nuapalaspur,Ollama,Deraba				Khariaguda
19.250000°,84.500000°	19.250000°,84.750000°	19.000000°,84.500000°			Talcher-Kolar HVDC	Tower-745-770	POWERGRID	Bhimpur
19.000000°,82.250000°	19.000000°,82.500000°	18.750000°,82.250000°	18.750000°,82.500000°	Cherka,Kundura,Badaatal				Kundura
19.000000°.82.500000°	19.000000°.82.750000°	18.750000°.82.500000°	18.750000°.82.750000°		Indravati-Jevpore Line	Tower-48-30	POWERGRID	Mazurmunda
19.000000°,82.750000°	19.000000°,83.000000°	18.750000°,82.750000°	18.750000°,83.000000°	Kundar, Naranga, Parajapuki				Damamjod
19.000000°,83.000000°	19.000000°,83.250000°	18.750000°,83.000000°	18.750000°,83.250000°	Narayanpatna, Bagam, idugumabalsa				Narayanpatna
19.000000°.83.750000°	19.000000°.84.000000°	18.750000°.83.750000°	18.750000°.84.000000°	Allada.Vallada.Gatraguda.Kashinagar				Kashinagar
19.000000°,84.000000°	19.000000°,84.250000°	· · · · · · , · · · · · · · · · · · · ·	,	Burusinga, Narayanpur, Uppalada				Rayagada
,	18.750000°.82.250000°	18.500000°.82.000000°	18.500000°.82.250000°	Kianga.Udegiri.Barubeda.Kaliaguda				Kaliaguda
18.750000°.82.250000°	18.750000°.82.500000°	18.500000°.82.250000°	18.500000°.82.500000°	Purnapani.Gadabeda.Tanginiguda				Tanginiguda
18.750000°,82.500000°	18.750000°,82.750000°	18.500000°,82.500000°	18.500000°,82.750000°	Malenga, Tikra Pada, Chatara				Nandapur
18.750000°.82.750000°	18.750000°.83.000000°	18.500000°.82.750000°	18.500000°.83.000000°	Pungar.Similiguda.pottangi				Pottangi
	18.500000°.82.000000°	18.250000°.81.750000°	18.250000°.82.000000°	Malkangiri, Rampur, Mv9				Malkangiri
18.500000°.82.000000°	18.500000°.82.250000°	18.250000°.82.000000°	18.250000°.82.250000°	Degra.Ramapur.Kudumulugumma				Katameta.
18.500000°.82.500000°	18.500000°.82.750000°	18.250000°.82.500000°	18.250000°.82.750000°	Badel.Kadaput.Paduwa				Badel
18,500000°,82,750000°	18.500000°.83.000000°	18.250000°.82.750000°	18.250000°.83.000000°	Sambai.Baraia.Sorada.Bodogolluru				Baraia.Sunki
,,,,,	18.250000°.81.750000°	18.000000°.81.500000°	18.000000°.81.750000°	Polur.Bapanpali.Podia				Podia
18.250000°.81.750000°	18.250000°.82.000000°	18.000000°.81.750000°		Arnamala.Gagarmetla.Pulimetla.Potakhal				Pulimetla
18.250000°.82.000000°	18.250000°.82.250000°			Bhimaram.Padmagiri.Chitrakonda				Balimela reservior
18.000000°.81.500000°	18.000000°.81.750000°			Koikonda.Malabharam.MV76				MV76
,.				,, <b>,</b> .				

Note-Grid Representation



The name of location (village) is written in order of proximity to the centre of the GRID.

Tower shall be identified near to the village preferably not exceeding 10 km from the village for installation of dummy insulator . In case of POWERGRID line, prefered location is middle of identified Towers.

A(Decimal degrees)	B(Decimal degrees)	C(Decimal degrees)	D(Decimal degrees)	Name of Location	Name of Transmission Line	Tower Identification	Owner of Line	Landmark / Near by City	
		27.750000°,88.250000°	27.750000°,88.500000°	Dazanak,Dolma Sampa,Lhonak				Dolma Sampa	
		27.750000°,88.500000°	27.750000°,88.750000°	Talam, Thangu vally, Yumthang, Yumesodong				Yumthang	
27.750000°,88.250000°	27.750000°,88.500000°	27.500000°,88.250000°	27.500000°,88.500000°	Sakkyong,Sakkyong-Pentong,Shabrung				Sakkyong	
27.750000°,88.500000°	27.750000°,88.750000°	27.500000°,88.500000°	27.500000°,88.750000°	Chungthang,Lachung,Lachen				Chungthang	
27.500000°,88.250000°	27.500000°,88.500000°	27.250000°,88.250000°	27.250000°,88.500000°	yuksom, Phamthang, Sada				Yuksom	
27.500000°,88.500000°	27.500000°,88.750000°	27.250000°,88.500000°	27.250000°,88.750000°		132 kV DC LILO at Gangtok	Tower-150-175	POWERGRID	Ranipool,Gangtok	
	27.250000°,88.250000°	27.000000°,88.000000°	27.000000°,88.250000°		Rangit-Rammam Line	Tower-AP60-AP90	POWERGRID	Daramdin	
27.250000°,88.250000°	27.250000°,88.500000°	27.000000°,88.250000°	27.000000°,88.500000°		132 kV DC LILO at Gangtok	Tower-17-45	POWERGRID	Singtam	7
27.250000°,88.500000°	27.250000°,88.750000°	27.000000°,88.500000°	27.000000°,88.750000°	Aritar,Reshi,Lingtam				Reshi	

Note-

Grid Representation



The name of location (village) is written in order of proximity to the centre of the GRID.

Tower shall be identified near to the village preferably not exceeding 10 km from the village for installation of dummy insulator. In case of POWERGRID line, prefered location is middle of identified Towers.

#### Annexure-C.3

#### Anticipated Power Supply Position for the month of Oct-13

	SL.NO	P A R T I C U LA R S	PEAK DEMAND	ENERGY
			MW	MU
1		BIHAR		
	i)	NET MAX DEMAND	2200	1345
	ii)	NET POWER AVAILABILITY- Own Source	265	180
		- Central Sector	1722	963
	iii)	SURPLUS(+)/DEFICIT(-)	-213	-201
2		JHARKHAND		
	i)	NET MAX DEMAND	1200	720
	ii)	NET POWER AVAILABILITY- Own Source	627	344
		- Central Sector	722	416
	111)	SURPLUS(+)/DEFICIT(-)	148	40
3	-		2/05	1/70
	1)	NET MAX DEMAND (UWN)	2695	1670
	11)	NET POWER AVAILABILITY- Own Source	4888	2908
		- Central Sector	480	340
		Long term Bi-lateral (Export)	1400	1008
	111)	SURPLUS(+)/DEFICIT(-)	12/9	577
A		ORISSA		
4			3650	2200
	1) 33		3030 2904	1731
	11)	- Central Soctor	2070	673
	;;;)	- Central Sector	1134 320	104
	111)		300	104
5		WEST BENGAL		
51		WRSEDCI		
5.1	i)		5270	2165
	1) ji)		820	178
	···)		6100	2242
	iv)		2800	2172
	10)	Import from DBI	0	2175
			2074	23
	V)		683	1068
	•)		005	1000
52		ры		
	i)		310	107
	ii)		310	222
	iii)	SURPLUS(+)/DEFICIT(-)	0	25
	,		Ŭ	25
5.3		CESC		
	i)	NET MAX DEMAND	1875	908
	ii)	NET POWER AVAILABILITY - OWN SOURCE	1100	730
	,	FROM WBSEDCL	830	178
	iii)	TOTAL AVAILABILITY	1930	908
	iv)	SURPLUS(+)/DEFICIT(-)	55	0
6		WEST BENGAL (WBSEDCL+DPL+CESC)		
		(excluding DVC's supply to WBSEDCL's command area)		
		· · · · · · · · · · · · · · · · · · ·		
	i)	NET MAX DEMAND	7455	4270
	ii)	NET POWER AVAILABILITY- Own Source	5219	3124
		- Central Sector	2974	2213
	iii)	SURPLUS(+)/DEFICIT(-)	738	1068
7		SIKKIM		
	i)	NET MAX DEMAND	95	40
	ii)	NET POWER AVAILABILITY- Own Source	16	6
		- Central Sector	134	84
	iii)	SURPLUS(+)/DEFICIT(-)	55	50
8		EASTERN REGION		
		At 1.03 AS DIVERSITY FACTOR		
	i)	NET MAX DEMAND	16791	10334
		Long term Bi-lateral	1400	1008
	ii)		19109	11972
			22.0	4/22
	iii)	PEAK SUKPLUS(+)/DEFICIT(-) OF ER	2318	1638
		(11)-(1)		

SYSTEM	POWER STATION	Unit NO.	Effective Capacity (MW)	Proposed programme (As per LGBR)	Reason of S/d	Remarks
JSEB	PTPS	Unit No 6	90	01.10.2013 to 30.11.2013	Sch. Maintenance	61
DVC	DTPS	Unit No 3	140	21.10.2013 to 30.11.2013	Annual Overhauling	40
		Unit No 4	60	29.10.2013 to 01.11.2013	Statutory Hydraulic test	
CESC	Titagarh TPS					4

# **Tentative Maintenance Programme of Generating Units for Oct'13**

#### EASTERN REGIONAL LOAD DESPATCH CENTRE KOLKATA

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#### TRANSMISSION ELEMENTS OTAGE REQUSET TO BE DISCUSSED IN 89TH OCC MEETING OF ERPC

	S/D APPROVED IN OCC								
Sr. No	NAME OF THE ELEMENTS	DATE	TIME	DATE	TIME	REMARKS	S/D availed BY	Reason	SUBJECT TO CONSENT FROM AGENCY
1	A/R of 400 kV Rourkela-Sundargarh-Raigarh	9/11/2013	9:00	10/11/2013	17:00	ODB	ER-II	OPGW STRINGING WORK/no power ineruption	NLDC
2	125 MVAR Bus Reactor-1 & 2 at Sundargarh	9/11/2013	8:00	9/12/2013	18:00	OCB	ER-II	For Construction of FIRE WALL between Reactor-1 & 2	NLDC
3	400 KV RTPS - DSTPS - I	9/12/2013	7:00	9/27/2013	17:00	ODB	ER-II	OPGW STRINGING WORK	DVC
4	220 kv Jeypore-Jayanagar-I	9/12/2013	9:00	9/12/2013	12:00	ODB	ER-II	Numerical Relay retrofitting works	NLDC/OPTCL
-		0/12/2012	10.00	0/12/2012	14.00	000	50.1	LOADING OF NEW TEMPLATE IN SCADA FOR A/R AND SUBSEQUENT TESTING OF	NUDG
5	400 KV BANKA - BSF - I	9/12/2013	10:00	9/12/2013	14:00	ODB	EK-I	AUTO RECLOSE FUNCTION BY M/S ALSTOM ENGINEER	NLDC
6	100MVA ICT-I at Siliguri	9/12/2013	9:00	9/12/2013	17:00	ODB	ER-II	C & Tan delta testing of Bushings & AMP of ICT	
7	220 kv Jeypore-Jayanagar-II	9/13/2013	9:00	9/13/2013	12:00	ODB	ER-II	Numerical Relay retrofitting works	NLDC/OPTCL
•	100 10/ DANIKA DOS II	0/42/2042	40.00	0/42/2012	44.00	000	50.1	LOADING OF NEW TEMPLATE IN SCADA FOR A/R AND SUBSEQUENT TESTING OF	
ð	400 KV BANKA - BSF - 11	9/13/2013	10:00	9/13/2013	14:00	ODB	EK-I	AUTO RECLOSE FUNCTION BY M/S ALSTOM ENGINEER	NLDC
9	BOLANGIR-ANGUL-MERAMUNDALLI	9/13/2013	9:00	9/14/2013	17:00	ODB	ER-II	Erection of Equipments in transformer incoming bay	NLDC
10	125 MVAR BUS REACTOR-II & III at Angul	9/13/2013	9:00	9/14/2013	17:00	ODB	ER-II	Extension of BUS-I to reactor-I bay	NLDC
11	125 MVAR Bus Reactor-1 at Sundargarh	9/13/2013	8:00	9/16/2013	18:00	OCB	ER-II	For erection of Pylon Support and formation of Ring of FF system	
12		0/44/2042	0.00	0/45/2012	47.00	000	50.1	FOR STRINGING WORK OF 400 KV D/C (QUAD) MAITHON - GAYA TL BETWEEN	201142
12	220 KV GAYA - BODHGAYA D/C	9/14/2013	8:00	9/15/2013	17:00	ODB	ER-I	LOC. NO.206 & 207	BIHAR
								FOR STRINGING WORK OF 400 KV D/C (QUAD) MAITHON - GAYA TL BETWEEN	
13	220 KV GAYA - DEHRI D/C	9/14/2013	8:00	9/15/2013	17:00	ODB	ER-I	LOC NO 207 & 208	BIHAR
								LOADING OF NEW TEMPLATE IN SCADA FOR A/R AND SUBSEQUENT TESTING OF	
14	400 KV BANKA - KAHALGAON - I	9/14/2013	10:00	9/14/2013	14:00	ODB	ER-I	AUTO RECLOSE EUNCTION BY M/S ALSTOM ENGINEER	NLDC
15	315MVA ICT-Lat Rourkela	9/14/2013	9:00	9/14/2013	17:00	ODB	FR-II	C & Tan delta testing of Bushings & AMP of ICT	
16	TIE BAY OF 315 MVA ICT-2 AT PSI	9/15/2013	8:00	9/15/2013	18:00	ODB	FR-I	EOR SAS INTEGRATION WORK AT PSL	
17	400 kV Binaguri- Tala-4 line	9/15/2013	10:00	9/15/2013	16:00	ODB	FR-II	Numerical relay retrofitting	NLDC
18	132 KV Siliguri - NBLI D/C	9/15/2013	4.00	9/15/2013	10:00		WBSETCI	MAINTENANCE WORK	
19	220 KV SUBHASGRAM (PG) - SUBHASGRAM (WB) - I	9/15/2013	5:00	9/15/2013	15:00		WBSETCL	MAINTENANCE WORK	
20	400KV Malda Farakka-1	9/15/2013	08:00	10/5/2013	18:00	ОСВ	ER-II	For dismantling of old equipment and erection and commissioning of new installed equipments(under construction bead)	NLDC
21	400KV MAIN BUS-1 at Malda	9/15/2013	9:00	9/15/2013	17:00	ODB	ER-II	For stringing of 400KV extension bay(under construction ) Total power	
22		0/19/2012	8.00	0/19/2012	20.00		ED.I		
22	315 MVA ICT-2 AT PSI	9/16/2013	8:00	9/16/2013	18:00	ODB	ER-I	FOR SAS INTEGRATION WORK AT PSI	BIHAB
2.5	SIS MVAICE ZATTSE	5/10/2015	0.00	5/10/2015	10.00	000		LOADING OF NEW TEMPLATE IN SCADA FOR A/R AND SUBSEQUENT TESTING OF	binan
24	400 KV BANKA - KAHALGAON - II	9/17/2013	10:00	9/17/2013	14:00	ODB	ER-I	AUTO RECLOSE EUNCTION BY M/S AUSTOM ENGINEER	NLDC
25	220KV BUS-LAT BNC	9/17/2013	9.00	9/17/2013	14:00	ODB	FR-I	FOR ATTENDING BUS -USOLATOR AUGNMENT PROBLEM AT RNC	
26	TIE BAY OF 315 MVA ICT-1 AT PSI	9/17/2013	8.00	9/17/2013	18:00	ODB	ER-I	FOR SAS INTEGRATION WORK AT PSI	
27	400 kV Binaguri, Tala-2 line	0/17/2012	10:00	0/17/2012	16:00	ODB	ER-II	Numerical relay retrofitting	NUDC
29		0/19/2012	9.00	0/19/2012	14:00	ODB	ED-I		NEDC
20	220RV B03-2 AT NINC	5/10/2015	5.00	5/10/2015	14.00	008		FOR INSTALLATION OF LIGHTING FIXTURE ALONG WITH CARLE LAVING FROM	
29	400 KV SSRM - BALIA	9/18/2013	8:00	9/18/2013	18:00	ODB	ER-I	FIXTURE TO CONTROL GEAR	NLDC
30	315 MVA ICT-1 AT PSL	9/18/2013	8:00	9/18/2013	18:00	ODB	ER-I	FOR SAS INTEGRATION WORK AT PSL	BIHAR
31	125 MVAR Bus Reactor- 2 at Sundargarh	9/18/2013	8:00	9/21/2013	18:00	OCB	ER-II	For erection of Pylon Support and formation of Ring of FF system	
	· · · · · · · · · · · · · · · · · · ·							S/D REQUIRED FOR RECTIFICATION OF CLEARANCE PROBLEM BETWEEN 400 KV	
32	400KV BSE-SSRM-II	9/19/2013	9:00	9/19/2013	11:30	ODB	FR-I	BSE - SSRM -3 & 400 KV BSE - GAYA AND 400 KV BSE - SSRM - I & II( BETWEEN	NLDC
		-,,		-,,					
								S/D REQUIRED FOR RECTIFICATION OF CLEARANCE PROBLEM BETWEEN 400 KV	
33	400KV BSF-SSRM-I	9/19/2013	12:00	9/19/2013	17:00	ODB	ER-I	BSE - SSRM -3 & 400 KV BSE - GAYA AND 400 KV BSE - SSRM - I & II( BETWEEN	NLDC
			1				1	S/D REQUIRED FOR RECTIFICATION OF CLEARANCE PROBLEM BETWEEN 400 KV	
								BSE - SSRM -3 & 400 KV BSE - GAYA AND 400 KV BSE - SSRM -1 & II/ RETWEEN	
34	400KV BSF-SSRM-III	9/19/2013	9:00	9/19/2013	17:00	ODB	ER-I	LOC NO 18 & 19) NB - THIS S/D WILL BE CLUBBED WITH S/D OF 400 KV	NLDC
1		., .,		., .,			1	DSE - SCOM - 2 CLEADED IN 99 TH OCC MEETING FOD 10 00 12 FOD DALTANCANU	-
								DAY CONSTRUCTION WORK	

								S/D REQUIRED FOR RECTIFICATION OF CLEARANCE PROBLEM BETWEEN 400 KV	
35	400KV BSF-GAYA	9/19/2013	9:00	9/19/2013	17:00	ODB	ER-I	BSF - SSRM -3 & 400 KV BSF - GAYA AND 400 KV BSF - SSRM - I & II( BETWEEN	NLDC
								LOC. NO 18 & 19)	
36	400 KV Rourkela-Sundargarh-Raigarh-2	9/19/2013	8:00	9/19/2013	18:00	ODB	ER-II	For erection of Bus Pipe and balance costruction work	NLDC
37	400 kV Binaguri- Tala-3 Line	9/19/2013	10:00	9/19/2013	16:00	ODB	FR-II	Numerical relay retrofitting	NLDC
38	400KV BUS-LAT BSE	9/20/2013	8:00	9/20/2013	20:00	ODB	FR-I	EOR ANNUAL MAINTENANCE WORK	
39	TIE BAY OF 400KV PSI - BSE-IL AT PSI	9/20/2013	8:00	9/20/2013	18:00	ODB	FR-I	FOR SAS INTEGRATION WORK AT PSI	
40	I /REACTOR OF 400KV PSI-BSE-IL AT PSI	9/20/2013	8:00	9/20/2013	18:00	ODB	FR-I	FOR SAS INTEGRATION WORK AT PSI	
/1	220KV Durgapur-Bidbannagar Line	9/20/2013	9.30	9/20/2013	17:30	ODB	ER-II	CVT and lumper replacement work	
41	400 kV Binaguri- Purpea-2 Line	9/21/2013	10.00	9/21/2013	16:00	ODB	ER-II	Numerical relay retrofitting	NLDC
12		0/22/2013	8.00	0/22/2012	18:00	ODR	ER-I		NEDC
43	220 KV SUBHASGRAM (DG) - SUBHASGRAM (W/R) - 1	9/22/2013	5:00	9/22/2013	15:00	008			
44		9/22/2013	8.00	9/22/2013	19:00	ODR	ED.I		NUDC
45	400 KV PSE-BSI-1	0/22/2013	10.00	0/22/2013	14.00	ODB		OK Decloserent work	NEDC
40	200 kV Durgapur-Jahisheupur Line	9/22/2013	10:00	9/22/2013	14:00	ODB	ER-II	CVT Replacement work	
47		9/22/2013	8:00	9/23/2013	17:00	ODB	ER-II	FOR SACINE COMPLETION MODIL AT DSL	
48	THE BAY OF 400KV PSL-BSF-LAT PSL	9/23/2013	8:00	9/23/2013	18:00	ODB	EK-I	FOR SAS INTEGRATION WORK AT PSL	
49	400 KV Rourkela-Sundargarh-Raigarh-1	9/23/2013	8:00	9/24/2013	18:00	OCB	ER-II	For erection of Bus Pipe and balance costruction work & relay retrofitting work	NLDC
50	400 kV Binaguri- Purnea-I Line	9/23/2013	10:00	9/23/2013	16:00	ODB	ER-II	Numerical relay retrofitting	NLDC
51	315 MVA ICT#1 at Subhasgram	9/15/2013	8:00	9/15/2013	16:00	ODB	FR-II	Installation of OTI Unit under	WBSETCL
<u>.</u>	sis mentenzi de subhasgram	5, 15, 2015	0.00	5, 15/2015	10.00	000		NTAMC project	
52	400 kV ICT#1 at Durgapur	9/23/2013	10:00	9/23/2013	16:00	ODB	ER-II	OTI adaptation work under NTAMC project	
52	220 KV NEW DURNEA- DURNEA - 1	0/24/2012	10.00	0/24/2012	17:00	ODR	ED.I	RETROFITTING OF OLD PILOT WIRE PROTECTION BY LINE DIFFERENTIAL RELAYS	
22	220 RV NEW FORNEA- FORNEA - 1	5/24/2013	10.00	3/24/2013	17.00	008		AT BOTH END S/S	
54	315 MVA ICT#2 at Subhasgram	9/22/2013	8:00	9/22/2013	16:00	ODB	ER-II	Installation of OTI Unit under	WBSETCL
	3*110MVAR MID POINT REACTOR OF 765KV GAVA-								
55	EATEHDUR LINE AT SSRM	9/25/2013	8:00	9/28/2013	18:00	ODB	ER-I	FOR FIRE FIGHTING WORK	NLDC
56	400KV PSL-ALLAHABAD LINE	9/25/2013	8:00	9/25/2013	18:00	ODB	FR-I	FOR SAS INTEGRATION WORK AT PSL	NLDC
57	315MVA ICT-Lat Maithon	9/25/2013	9:00	9/25/2013	17:00	ODB	FR-II	Numerical relay retrofitting related work	DVC
58	400 kV Binaguri- Bongaigoan-II	9/25/2013	10:00	9/25/2013	16:00	ODB	FR-II	Numerical relay retrofitting	NLDC
59	400 KV Bourkela-SEI-1	9/25/2013	9.00	9/25/2013	17:00	ODB	FR-II	Numerical Relay Retrofitting in MAIN-2	NLDC
60	400 kV ICT#2 at Durgapur	9/25/2013	10.00	9/25/2013	13:00	ODB	FR-II	OTI adaptation work under NTAMC project	HEB C
61		9/26/2013	8.00	9/26/2013	18:00	ODB	FR-I	EOR SAS INTEGRATION WORK AT PSI	NLDC
62	125 MVAR BUS REACTOR-II AT PATNA	9/26/2013	9.00	9/27/2013	18:00	ODB	ER-I	FOR BALANCE ERECTION WORK OF IM NEAR 125 MVAR B/R-II BAY	NEDC
63	400kV SAGARDIGHL SUBHASGRAM	9/26/2013	8.00	9/26/2013	16:00	ODB	ER-II	LINE ILIMPER TIGHTENING / NTAMC OT EITTING / LA REPLACEMENT	WBSETCI
64		0/27/2012	8.00	0/27/2012	18:00	ODR	ER I		WBSETCE
04	THE BAT OF 400KV PSL-ALLAHABAD LINE AT PSL	9/2//2015	8.00	9/2//2015	16.00	UDB	EN-I	POR SAS INTEGRATION WORK AT PSL	
65	220 KV NEW PURNEA- PURNEA - 2	9/27/2013	10:00	9/27/2013	17:00	ODB	ER-I	AT DOTUGNIO C/C	
66	21EMI/A ICT II at Maithan	0/27/2012	0:00	0/27/2012	17:00	ODR	ED II	AT BUTH END 5/5 Numerical ralay rateofitting ralated work	BVC
00	315MVA ICT-II at Malthon	9/2//2013	9:00	9/2//2013	17:00	ODB	ER-II	Numerical relay retroliting related work	DVC
67	220 KV Durgapur-DVC-1	9/27/2013	9:30	9/2//2013	17:30	ODB	ER-II		
60	220 KV IVIEramundali-Bhajanagar D/C	9/2//2013	8:00	9/28/2013	12:00	ODB	EK-II	For stringing completion of LiLO 400 KV Taicher-Meramundali line	A ADI
70		3/28/2013	9.00	3/26/2013	16:00	ODB	ER-II	Impedance measurement of Line for distance accuracy	
70		3/28/2013	0.00	3/26/2013	18:00	ODB	ER-II		
/1		3/29/2013	0.00	3/23/2013	10.00	000	ER-1		
72	132 KV D/C LOHARDAGA - GUMLA IL OF JSEB	9/29/2013	7:00	9/29/2013	18:00	ODB	EK-I	FOR STRINGING OF 765 KV S/C RANCHI - SIPAT TEBETWEEN 35/6 & 35/6A	IZER
/3	L/REACTOR OF 400KV PSL-SARNATH LINE AT PSL	9/29/2013	8:00	9/29/2013	18:00	ODB	EK-I	FUR SAS INTEGRATION WORK AT PSL	
/4	220 KV Durgapur-DVC-2	9/29/2013	9:30	9/29/2013	17:30	ODR	EK-II	CI Jumper Replacement work	
/5	TIE BAY OF 400KV PSL-SARNATH LINE AT PSL	9/30/2013	8:00	9/30/2013	18:00	ODB	EK-I	FOR SAS IN LEGRATION WORK AT PSL	
76	L/REACTOR OF 400KV PSL-ALLAHABAD LINE AT PSL	9/30/2013	8:00	9/30/2013	18:00	ODB	ER-I	FOR SAS INTEGRATION WORK AT PSL	
77	400KV Maithon-Mejia-I & II	9/30/2013	9:00	9/30/2013	13:00	ODB	ER-II	Impedance measurement of Line for distance accuracy	DVC
78	220KV Subhasgram - CESC -II	9/30/2013	8:00	9/30/2013	14:00	ODB	ER-II	CT OIL SAMPLING FOR DGA	WBSETCL
79	400kV Durgapur-BIDHANNAGAR	9/30/2013	10:00	9/30/2013	17:00	ODB	ER-II	NGR LA replacement, MOG replacement(Y-PH) & AMP.	
80	400 kV Meramundali-JSPL D/C	9/30/2013	8:00	10/1/2013	17:00	ODB	ER-II	For stringing completion of LILO 400 kV Talcher-Meramundali line	
81	315 MVA ICT - 2 AT ARAMBAG	10/1/2013	7:00	10/1/2013	16:00		WBSETCL	MAINTENANCE WORK	
82						1		DAAD DUL TURIN	1000
	132kv Kh-Lalmatia	10/1/2013	9:30	10/1/2013	17:30		NIPC	PM & Relay Testing	JSEB
83	132kv Kh-Lalmatia 400 KV RANCHI - MAITHON TL	10/1/2013 10/1/2013	9:30 7:00	10/1/2013 10/2/2013	17:30 18:00	ODB	NTPC ER-I	FOR STRINGING OF 400 KV RANCHI - RANCHI TL - II BETWEEN 26/0 TO 27/0	12FR
83 84	132kv Kh-Lalmatia 400 KV RANCHI - MAITHON TL 400 KV RANCHI- RAGHUNATHPUR TL	10/1/2013 10/1/2013 10/1/2013	9:30 7:00 7:00	10/1/2013 10/2/2013 10/2/2013	17:30 18:00 18:00	ODB ODB	RIPC ER-I ER-I	FOR STRINGING OF 400 KV RANCHI - RANCHI TL - II BETWEEN 26/0 TO 27/0 FOR STRINGING OF 400 KV D/C RANCHI - RANCHI TL - II BETWEEN 26/0 TO 27/0	JSEB

		1	1				1		1
									SHUTDOWN TO BE CLEARED
96		10/1/2012	7:00	10/7/2012	18.00	ODR	ED.I	FOR ORCH STRINGING UNDER UIDC PROJECT	FOR 7 DAYS AND FURTHER
00	400 KV PATNA - BARH - 3	10/1/2013	7.00	10/7/2015	10.00	ODB	EK-I	TOR OFOW STRINGING ONDER DEDC FROSECT	CLEARANCE WOULD BE
									ISSUED WEEKLY BASIS
87	400 kV BOLANGIR-ANGUL-MERAMUNDALLI	10/1/2013	9:00	10/1/2013	17:00	ODB	ER-II	Extension of Gantry to Talcher Meramundalli LILO Line bays	NLDC
00	215 MVA ICT Lat Ripaguri	10/1/2012	0.20	10/1/2012	14:00	ODB	ED 11	Installation of OTI Unit under	
00	STS WIVA ICT-I at Billaguil	10/1/2015	9.50	10/1/2015	14.00	ODB	ER-II	NTAMC project	
00	215 MM/A ICT II at Diagonati	10/1/2012	14-20	10/1/2012	17.00	000	<b>FD II</b>	Installation of OTI Unit under	
89	315 MVA ICI-II at Binaguri	10/1/2013	14:30	10/1/2013	17:00	ODB	ER-II	NTAMC project	
90	315 MVA ICT#3 at Subhasgram	10/1/2013	8:00	10/1/2013	14:00	ODB	ER-II	CT OIL SAMPLING FOR DGA	WBSETCL
91	400KV BUS-1 Durgapur	10/2/2013	10:00	10/2/2013	17:00	ODB	ER-II	CVT Replacement work.	
92	400KV Maithon-Durgapur- I & II	10/2/2013	9:00	10/2/2013	13:00	ODB	ER-II	Impednace measurement of Line for distance accuracy	
93	400 KV KTPP - ARAMBAG	10/3/2013	7:00	10/3/2013	16:00		WBSETCL	MAINTENANCE WORK	
94	220 KV BUS COUPLER AT ARA S/S	10/3/2013	9:00	10/3/2013	17:00	ODB	ER-I	FOR ANNUAL MAINTENANCE WORK	
95	220 KV Dalkhola-Purnea-I	03-10-2013	8:00	03-10-2013	18:00	ODB	ER-II	Retroffitting of CVTs under ADDCAP	
96	400 kV BOLANGIR-ANGUL-MERAMUNDALLI	10/3/2013	9:00	10/5/2013	17:00	ODB	FR-II	Extension of Bus-II to Talcher Meramundalli LILO Line bays	NLDC
								Installation of OTI Unit under	
97	400 KV TALA - BINAGURI - I	10/3/2013	9:30	10/3/2013	10:30	ODB	ER-II	NTAMC project	NLDC
								Installation of OTI Unit under	
98	400 KV TALA - BINAGURI - II	10/3/2013	14:30	10/3/2013	15:30	ODB	ER-II	NTAMC project	NLDC
99	220KV Subbasgram - CESC -I	10/3/2013	8.00	10/3/2013	14.00	ODB	FR-II	CT OIL SAMPLING FOR DGA	WBSETCI
100	400kv Kh-Banka -2	10/3/2013	9.30	10/3/2013	17:30	000	NTPC	PM & Relay Testing	NIDC
101	100kv Barb-Kabalgaon -1	10/4/2013	9:00	10/4/2013	17:00		NTPC	Alignment & maintenance of the isolator of Kh-1 & Patna-1 line	NLDC
101		10/4/2013	10.00	10/4/2013	14:00	ODB	FR-I		NLDC
102		10/4/2013	9.00	10/4/2013	17:00	ODB	ER-I		BIHAR
105		10/4/2013	5.00	10/4/2015	17.00	000	ERT	Installation of OTI Unit under	Dinan
104	400 KV TALA - BINAGURI - IV	10/4/2013	9:30	10/4/2013	10:30	ODB	ER-II	NTAMC project	NLDC
105	400KV IEEBAT - BEHABAMPUB LINE	10/4/2013	8.00	10/4/2013	18.00	ODB	FR-II	CT REPLACEMENT / REACTOR AMP	NI DC/WBSETCI
106	400 kV Moramundali ISBI D/C	10/4/2012	8:00	10/5/2012	17:00	ODB		For stringing completion of UIO 400 kV Talsher Meramundali line	1120 0, 11002 1 02
100		10/4/2013	7.00	10/5/2013	17.00	ODB			ł
107	400 KV ARAIVIBAG - BAKRESWAR	10/5/2013	7:00	10/5/2013	16:00	000	VVBSEICL		NUDC
108	400KV PATNA-BALIA-IV	10/5/2013	10:00	10/5/2013	14:00	ODB	ER-I		NLDC
109	220 KV Daikhola-Purnea-II	05-10-2013	8:00	05-10-2013	18:00	ODB	ER-II	Retrottitting of CVTs under ADDCAP	
110	125 MVAR Bus Reactor-I at Binaguri	10/5/2013	9:30	10/5/2013	14	ODB	ER-II	Installation of OTI Unit under	
								NTAMC project	
111	125 MVAR Bus Reactor-II at Binaguri	10/5/2013	14:30	10/5/2013	17:00	ODB	ER-II	Installation of OTI Unit under	
								NTAMC project	
112	400KV Maithon-Jamshedpur Line & 400KV Maithon-Mejia-	10/6/2013	9:00	10/6/2013	13:00	ODB	ER-II	Impednace measurement of Line for distance accuracy	NLDC/DVC
	III Line & 400KV Mejia-Jamshedpur Line								
113	50 MVAR B/R AT BAKRESWAR	10/7/2013	5:00	10/8/2013	14:00	ODB	WBSEICL		
114	125MVAR BUS REACTOR-I AT PATNA	10/7/2013	9:00	10/8/2013	18:00	ODB	ER-I	FOR TIE BAY ERCTION WORKS AT PTN	
115	400KV Maithon-Kahalgaon-I & II	10/7/2013	9:00	10/7/2013	13:00	ODB	ER-II	Impedance measurement of Line for distance accuracy	NLDC/DVC
								FOR REMOVAL OF E/W TO MAINTAIN CLEARANCE OF POWERLINE CROSSING OF	
116	220KV PUSALILI-DEHRI	10/8/2013	10.00	10/8/2013	12.00	ODB	FR-I	400 KV PSL - ALD & 400 KV PSL - SNT LINE ( BETWEEN LOC NO 1 & 2) WITH 220	BIHAR
110		10/0/2015	10.00	10/0/2015	12.00	000	2		Binnit
								NV FSE-DETINI AND 220 NV FSE-SALIOF ORI LINE BETWEEN LOC. NO. 18 & 19)	
								FOR REMOVAL OF F/W TO MAINTAIN CLEARANCE OF POWERLINE CROSSING OF	
117		10/8/2013	12.15	10/8/2013	14.15	ODB	FR-I	400 KV PSL - ALD & 400 KV PSL - SNT LINE ( BETWEEN LOC NO 1 & 2) WITH 220	NLDC
11/	220NV I GSAGLI-SATIOFONI	10/ 3/ 2013	12.13	10/ 0/ 2015	14.13	000			THE C
1		1				1	1	NV PSL-DERNI AND ZZU KV PSL- SARUPUKI LINE BETWEEN LOC. NO. 18 & 19)	1

		1	1	1	I	1	1		
									SHUIDOWN TO BE CLEARED
118	400 KV PATNA - BARH - 3	10/14/2013	7:00	10/7/2013	18:00	ODB	ER-I	FOR OPGW STRINGING UNDER ULDC PROJECT	FOR 7 DAYS AND FURTHER
						-			CLEARANCE WOULD BE
									ISSUED WEEKLY BASIS
119	400 KV D/C RANCHI - SIPAT TL	10/14/2013	8:00	10/15/2013	18:00	ODB	ER-I	FOR STRINGING OF 400 KV D/C(QUAD) RANCHI-CHANDWA TL	NLDC
120	400 kV New Siliguri-Purnea Ckt I	10/15/2013	9:00	10/20/2013	16:00	ODB	ER-II	For Tower erection at Loc. 251 / 0 of HVDC line	NLDC
121	315 MVA ICT - II AT JSR	10/16/2013	9:30	10/16/2013	17:30	ODB	ER-I	FOR ANNUAL MAINTENANCE WORK	JSEB
122	315 MVA ICT-2 AT RNC	10/17/2013	10:00	10/17/2013	12:00	ODB	ER-I	FOR ANNUAL MAINTENANCE WORK FOR 220KV SIDE BAY	JSEB
123	50 MVAR BUS REACTOR - II AT JSR	10/17/2013	9:30	10/17/2013	17:30	ODB	ER-I	FOR ANNUAL MAINTENANCE WORK	
124	400 kV Meramundali-IB D/C	10/15/2013	8:00	10/16/2013	17:00	ODB	ER-II	For stringing completion of LILO 400 kV Talcher-Meramundali line	
125	315 MVA ICT-V at Malda	10/18/2013	9:00	10/18/2013	18:00	ODB	ER-II	AMP of ICT and bay equipment.	
126	315 MVA ICT - II AT BSF	10/18/2013	9:00	10/18/2013	15:00	ODB	ER-I	FOR ANNUAL MAINTENANCE WORK	BIHAR
127	400 kV Meramundali-Jevpore	10/18/2013	8:00	10/19/2013	17:00	ODB	ER-II	For stringing completion of LILO 400 kV Talcher-Meramundali line	
								For lumpering between extension bay and existing bus (under construction	
128	400KV MAIN BUS-1 at Malda	10/19/2013	9:00	10/19/2013	17:00	ODB	ER-II	head) Total nower ineruntion	1
						1		Replacement of Single Zehra in 132KV Transfer bus with Single moose & CT	
129	132 KV Main Bus & Transfer Bus at 220 KV Siliguri	10/20/2013	8:00	10/21/2013	18:00	OCB	ER-II	Replacement 132K/ M/REETCL II (Total newsriptoruption)	WBSETCL
120		10/21/2012	E-00	10/22/2012	14:00	ODR	WRETCI		
130	400 KV ARAIVIBAG - BARRESWAR	10/21/2013	0:00	10/25/2013	17:00	OCB	NTDC	Fraction & commissioning of 400kg main bay BHEL broaker	NUDC
151		10/21/2015	9.00	10/20/2015	17.00	OCB	NIPC	Election & commissioning of 400kV main bay brief breaker	NLDC
132	400KV RANCHI-ROURKELA-2	10/21/2013	8:00	10/21/2013	18:00	ODB	ER-I		NLDC
133	220 kV Rengali-OPTCL-1	10/21/2013	9:00	10/21/2013	17:00	ODB	ER-II	AMP AS PER AMP SCHEDULE	OPICL
134	132 KV Transfer Bus at Birpara	10/21/2013	9:00	10/21/2013	17:00	ODB	ER-II	AMP Work	WBSETCL
135	400kv Fkk-Kahalgaon-3	10/22/2013	9:30	10/22/2013	16:30		NTPC	PM & Relay Testing	NLDC
136	400kv Bus Reactor-2 AT KHSTPP	10/22/2013	9:30	10/22/2013	17:30		NTPC	PM & Relay Testing	4
137	400KV Maithon-Koderma-II	10/22/2013	9:00	10/22/2013	17:00	ODB	ER-II	Bushing replacement work of Reactor	NLDC
138	132 KV Main Bus at Birpara	10/22/2013	9:00	10/22/2013	17:00	ODB	ER-II	AMP Work(total power ineruption)	WBSETCL
139	220KV Birpara-Salakati Ckt-I	10/23/2013	9:00	10/23/2013	17:00	ODB	ER-II	Insulator replacement work damaged due to flash over/miscreant	NLDC
140	220 kV Rengali-OPTCL-2	10/23/2013	9:00	10/24/2013	17:00	ODB	ER-II	AMP AS PER AMP SCHEDULE	OPTCL
141	400 KV BAKRESWAR - JERAT	10/24/2013	5:00	10/26/2013	14:00	ODB	WBSETCL	MAINTENANCE WORK	
142	400 KV RANCHI - MAITHON TL	10/24/2013	7:00	10/25/2013	18:00	ODB	ER-I	FOR STRINGING OF 400 KV D/C RANCHI - RANCHI TL - I BETWEEN 24B/0 TO 25/0	
143	400 KV RANCHI- RAGHUNATHPUR TL	10/24/2013	7:00	10/25/2013	18:00	ODB	ER-I	FOR STRINGING OF 400 KV RANCHI - RANCHI TL - I BETWEEN 24B/0 TO 25/0	
144	220KV Birpara-Salakati Ckt-II	10/24/2013	9:00	10/24/2013	17:00	ODB	ER-II	Insulator replacement work damaged due to flash over/miscreant	NLDC
145	220KV Birpara-New Siliguri -I	10/25/2013	9:00	10/25/2013	17:00	ODB	FR-II	Insulator replacement work damaged due to flash over/miscreant	
146	400ky Ekk-Kahalgaon-4	10/25/2013	9:30	10/25/2013	16:30		NTPC	PM & Relay Testing	NLDC
147	220KV Birpara-New Siliguri -II	10/26/2013	9.00	10/26/2013	17:00	ODB	FR-II	Insulator replacement work damaged due to flash over/miscreant	
148	220 KV Dalkhola-Malda-I	10/27/2013	8:00	10/27/2013	18:00	ODB	FR-II	Retroffitting of CTs under ADDCAP	
1/0	220 KV Malbase Birpara TI	10/27/2012	0.00	10/27/2013	17:00		ERII	Insulator replacement work damaged due to flash over/miscreant	NUDC
145	220 KV Maldase-birpara TE	28 10 2012	9:00	28 10 2012	19:00	ODB		Retroffitting of CTs under ADDCAD	NEDC
150	400 K/ Bipaguri, Bongoigaon I	20-10-2015	0:00	20-10-2015	17:00	ODB	EN-II	Retronning of CTS under ADDCAP.	NUDC
151	400 KV Binaguri- Bongaigaoli-i	10/20/2013	9.00	10/20/2013	17.00	ODB		Insulator replacement work damaged due to flash over/miscreant	NEDC
152	400 KV Binaguri- Bongaigaon-II	10/29/2013	9:00	10/29/2013	17:00	ODB	ER-II	insulator replacement work damaged due to flash over/miscreant	NLDC
153	220KV Chukha-Birpara-I	10/30/2013	9:00	10/30/2013	17:00	ODR	EK-II	Insulator replacement work damaged due to flash over/miscreant	NLDC
154	220KV CNUKNA-BIPpara-II	10/31/2013	9:00	10/31/2013	17:00	ODB	EK-II	Insulator replacement work damaged due to flash over/miscreant	NLUC
155	220 KV Daiknola-Siliguri-II	01-11-2013	8:00	01-11-2013	18:00	ODB	EK-II	Retrottitting of CIs under ADDCAP.	ł
156	220 KV Dalkhola-Siliguri-l	02-11-2013	8:00	02-11-2013	18:00	ODB	ER-II	Retroffitting of CTs under ADDCAP.	1
157	220KV Siliguri-New Siliguri-I	03-11-2013	8:00	03-11-2013	20:00	ODB	ER-II	CVT Replacement	1
158	220KV Siliguri-New Siliguri-II	04-11-2013	8:00	04-11-2013	20:00	ODB	ER-II	CVT Replacement	1

## 400 KV BINAGURI - BONGAIGAON - D/C OUTAGE REQUISITE BY M/S ENICL PROVISIONALY CLERAED FOR 4 DAYS EITHER IN THE LAST WEEK OF SEPTEMEBER OR FIRST WEEK OF OCTOBER FROM 07:00 HR TO 17:00 HR ON DAILY BASIS FOR CONSTRUCTION OF 400 KV BINAGURI - BONGAIGAON - 3 &4