

EASTERN REGIONAL POWER COMMITTEE

14, GOLF CLUB ROAD, TOLLYGUNGE
KOLKATA-700033

MINUTES OF 45th OCC MEETING E HELD AT ERPC, KOLKATA ON 18.12.2009 (FRIDAY)

Sh. A. K. Bandyopadhyaya, Member Secretary I/C, ERPC chaired the meeting. List of participants is at Annexure-I.

Member Secretary I/C, ERPC welcomed all participants of 45th OCC meeting. He informed that critical coal stock position of Eastern Region thermal power stations was still continuing as one of the main issue in the agenda and CIL was invited in this meeting to help us in sorting out the issue. He hoped that deliberation would be fruitful.

Then he took up agenda items one by one.

ITEM NO. 1: CONFIRMATION OF MINUTES OF 44th OCC MEETING OF ERPC HELD AT ERPC, KOLKATA ON 20.11.2009

The minutes were circulated vide letter no. ERPC/SE(OPRN)/ OPERATION/2009/1195-1242 dated 27.11.09. No observation was received from the constituents on the minutes.

Members may kindly confirm the minutes.

Deliberation in the meeting

As there was no observation on minutes circulated, Members confirmed the above minutes without any modification.

ITEM NO. 2: ACTION TAKEN ON DECISIONS OF EARLIER MEETINGS

2.1 OPERATIONALISATION OF BALIMELA-UPPER SILERU LINE

Orissa portion of the line is healthy but the line is not yet operational. The issue was taken up in 10th TCC meeting of ERPC held on 28th August 09 and 44th OCC meeting held on 20.11.09. In the 44th OCC meeting, it was decided a meeting with representatives from OPTCL, OHPC, APGENCO, APTRANSCO and others would be convened by ERPC after the ensuing TCC/ERPC meeting scheduled to be held on 3-4th December,2009. The meeting would be held tentatively in the first week of January'10.

Members may kindly note.

Deliberation in the meeting

Member Secretary I/C informed that the said meeting would be arranged in 3rd week of January'10. On a query, representative from OPTCL informed that all elements of the said line within Eastern Region were healthy, and OPTCL was requested to confirm the healthiness of the line elements to ERPC Secretariat within fortnight.

ITEM NO. 3: REVIEW OF COAL STOCK IN VARIOUS TPSs OF EASTERN REGION AS ON 30.11.09

- 9 stations were “Super-critical” (less than 4 days coal stock)
- 11 stations were “Critical” (less than 7 days coal stock)
- Coal stock position of 23 TPSs of ER is as below:

COAL STOCK OF ER TPS AS ON 30.11.09

Sl No.	Power Station	Capacity MW	Mode of transport	Linked Mines	Daily Coal Required '000 MT	Coal Stock in Days		Loss of generation in mu in Nov'09
						Normalive (CEA web)	Actual	
<u>NTPC</u>								
1	Farakka STPS @	1600	Pithead	ECL, BCCL, CCL, MCL and NEC	32.64	15	0	294.72
2	Kahalgaon STPS @	1840	Pithead		37.536	15	0	603.91
3	Talcher STPS @	3000	Pithead		61.2	15	1	21.70
<u>DVC</u>								
4	BTPS-B	630	Rail	ECL, BCCL, CCL and MCL	10.5	20	38	
5	Chandrapur	750	Rail		6.5	20	95	
6	Durgapur	350	Rail		5.46	20	21	
7	Mejia @	1340	Rail		22.5	20	0	
<u>BSEB</u>								
8	Barauni	320	Rail	ECL, BCCL	1	20	32	
9	Muzzafarpur	220	Rail		1	20	26	
<u>JSEB</u>								
10	Patratu @	840	Rail	CCL	4	20	3	
11	Tenughat @	420	Road	CCL	6.6	20	1	
<u>Orissa</u>								
12	IB TPS	420	Pithead	MCL	8	15	21	9.55
13	Talcher Old	470	Pithead	MCL	8.3	15	12	
<u>WBPDC</u>								
14	Kolaghat TPS @	1260	Rail	ECL, BCCL and MCL	17.85	25	3	102.70
15	Bakreswar TPS @	840	Rail		10.8	25	3	
16	Santalidih TPS	730	Rail		6.235	20	7	
17	Bandel TPS #	450	Rail		4.97	20	6	
18	Sagardighi @	600	Rail		7.2	20	1	
<u>DPL</u>								
19	DPL TPS #	690	Rail	BCCL, ECL, MCL	9.6	20	5	
<u>CESC</u>								
20	Budge-Budge	500	Rail	ECL, BCCL and MCL	7.2	20	11	
21	Titagarh	240	Rail		3.4	20	7	
22	Southern REPL	135	Rail		2.4	25	11	
23	New Cossipore	130	Rail		1.1	20	20	

“#” stands for station with less than 7 days coal stock and more than 3 days coal stock
 “@” stands for Super-critical station with less than 4 days coal stock

Coal stock positions of Eastern Regional Thermal Power Stations are regularly monitored in the OCC meetings of ERPC and representative of CIL, Railways are specially invited in this OCC meeting.

CIL and ER Thermal generating companies may apprise coal requirement and coal supply required for maintaining their anticipated generation availability during the month of January'10.

Deliberation in the meeting

Representative of CIL stated that barring Farakka and Kahalagaon, there was no coal supply problem for Eastern Region Thermal Power Stations. However, he added that some of the ER stations were facing logistics problems for supply of coal.

Regarding Mejia, it was noted that coal stock position aggravated due to pilferage activity and resultant abysmal position caused near shutdown of the units. However, with active support of CIL, DVC had managed to overcome the problem. Representative of CIL further assured that more rakes would be sent through SE Railway.

Representative from Talcher STPP informed of poor coal quality (specific coal consumption as high as 0.9). Representative of CIL informed that TSTPP had contracted "F" grade coal and conformity to coal grade was 100% for TSTPP. He requested that TSTPP to actively associate with Joint Sampling Procedure so that their concerns are addressed properly.

Representative of CIL intimated that Inland Waterways were making river based transportation scheme through Haldia-Kahalgaon-Barh. This would commence operation by December'10 and this logistic support would help in mitigating the load in railway logistic.

Member Secretary I/C, ERPC enquired about power supply interruption to CIL from DVC area. Representative from DVC stated that they were looking into it and assured to sort out the issue at the earliest.

ITEM NO. 4: REVIEW OF GRID PERFORMANCE DURING NOVEMBER, 2009

ERLDC may kindly give a brief on performance of ER grid during November 2009 (Power Supply Position given at Annexure-II(a)).

Deliberation in the meeting

Representative of ERLDC made a presentation on ER grid performance during November'09 (Copy at Annexure II(b)).

It was noted that y-o-y growth in peak demand met for Orissa in the month of November'09 was almost zero with slightly negative bias. OPTCL informed that this happened due to load restrictions imposed by DISCOM. However, such load restriction figures were not reported upon to ERLDC.

Members requested OPTCL to collect such load restriction data from concerned DISCOM and furnish it to ERLDC during exchange of data during peak hours.

ITEM NO. 5: MOCK BLACKSTART EXERCISES IN EASTERN REGION --- ERLDC

The above issue was discussed in the last OCC meeting. In the meeting, it was understood that DVC carried out the mock-start exercise of Maithon HEP except for unit#2. DVC assured to furnish a detailed report on the black start exercise undertaken by them. However the same was not received.

- DVC may kindly share the same.
- Teesta HEP had conveyed its willingness to carryout the black start exercise. Members may kindly decide the date for the exercise.
- Purulia Pumped Storage Plant may convey its willingness to carry out black start exercise alongwith tentative schedule.

Deliberation in the meeting

Representative of DVC informed that the report on Mock Black Start Operation of Maithon was under preparation and would be submitted within a fortnight. On a query, he intimated that date for the similar mock black start operation of Maithon HEP in presence of OCC members would be intimated shortly.

Representative of ERLDC stated that mock black start operation involved a two pronged activity, i.e. dead bus synchronisation of the station and thereafter successful operation of the station on part load for some time. He requested WBSETCL to explore various switching arrangements for providing around 100 MW radial load from Binaguri side so that Teesta HEP could run on islanded mode with this radial load during mock black start operation for some time. WBSETCL agreed to explore arrangements for providing 100 MW radial load at Binaguri.

It was also agreed that mock black start operation of Teesta HEP involving dead bus synchronization of the units at Binaguri end would be carried out in the month of January'10.

Representative of WBSEDCL stated that concurrence of Purulia Pumped Storage Plant (PPSP) for mock Black Start Operation was under consideration of the Station Authority and decision would be intimated later on. It was noted that Teesta HEP and PPSP stations both have Hitachi made units.

It was decided that engineers of PPSP would be invited to have the experience of mock black start operation of Teesta HEP. Meanwhile, WBSEDCL may carry out exercise for providing part load islanded operation of PPSP during mock black start operation.

ITEM NO. 6: DECLARING OF PEAK HOURS FOR SCHEDULING PURPOSES UNDER FUEL SHORTAGE CONDITIONS --- ERLDC

For purposes of scheduling under fuel shortage conditions prior declaration of peak hours needs to be done on a month ahead basis. Considering advancement of Sunset timings, it is proposed that peak Hours for the month of January'10 may be considered from 17:30 hrs to 20:30 hrs.

Members may deliberate & confirm.

Deliberation in the meeting

Members agreed that peak Hours for the month of January'10 would be considered from 17:30 hrs to 20:30 hrs.

ITEM NO. 7: GRID INCIDENCES IN ER SYSTEM DURING NOVEMBER 2009

Grid incidences in ER System during the month of November 09 are placed for discussion.

Concerned constituents may kindly apprise the grid incidences.

Deliberation in the meeting

Deliberations on grid incidences are at *Annexure-III*.

ITEM NO. 8: OPERATIONAL PLANNING

(A) MAJOR GENERATING UNIT AND TRANSMISSION LINES/ELEMENTS OUTAGES IN ER GRID

Concerned constituents may share the latest status on outage of following transmission elements:

- i. 400 kV Tala - Binaguri- IV
- ii. 400 kV Malda-Purnea D/C
- iii. 220 kV Meramundali-Bhanjanagar D/C
- iv. 80MVAR Line Reactor of 400KV Ranchi-Sipat-I at Ranchi end
- v. 50MVAR Line Reactor of 400KV KhSTPP-Maithon-II at Maithon end

Deliberation in the meeting

Status of the elements are as under:

Sl.No.	Transmission Element	Status
1	400 kV Tala - Binaguri- IV	The line is expected by March'10
2	400 kV Malda-Purnea D/C	One circuit is already restored on ERS on 25.11.09.
3	220 kV Meramundali-Bhanjanagar D/C	One circuit already restored through ERS. It was decided to reroute a portion of the above line. The line is expected by January'10
4	80MVAR Line Reactor of 400KV Ranchi-Sipat-I at Ranchi end	The element is expected by January'10.
5	50MVAR Line Reactor of 400KV KhSTPP-Maithon-II at Maithon end	The element is expected by August'10.

(B) SHUTDOWN PROPOSAL OF TRANSMISSION LINES AND GENERATING UNITS FOR THE MONTH OF JANUARY'10.

The shut down proposals which are received by ERPC for the month of January'10

are placed for discussion.

Members may please discuss and finalize the proposed programme.

Deliberation in the meeting

- *The approved shutdown programme is at Annexure IV.*
- *In this regard, while furnishing information on LGBR for the year 2010-11, ISGS were requested not to plan any shutdown during Puja Days. DGPC was also requested to submit relevant information for preparation of LGBR for the year 2010-11.*

ITEM NO. 9: FURNISHING OF DAILY POWER POSITION DATA OF CAPTIVE GENERATING PLANTS EMBEDDED IN STATE SYSTEMS --- ERLDC

A number of captive generating stations have come up which are embedded in state utility systems and are injecting power into the respective system. During exchange of power position data, state utilities may furnish this information to RLDC to facilitate assessment of total availability of the concerned state vis-à-vis the demand met. The above issue was also discussed in the 11th TCC meeting held at Gangtok.

State utilities may note and furnish the same.

Deliberation in the meeting

In order to correctly assess the power supply position of the states in Eastern Region, representative of ERLDC requested constituent States specially Orissa and West Bengal and DVC to furnish daily power position data of captive generating plants embedded in state system.

ITEM NO. 10: ANY OTHER POINT

10.1 DETAIL INFORMATION REGARDING USE OF COAL BY NTPC STATIONS ---- GRIDCO

GRIDCO pointed out that the energy bills of NTPC stations were not accompanied by important supplementary documents showing use of quantity/price of indigenous and imported coal as well as proportion of blending of the two types of coal. This information was already submitted to CERC in Form-15. However in spite of repeated requests, this information is not shared by NTPC. He requested NTPC to clarify their stand on the same.

It was decided that this information having commercial implication, be discussed in the Commercial sub-Committee meeting of ERPC.

10.2 LILO OF JODA-JAMSHEDPUR LINE AT JINDAL STEEL BUS AT LAHANDA - OPTCL

Representative from OPTCL informed that as per approval of CEA, 220 kV Joda-Jamshedpur line would be made LILO at Jindal Steel bus at Lahanda within a week time and Jindal had agreed to install tow nos. of ABT compliance energy meters of accuracy class 0.2 at their 220 kV Auto-I and II ends for the time being. OPTCL requested PGCIL to shift their meter installed at Joda to Jindal Steel Switchyard.

As Joda-Jamshedpur line is an interstate line between Orissa and DVC, Members opined that adequacy of communication system, proper Protection and metering arrangement need to be ensured before LILO of the said line.

After deliberation, members decided that approval of CEA in this regard might be shared with ERLDC/DVC/ERPC Secretariat and the matter might be again discussed in the appropriate forum before operationalising LILO of the said line.

10.3 COMMERCIAL IMPLICATION OF REVISION OF DC FOR FSTPP ON 21.10.09 --- NTPC

Representative of NTPC informed that DC revision of FSTPP on 21.10.09 was discussed in the 44th OCC meeting, wherein it was agreed that NTPC would come up with payment implication for taking a decision on the matter. It was further agreed that on the basis of note submitted by NTPC, the issue would be discussed again, if required.

Representative of NTPC stated that information was already submitted to ERPC Secretariat and requested for further deliberation on the matter.

Member Secretary I/C, ERPC informed that the issue would be discussed in subsequent OCC meeting in presence of Sh. A. K. Rampal, Member Secretary, ERPC.

10.4 FURNISHING OF INFORMATION ON CRISIS MANAGEMENT PLANT

Member Secretary I/C, ERPC informed that Crisis Management Plan for the year 2009-10 received from Farakka STPP, Kolaghat TPS, BSEB, WBSETCL, Teesta HEP, Rangit HEP and CESC. He requested others to submit the same at the earliest.

ITEM NO. 11: DATE AND VENUE OF THE NEXT MEETING

Date and venue of the next meeting would be intimated separately.

Meeting ended with thanks to the Chair.

GRID INCIDENCES IN ER SYSTEM IN THE MONTH OF NOVEMBER'09

I. TRIPPING OF TALCHER-KOLAR POLE-II ON 11/11/09

At 10:46Hrs of 11/11/09, Pole-II of HVDC Talcher-Kolar got blocked on operation of 'Fire Detection Alarm' at Talcher end. Pole-I was already out for maintenance works. Power flow before tripping was of the order of 988MW. Pole-II was deblocked at 13:18 hrs on same day.

Deliberation in the meeting

- With the outage of Pole-II, bulk of the power got diverted through 400 kV Talcher-Rourkella. (ERLDC)
- 400 kV Talcher-Meeramundali -I tripped on overvoltage at Meeramundali end. (NTPC/OPTCL)
- SCADA data did not confirm the over-voltage at Meeramundali. (ERLDC)
- No mal-operation of Fire Detection Alarm. (PGCIL)

Members requested OPTCL/NTPC to confirm tripping of Talcher -Meeramundali-1 line on over voltage.

II. TRIPPING OF ALL LINES FROM BIHARSHARIFF ON 15/11/09

At 10:30 hrs of 15/11/09 due to Y-Ph jumper snapping at Biharshariff(BSEB) of 220 kV Biharshariff-Fatuah-I lines connected to 220 kV Main Bus-I viz. 220 kV Biharshariff-Fatuah-I, 220 kV Biharshariff-Bodhgaya-I, 220 kV Tenughat-Biharshariff alongwith 400/220 kV ICT-I & III tripped. It was reported that Tenughat#2 (only running unit at Tenughat) and all running units at PTPS (Unit#1,2,6,7) tripped and generation of JSEB system was reduced to nil.

Deliberation in the meeting

- Bus-bar differential protection at Biharshariff is not installed yet. Equipment reached the site and would be commissioned shortly. (BSEB)
- Non-clearance of fault at Biharshariff end have apparently caused tripping of lines connected with Biharshariff s/s from other end.
- Tripping of Tenughat and Patratu generating units were not logically explained.

Members referred the incident to Protection sub-Committee meeting for further deliberation.

III. TRIPPING OF ALL RUNNING UNITS AT DPL ON 15/11/09

At 23:45 Hrs of 15/11/09, running units#2,4,5,6 at DPL tripped reportedly due to breaker bursting at 33 kV switchyard. DPL#7(300MW) however survived.

Deliberation in the meeting

- Due to tripping of 33 kV switchyard, auxiliary supply to generating units failed resulting into outage of all running units. (DPL)

Members requested DPL to furnish the associated bus-arrangement at DPL and to submit a detailed report on the same.

IV. TRIPPING OF HVDC TALCHER-KOLAR POLE-I ON 19/11/09

At 18:13 hrs of 19/11/09, HVDC Talcher-Kolar Pole-I got blocked reportedly due to DC over-voltage, Stage-II at Talcher. Again during restoration Pole-I tripped repeatedly.

Deliberation in the meeting

- The incident was similar to the incident mentioned at serial no (I) causing diversion of Talcher Stage-II power through ER transmission lines.
- Over-voltage at Talcher was manifestation of problems at Kolar. (PGCIL)
- There was some error in DC measurement system in Kolar , which was subsequently rectified. (PGCIL)

V. TRIPPING OF FEEDERS FROM JEYNAGAR ON 25/11/09

At 19:18 hrs of 25/11/09, all 220 kV feeders emanating from Jeynagar tripped reportedly due to Bus fault at Jeynagar. All units at Balimela (120MW generation) tripped. Tripped lines were restored by 20:54 hrs.

OPTCL may furnish further details.

Deliberation in the meeting

- Due to snapping of 'R' phase CT to breaker jumper of 220 kV Jeynagar-Upper Kolab ckt-I at Jeynagar end, all 220 kV feeders i.e. Theruvali ckt-I &II, Upper Kolab-I &II connected with bus-I tripped due to operation of busbar protection. (OPTCL)
- Balimela HEP units were on Bus-II. (OPTCL)
- Balimela HEP experienced under-voltage and under-frequency and the units were hand tripped. (OPTCL)
- Under-voltage at Balimela might have caused due to delayed clearing of fault at Jeynagar end. (PGCIL)

Members referred the incident to Protection sub-Committee meeting for further deliberation.

VI. TRIPPING OF 765KV BINA-GWALIOR ON 28/11/09

765 kV Bina-Gwalior(charged at 400KV) carrying around 1090MW tripped at 13:26 hrs of 28/11/09 on R-Ph E/F. The above tripping resulted in displacement of power previously flowing from WR to NR, to be wheeled through WR-ER-NR route. This resulted in a heavy jump in import from WR and export to NR. Import from WR increased from 883MW to 2245MW (i.e by 1362 MW). Export to NR increased from 2627MW to 3770MW (i.e by 1143MW). Heavy voltage dip was noticed at all points along which the power was wheeled.

ERLDC may like to supplement.

Deliberation in the meeting

Representative of ERLDC made a presentation on the incident (Copy at Annexure -III(A)). During the incident, few Powergrid lines carried more than 1000 A. As CT ratio of the Powergrid lines are mostly 1000/1, these lines recorded less power flow. Therefore, ERLDC requested Powergrid to take necessary steps for necessary modification in this regard.

VII. TRIPPING OF 400KV KHSTPP-BIHARSHARIFF-III AND KHSTPP-PATNA-I ON 28/11/09

On 28/11/09 at 13:26 hrs, due to tripping of 765 kV Bina-Gwalior (charged at 400kV), a high quantum of power previously flowing from WR to NR was displaced via ER leading to high line loadings and dip in system voltages. 400kV KhSTPP-Biharshariff -III tripped reportedly on activation of overcurrent relay at KhSTPP end (400 kV KhSTPP-Biharshariff-IV was reportedly open on over-voltage). 400 kV KhSTPP-Patna-I reportedly tripped on 3-Ph fault at KhSTPP end. In none of the above cases carrier intertrip was received at Biharshariff/Patna and the breakers at these end remained in closed condition.

Deliberation in the meeting

Representative of NTPC made a detailed presentation on the incident (Copy at Annexure III(B)). He informed that 400 kV Kahalgaon-Patna-I tripped on under-impedance starter. He informed that following actions were already taken:

- Patna#1,2 and BSF#3,4 numerical relay settings sent to corporate engineering for review.
- As per engineering recommendation, over load protection was disabled in REL 521 of patna line#1 and it would be implemented in Patna line#2 and Biharshariff#3,4 at the earliest opportunity.
- Mismatch in Under impedance starter settings in Patna line#1 REL 316 corrected.

VIII. DISTURBANCE IN BSEB SYSTEM ON 08/12/09

At 19:09 Hrs of 08/12/09 315MVA ICT-I & III of Biharshariff(PG), 220 kV Biharshariff-Bodhgaya-I, 220 kV Biharshariff-Fatuah-I, 220 kV Tenughat-Biharshariff tripped. (315MVA ICT-II and one 150MVA ICT at Biharshariff were previously under shutdown). 400 kV KhSTPP-Biharshariff-I also tripped on over-voltage. Due to above outages, Biharshariff (BSEB) Substation became dead and loads at Biharshariff, Bodhgaya, Gaya, Sonenagar, Garwah were interrupted. Power to Bodhgaya was availed from Dehri. NR power was availed for Sonenagar. Restoration of lines/ICTs except 220 kV Biharshariff-Fatuah-I was completed by 21:21 Hrs. However while charging 220 kV Biharshariff-Fatuah-I at 21:26 hrs all three 315MVA ICTs at Biharshariff and lines from Biharshariff tripped and Biharshariff Bus became dead. Second restoration was completed by 23:45 hrs. 220 kV Biharshariff-Fatuah-I was declared under breakdown and load of Fatuah s/s was being kept fed from Patna(PG).

BSEB may furnish further details.

Deliberation in the meeting

- Fault occurred due to snapping of bottom conductor of 220 kV Biharshariff-Fatuah-I line between location no. 50 and 51.

ANNEXURE- IV**Approved Programme of Maintenance Of Transmission Lines And Generating Units as proposed for****JANUARY' 10****(A) GENERATING UNITS:**

Organization	Name of the Element	From		To		Remarks
		Date	Time hrs	Date	Time hrs	
WBPDCL						
Bandel TPS	Unit#4	01.01.10	OCB	31.01.10	OCB	Overhauling
Kolaghat TPS	Unit#5	01.01.10	OCB	28.01.10	OCB	Annual Maintenance
TALA HEP						
TALA	Unit#1	02.01.10	0900 (BST)	10.01.10	1730 (BST)	Combine Maintenance works on Penstock-1
TALA	Unit#2	01.01.10	0000 (BST)	20.01.10	1730 (BST)	
TALA	Unit#3	10.01.10	0900 (BST)	31.01.10	2400 (BST)	
CHUKHA HEP						
CHUKHA	Unit#3	01.01.10	OCB	31.01.10	OCB	Annual Maintenance
NHPC						
Rangit	Unit#1	05.01.10	OCB	29.01.10	OCB	Annual Maintenance
CESC						
Budge-Budge TPS	Unit#1	04.01.10	OCB	31.01.10	OCB	Survey

(B) TRANSMISSION ELEMENTS:

Organization	Name of the Element	From		To		Remarks
		Date	Time hrs	Date	Time hrs	
FARAKKA STPP, NTPC						
	400 kV Bus reactor -1	20.01.10	0930	20.01.10	1630	Relay testing
KAHALGAON STPP, NTPC						
	400 kV Kahalgaon-Patna line-2	12.01.10	ODB	12.01.10	ODB	Preventive maintenance and testing
	400 kV Kahalgaon-Patna line-1	11.01.10	ODB	11.01.10	ODB	
	400 kV Kahalgaon-Maithon line-1	21.12.10	ODB	21.12.10	ODB	
	132 kV Kahalgaon-Kahalgaon (BSEB)line	20.01.10	ODB 1000	20.01.10	ODB 1500	
TALCHER STPP, NTPC						
	400 kV TSTPP-ICT #1*	05.01.10	OCB	07.01.10	OCB	Preventive Maintenance
	400 kV TSTPP-ICT#2*	19.01.10	OCB	21.01.10	OCB	
NTPC						
	400 kV Barh-Kahalgaon line #2 400 kV Barh -Patna Line #2	12.01.10	ODB	15.01.10	ODB	Erection and testing work
	400 kV Farakka-Kahalgaon -II	22.12.09	@@	24.12.09	@@	Relay replacement at Kahalgaon end
TALA HEP						
	400 kV Tala-Binaguri feeder-IV @	01.01.10	0000	31.01.10	2400	Replacement of failed LA
	400 kV Tala-Malbase @	01.01.10	0000	31.01.10	2400	Upgradation of cable end termination
	400 kV Tala-Binaguri feeder-II @	21.01.10	0000	31.01.10	2400	Upgradation of cable end termination
PGCIL						
	400 kV Farakka-Durgapur-I	12.01.10	ODB	12.01.10	ODB	Annual Maintenance
	400 kV Farakka-Durgapur-II	13.01.10	ODB	13.01.10	ODB	Annual Maintenance
	220 kV Budipadar-Korba D/C	24.12.09	ODB	24.12.09	ODB	Construction work of 2 nd 400 kV Raipur-Rourkella line
	160 MVA ICT at Baripada	22.12.09	ODB 0800	22.12.09	ODB 1700	Erection of 2 nd 160 MVA transformer
	400 kV Jamshedpur-Roukela-I	07.01.10	ODB	08.01.10	ODB	Annual Maintenance

50 MVAR Bus Reactor-I at Biharshariff	27.01.10	ODB	27.01.10	ODB	Annual Maintenance
220 kV Ranchi-Hatia-I LILO	29.01.10	ODB	29.01.10	ODB	Annual Maintenance
220 kV Patna-Khagaul line	06.01.10	ODB 1000	07.01.10	ODB 1500	Annual Maintenance
132 kV Arah-Dumraon	22.01.10	ODB 1000	22.01.10	ODB 1500	Annual Maintenance
132 kV Arah(PG)-Arah(BSEB)	23.01.10	ODB 1000	23.01.10	ODB 1500	Annual Maintenance
400 kV Rengali-Indravati S/C	04.01.10	ODB	04.01.10	ODB	Annual Maintenance
315 MVA ICT-1 at Baripada S/S	14.01.10	ODB	15.01.10	ODB	Annual Maintenance
100 MVA ICT-I at Birpara S/S	07.01.10	ODB 0800	08.01.10	ODB 1600	Annual Maintenance
50 MVA ICT at Birpara	11.01.10	ODB 0800	12.01.10		Annual Maintenance
220 kV Birpara-Salakati-I	18.01.10	ODB 0800	19.01.10	ODB 1600	Annual Maintenance
220 kV Birpara-Salakati-II	21.01.10	ODB 0800	22.01.10	ODB 1600	Annual Maintenance
315 MVA ICT-V at Malda S/s	12.01.10	ODB 0800	13.01.10	ODB 1600	Annual Maintenance
50 MVA ICT-IV at Malda S/s	14.01.10	ODB 0800	15.01.10	ODB 1600	Annual Maintenance
50 MVA ICT-II at Malda S/s	18.01.10	ODB 0800	19.01.10	ODB 1600	Annual Maintenance
50 MVA ICT-I at Malda S/s	20.01.10	ODB 0800	21.01.10	ODB 1600	Annual Maintenance
220 kV Malda-Dalkhola-I	22.01.10	ODB 0800	22.01.10	ODB 1600	Annual Maintenance
220 kV Malda-Dalkhola-II	28.01.10	ODB 0800	28.01.10	ODB 1600	Annual Maintenance
132 kV NJP-NBU I&II	29.01.10	ODB 0800	29.01.10	ODB 1600	Annual Maintenance

OCB: On Continuous basis, ODB: On Daily Basis

- * Duration of maintenance on last day will be on daily basis
- @ Subject to availability of two Tala-Binaguri/Malbase circuit
- @@ The lines shall be available after evening peak hours at least up to 0700 hrs of next day morning with either of Main-I and Main-II protection and other related protection such as back-up O/C, Earth fault relay at Kahalgaon end

Note: All shutdowns are cleared on tentative basis and concurrence from ERLDC needs to be taken before availing actual shutdown.