



Minutes
of
87th PCC Meeting

Date: 11.02.2020
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

EASTERN REGIONAL POWER COMMITTEE

MINUTES OF 87TH PROTECTION SUB-COMMITTEE MEETING HELD AT ERPC, KOLKATA ON 21.01.2020 (TUESDAY) AT 11:00 HOURS

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

PART – A

ITEM NO. A.1: Confirmation of minutes of 86th Protection sub-Committee Meeting held on 18th December, 2019 at ERPC, Kolkata.

The minutes of 86th Protection Sub-Committee meeting held on 18.12.19 circulated vide letter dated 26.12.2019.

Members may confirm the minutes of 86th PCC meeting.

Deliberation in the meeting

Members confirmed the minutes of 86th PCC meeting.

PART – B

ANALYSIS & DISCUSSION ON GRID INCIDENCES OCCURRED IN DECEMBER, 2019

ITEM NO. B.1: Disturbance at CTPS-A 220 kV/132 kV substation on 28.12.2019 at 05:26 Hrs.

At 05:25 Hrs, total power failure occurred at CTPS-A switch yard (both 220 kV and 132 KV). In addition to this, Unit # 8 at CTPS B plant has tripped at same time due to auxiliary system failure.

Since 132 kV Putki – Patherdih link was disconnected and it was being radially fed from CTPS A, total power failure has also occurred at this substation due to loss of incoming supply.

It is suspected that fault was at 220 kV bus at CTPS – A s/s. As Bus bar protection was not in service, 220 kV feeders and 220/132 kV ICTs at CTPS – A tripped from remote end in back up protection.

D/P relay at CTPS – B end of 220 kV CTPS A – CTPS – B tie circuit – 2 overreached for this fault (Z-I setting is 80% of line section) and tripped in Z-I.

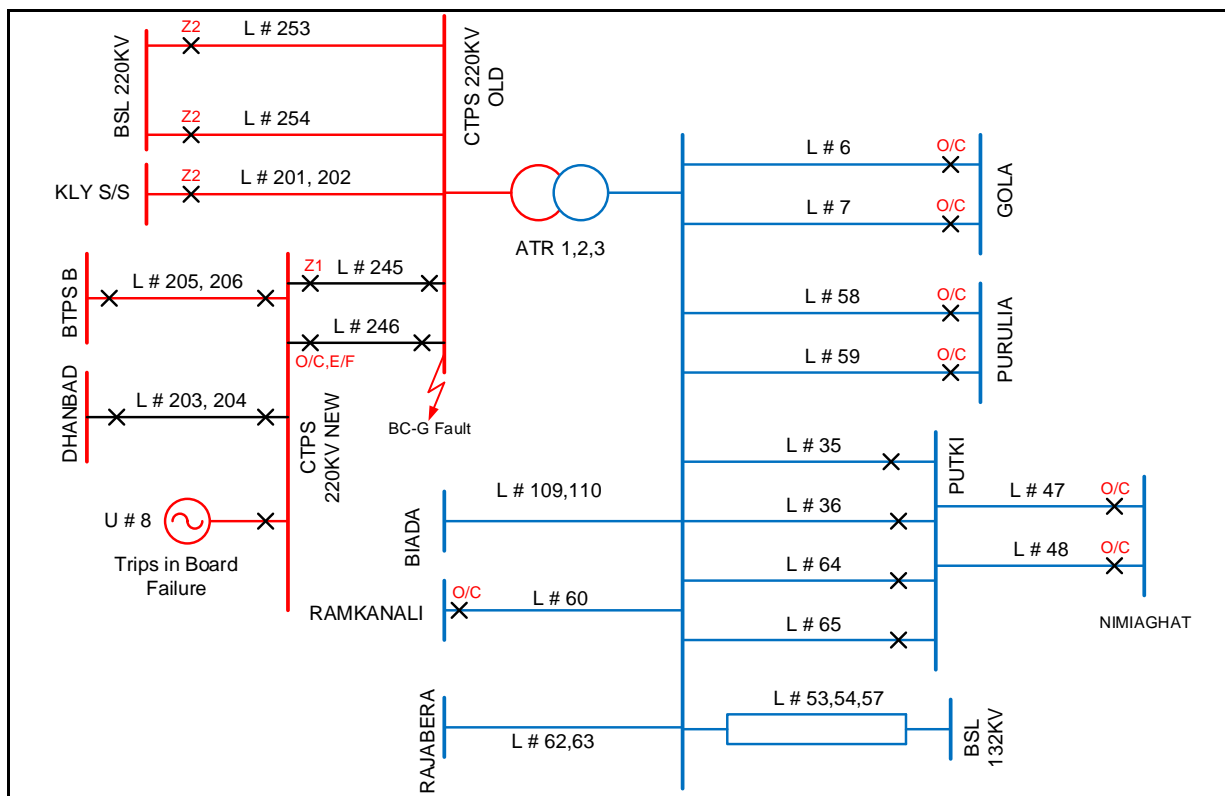
Generation Loss: 193 MW & Load Loss: 300 MW

Relay indications are as follows:

1. Line # 245 (CTPS new - CTPS old): Line differential protection (SEL311L Relay):- Z1, BCG at CTPS new 220 kV Sub Station. No Trip at CTPS 220 kV Old Sub Station.
2. L # 246 (CTPS new- CTPS old): Directional O/C and E/F at CTPS New 220 kV Sub Station. No Trip at CTPS 220 kV Old Sub Station.

3. L # 201, 202 (CTPS Old – Kalyaneshwary) & L # 245, 246 (CTPS Old – BSL Lines): Zone 2 at Kly & BSL Ends. No trip at CTPS Old End.
4. In CTPS 132 KV system there was no tripping pf any 132KV line from CTPS End. However CTPS Gola lines, CTPS Ramkanali, CTPS Purulia tripped in D/O/C Protection from remote ends. Putki Nimiaghat both lines tripped from Nimiaghat End through D/O/C Protection.

Name	Relay Indication at End 1	Relay Indication at End 2	Tripping time
220 kV CTPS-A-CTPS-B Tie Ckt-1	Did not trip	Y-B-N line differential protection, Z-I	240 ms
220 kV CTPS-A-CTPS-B Tie Ckt-2	Did not trip	Directional O/C & E/F	440 ms
220 kV CTPS-A-Kalyaneswari D/C	Did not trip	Y-B-N, Z-II	520 ms
132 kV Purulia-CTPS D/C	Did not trip	Y & B phase Directional O/C & E/F	Not available
132 kV CTPS – Gola D/C	Did not trip	Y & B phase Directional O/C & E/F	Not available
220/132 kV ICT – 2 at CTPS A	Tripped from both LV & HV in lock out relay		Not available



DVC may explain.

Deliberation in the meeting

DVC informed that BC-G fault had occurred at CTPS-A 220 kV bus. Bus bar protection was not in service due to DC grounding problem since 2018. Due to absence of primary protection, fault got cleared by line differential protection of 220 kV CTPS-A-CTPS-B Tie Ckt-1 in Zone-1 and 220 kV CTPS-A-CTPS-B Tie Ckt-2 tripped due to directional O/C & E/F. The fault got isolated from CTPS-B 220 kV side within 200 ms but during the same time, Unit #8 at CTPS-B plant got tripped due to under voltage.

After this, 220 kV Kalyaneswari & 220 kV BSL feeders got tripped in Zone-2 from Kalyaneswari & BSL end, respectively. In CTPS 132 KV system there was no tripping of any 132KV line from

CTPS End. However, CTPS Gola lines, CTPS Ramkanali, CTPS Purulia tripped in D/O/C Protection from remote ends. Putki Nimiaghat both lines tripped from Nimiaghat End through D/O/C Protection.

PCC observed that 220/132kV ATR protection system should isolate the fault to avoid tripping of 132kV lines from remote end. Zone 4 time settings of transmission lines might be reduced till the busbar protection is in service.

PCC advised DVC to take following corrective actions: -

- Retrofitting of 220 kV CTPS-A bus bar protection is to be done at the earliest
- 220/132kV ATR protection settings to be reviewed
- Zone settings of 220 kV CTPS-A-CTPS-B Tie Ckt-1 and 2 to be reviewed.
- Relay settings at Unit #8 of CTPS-B plant to be reviewed.

ITEM NO. B.2: Total power failure at Khizersarai on 19.12.2019 at 17:09 Hrs.

220 KV Biharsariff- Khizersarai S/C, 132 kV Bus at Lakhisarai & 132 KV Banka-Sultanganj D/c were out of service.

220 KV Gaya- Khizersarai I tripped at 17.09 hrs on B-N fault. 220KV Gaya-Khizersarai II tripped on overload interrupting power supply to Khizersarai S/S. In absence of feed from other sources like Biharshariff, Lakhisarai and Banka due to shut down, total power failure occurred at Khizersarai and its surrounding areas.

As per PMU data, fault was cleared within 100 ms.

Load Loss: 266 MW

Relay indications are as follows:

Name	Relay Indication at End 1	Relay Indication at End 2
220 kV Gaya- Khizersarai I	Yet to be received	B-N, 53.3 km
220 kV Gaya- Khizersarai II	Overload	Did not trip

Discrepancies observed:

- Reason for non-auto reclose operation of 220 kV Gaya – Khizersarai – I may be explained by BSPTCL/PGCIL.
- Power transfer to Khizersarai via 220 kV Gaya – Khizersarai D/C did not satisfy the N-1 contingency criteria. (Action being taken to ensure its N-1 reliability)
- Bihar SLDC may kindly explain why the other incoming feeders were not in service and Khizersarai was being radially fed from Gaya substation only.

BSPTCL and Powergrid may explain.

Deliberation in the meeting

BSPTCL informed that Biharsariff-Khizersarai Ckt-I was out due to voltage regulation and Biharsariff-Khizersarai Ckt-II was under breakdown before the disturbance due to induction from 132 kV Biharsariff-Sheikhpura line. Further, Bodhgaya-Khizersarai Ckt-I & II were not synchronised due to voltage regulation. Khizersarai had only source connectivity with Gaya and Lakhisarai load (through Nawada, Seikhupura, Jamalpur New) was also being radially fed from Khizersarai due to shutdown of Lakhisarai-PG main bus.

At 17:09 hrs, 220 kV Gaya- Khizersarai I tripped due to B-N fault and 220 kV Gaya-Khizersarai II

tripped on overload interrupting power supply to Khizersarai S/S.

PCC raised concerns about the operational planning as one circuit got overloaded due to outage of one line.

ERPC asked BSPTCL to discuss above operational issue with SLDC in the forthcoming OCC meeting.

ITEM NO. B.3: Tripping of 220 KV Gaya Sonenagar-II on 12.12.2019 at 11:18 Hrs.

Planned shutdown of 220 KV Gaya-Sonenagar-I was availed at 11:12 Hrs. At 11:18 Hrs 220 KV Gaya-Sonenagar-II tripped from Sonenagar on R-N fault leading to a load loss of 90 MW in downstream at Sonenagar and Japla (Traction loss- 20 MW at Japla). Auto-reclose was successful at Gaya.

As per PMU data at Gaya, fault was cleared within 100 ms.

Load Loss: 90 MW

Discrepancies observed:

- BSPTCL may explain reason for non-auto reclose of 220 kV Gaya – Sonenagar – II at Sonenagar end.

BSPTCL may explain.

Deliberation in the meeting

BSPTCL informed that 220 kV Gaya-Sonenagar-I was under Planned shutdown and at 11:18 Hrs 220 KV Gaya-Sonenagar-II tripped from Sonenagar on R-N fault.

BSPTCL further informed that there is single connectivity at Sonenagar and it may get another connectivity from Dehri in future.

BSPTCL intimated that they would review the A/R settings at the earliest.

ERPC asked BSPTCL to discuss the A/R issue with PRDC.

ITEM NO. B.4: Tripping of 220 KV Darbhanga (DMTCL) – Motipur I on 14.12.2019 at 02:50 Hrs.

220 KV Darbhanga (DMTCL)-Motipur II was kept open on voltage regulation from 14:35 hrs on 13.12.19.

At around 02:50 hrs on 14-12-19, 220 kV Darbhanga (DMTCL) – Motipur I and 220 kV MTPS – Motipur D/C tripped on E/F causing load loss of around 45 MW at Motipur / Sitamari / Musari area of BSPTCL system.

220 kV Darbhanga (DMTCL) – Motipur I was taken in to service at 03:25 hrs and tripped again on E/F at 03:37 hrs.

Load Loss: 45 MW

Relay indications are as follows:

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Time	Name	Relay Indication at End 1	Relay Indication at End 2
02:50 Hrs.	220 kV Motipur - Darbhanga (DMTCL)- 1	E/F, Fault duaration-178.6ms IR-108.10A, IY-332.8A, IB-77.64A	Yet to be received
	220 kV Motipur - MTPS D/C	Yet to be received	Yet to be received
03:37 Hrs.	220 kV Motipur - Darbhanga (DMTCL)- 1 (line was charged at 03:25 hrs.)	O/V in R & Y phase, Fault Duration-5.061sec, Ia-65.46A, Ib-96.75A, Ic-68.50A Van-138kV, Vbn-139.2kV, Vcn-137.9kV	Yet to be received

As per PMU data at Muzaffarpur, fault got cleared within 160 ms.

BSPTCL may explain.

Deliberation in the meeting

BSPTCL informed that at 02:50 hrs, 220 kV Darbhanga (DMTCL) – Motipur I had tripped due to earth fault. DMTCL informed that it got tripped in Zone-2 at DMTCL end. At the same time, 220 kV MTPS – Motipur D/C tripped due to earth fault. The fault was cleared within 200 ms.

Further, 220 kV Darbhanga (DMTCL) – Motipur I was taken into service at 03:25 hrs and tripped again at 03:37 hrs due to over voltage.

PCC advised BSPTCL to take following corrective actions: -

- *Digital signals configuration of relays at Motipur end need to be checked.*
- *Over voltage settings of relay at Motipur end need to be reviewed.*

ITEM NO. B.5: Tripping of 132 kV Dumka – Lalmatia D/C on 09.12.2019 at 11:35 hrs

At 10:26 Hrs, 220 kV FSTPP -Lalmatia S/C tripped from Lalmatia end only due to pole discrepancy (as reported). Consequently, 38 MW load loss occurred at 220/132 kV Lalmatia.

After this, Lalmatia substation availed power from Dumka through 132 kV Dumka-Lalmatia D/C at 11:25 Hrs. However, 132 kV Dumka-Lalmatia D/C got tripped at 11:35 Hrs on Y-B-N fault, Z-II protection (Iy = 0.94 kA & Ib = 1.25 kA) from Dumka end resulting in again the load loss at 220/132 kV Lalmatia substation.

No fault was observed during patrolling. In Farakka PMU data, no fault was captured.

Load Loss: 38 MW

Relay indications are as follows:

Name	Relay Indication at End 1	Relay Indication at End 2
220 kV FSTPP -Lalmatia S/C	Yet to be received	Yet to be received
132 kV Dumka-Lalmatia D/C	Distance Zone 2, Y-B-N fault, Fault loc – 90.1 KM, Ir-0.04 kA, Iy- 0.94 kA, Ib- 1.25 kA	Did not trip

JUSNL may explain.

Deliberation in the meeting

JUSNL informed that at 10:26 Hrs, 220 kV FSTPP - Lalmatia S/C tripped from Lalmatia end only due to pole discrepancy.

After this, 132 kV Dumka - Lalmatia D/C got tripped at 11:35 Hrs on Y-B-N fault, Z-II protection from Dumka end.

PCC advised JUSNL to collect DRs and discuss above issue with the SLDC and send the details to ERPC/ERLDC.

PCC advised NTPC to share the DR at Lalmatia end.

ITEM NO. B.6: CT failure of 220 kV Gokarna – Sadaipur – 2 at Gokarna on 06.12.2019 at 10:58 Hrs.

220 kV Sagardighi – Gokarna - I was under planned shutdown and 220 kV bus bar protection at Gokarna was kept out of service before the incident.

At 10:58 hrs B phase CT of 220 kV Gokarna - Sadaipur - II failed at Gokarna end. This resulted bus into fault at Gokarna which led to tripping of all lines connected to 220 kV Bus 2 at Gokarna end. 400 kV Farakka Gokarna S/C also tripped at same time sensing the same fault in Z-III. Line was in charged condition from Gokarna end.

Though the fault was cleared from Sadaipur in Z-II, breaker did not open at Gokarna end in absence of Bus bar protection.

To clear the fault all 220 kV feeders, bus coupler, 400/220 kV ICT and 220/132 kV ICTs at Gokarna tripped from remote ends on back up protection as bus bar protection was not available at Gokarna.

220/132 kV ICT 4 & 2 at Gokarna tripped on E/F and O/C from 132 kV side. 220 kV Gokarna - Rejinagar D/C tripped from Rejinagar end in Z-II and from Gokarna end on DT receipt. 220kV B/C at Gokarna tripped on O/C protection. 220 kV Gokarna – Sagardighi D/C and 220 kV Gokarna – Sadaipur – 1 tripped from Sagardighi end on Z-II protection. 400/220 kV ICT – II at Gokarna tripped from 400 kV side on O/C protection.

As per PMU, fault clearance was around 1 second (Z-III time).

No Generation & Load Loss.

Relay indications are as follows:

Name	Relay Indication at End 1	Relay Indication at End 2	Approx. fault duration
220 kV Gokarna – Sadaipur – 2 (Fault was at this line at Gokarna end)	Did not trip	Y-B, Z-II, 83km (400 ms)	Did not clear from Gokarna
220 kV Gokarna – Sadaipur – 1	Did not trip	Y-B, Z-II, 83km	400 ms
220 kV Gokarna – New Sagardighi D/C	Did not trip	B-N, Z-II, 37 km	400 ms
220 kV B/C at Gokarna	O/C & E/F		Not available
220 kV Gokarna – Rejinagar	DT received	B-N, Z-II, 43 km	400 ms

D/C			
400 kV Gokarna - Farakka S/C	Did not trip	B-N, Z-III, 288.3 km	1000 ms
400/220 kV ICT - 2	O/C , E/F from 132 kV side		1300 ms
220/132 kV ICT -2 & 4	O/C , E/F from 132 kV side		930 ms

WBSETCL may explain.

Deliberation in the meeting

*WBSETCL gave a detailed presentation which was given at **Annexure-B6**.*

WBSETCL informed that 220 kV Sagardighi – Gokarna - I was under planned shutdown and 220 kV bus bar protection at Gokarna was out of service. At 10:58 hrs B phase CT of 220 kV Gokarna - Sadaipur - II failed at Gokarna end. This resulted into bus fault at Gokarna.

To clear the fault, all 220 kV feeders tripped from remote ends within 400 ms, Gokarna bus coupler got tripped at 700 ms, 220/132 kV ICTs at Gokarna tripped from remote ends within 930 ms, 400 kV Farakka – Gokarna line tripped from Farakka end at 1000 ms and 400/220 kV ICT at Gokarna tripped at 1300 ms from the time of fault.

WBSETCL informed that bus bar protection at 220kV Gokarna would be in service within 6 months.

PCC observed that 400/220kV ICT should clear the fault to avoid the tripping of 400kV lines on zone 3.

PCC suggested that Directional E/F with 800 ms delay may be incorporated at 400/220kV ICT to avoid tripping of 400kV lines on zone 3.

PCC advised WBSETCL to review the 400/220kV ICT protection settings and carry out the protection coordination between 220kV and 400kV system to avoid uncoordinated tripping.

ITEM NO. B.7: Disturbance at Liluah substation on 27.11.2019 at 02:36 Hrs.

At 02:36 Hrs, 132 KV BUS PT at Liluah S/s burst resulting tripping of 132 KV Liluah-Howrah Q/C.

At the time of incident, CESC system was synchronized to rest of the grid at Howrah point (132 KV Southern-Howrah, 132 KV Southern-Botanical-Howrah D/c) which got islanded as synchronization relay at Southern operated to disconnect CESC system from rest of the grid. CESC started running in island mode for 9 minutes.

At 02:45 Hrs, when re-synchronization attempt was taken at Howrah, 2 running Units (U#1, U#3-264 MW generation) at BudgeBudge tripped, thereby around 260 MW load loss occurred in CESC area.

Generation Loss: 264 MW & Load Loss: 260 MW

In 86th PCC meeting, WBSETCL informed that bus fault at 132kV Liluah bus was occurred due to failure of 132 KV BUS PT at Liluah S/s. WBSETCL added that 132 kV lines from Howrah and Rishra got tripped on zone 2 after 350 ms.

From the report submitted by CESC, PCC observed that SPS at Howrah was operated within 300 ms and isolated the CESC system from rest of the grid.

ERLDC informed that sequence of events for this disturbance was not captured in ERLDC SCADA system.

After detailed deliberation, PCC decided to discuss the disturbance in next PCC meeting on following observations:

1. Isolation of CESC system might not be required in this case and proper time coordination between WBSETCL protection system and CESC islanding scheme is required to be deliberated in detail to avoid such unwanted system separation.
2. Rough synchronisation was observed at Howrah during resynchronisation attempt at 02:45 hrs

CESSC and WBSETCL may explain.

Deliberation in the meeting

CESSC informed that they have kept the settings of their islanding scheme based on system studies.

After detailed deliberation, PCC advised WBSETCL to reduce their Zone-2 time setting to 250 ms for the time coordination between line tripping and CESC islanding.

PCC also advised CESC to study whether they can increase the SPS time setting from 300 ms for better safety margin between time settings of WBSETCL protection system and CESC islanding scheme.

Regarding synchronisation, CESC informed that there was casing contact problem in their check synchronising relay. They have replaced the casing of relay and the same is working fine now. CESC intimated that they are planning to replace check synchronising relay with numerical relay. CESC informed that they had 264 MW generation loss and 144 MW load due to disturbance.

WBSETCL informed that bus differential protection at Liluah substation would be implemented within six months.

ITEM NO. B.8: Disturbance at Koderma Generating station on 26.11.2019 at 05:56 Hrs.

At 05:56 Hrs, R phase shunt capacitor of GCB burst while synchronizing U#2 at Koderma, which is connected through Bus#1.

Subsequently, all elements connected to bus I tripped and bus I became dead.

No Generation/Load Loss.

DVC may explain.

Deliberation in the meeting

DVC informed that at 05:56 hrs, during synchronization of Unit #2 at Koderma, when generator terminal voltage raised up to 21 kV, sudden heavy sound and flash observed in grading capacitor of R-phase GT#2 400 kV CB and consequently main bus#1 tripped. After this, associated main and tie bays (Gaya#1, BSF#1, Bokaro#1, ST#1, Bus Reactor#2) got tripped.

Further, DVC informed that bus bar protection had operated but maloperation of tie breaker has tripped all other bays also due to some logic problem. DVC intimated they have resolved the logic problem and the same is working fine now.

ITEM NO. B.9: Tripping Incidences in the month of December, 2019.

Other tripping incidences occurred in the month of December, 2019 which needs explanation
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from constituents of either of the end is given in Annexure.

In 36th TCC, all the constituents were advised to use the PDMS on-line portal for uploading the single line tripping details along with DR (comtrade files), EL and other relevant files for all trippings of August 2017 onwards. Otherwise, it will be considered as violation of compliance of clause 5.2(r) & 5.9 of IEGC.

In 74th PCC, all the constituents were requested to submit the disturbance report along with DR through the new version of on-line portal which was implemented from 01st Jan. 2019.

Members may discuss.

Deliberation in the meeting

*Members explained the tripping incidences. Updated status is enclosed at **Annexure-B9**.*

PART- C:: OTHER ITEMS

ITEM NO. C.1: FOLLOW-UP OF TRIPPING/AUTO-RECLOSE INCIDENTS IN THE MONTHS OF OCTOBER, 2019 AND NOVEMBER, 2019

The list of tripping/auto-reclose incidents in the month of October, 2019 and November, 2019 are given at Annexure, where discrepancies has been observed in protection system/DR configuration.

Members may update the latest status.

Deliberation in the meeting

*Members updated the latest status. Updated status is enclosed at **Annexure-C1**.*

ITEM NO. C.2: FOLLOW-UP OF DECISIONS OF THE PREVIOUS PROTECTION SUB-COMMITTEE MEETING(S)

The decisions of previous PCC Meetings are given at Annexure.

In 73rd PCC, it was observed that latest status on the implementation of the previous PCC recommendations were not updated by the constituents regularly. All the constituents were advised to update the latest status of the recommendations as per the list given in Annexure.

Members may update the latest status.

Deliberation in the meeting

*Members updated the latest status. Updated status is enclosed at **Annexure-C2**.*

ITEM NO. C.3: List of works carried out by PRDC Pvt. Ltd. during the period of November, 2018 to October, 2019.

The Protection Database project has been implemented by PRDC and declared "Go Live" on 31st October, 2017. In continuation to above, PRDC submitted a report for verification of works carried

out during the period of November, 2018 to October, 2019.

Members may discuss.

Deliberation in the meeting

*PRDC gave a detailed presentation which was given at **Annexure-C3.1**.*

*List of transmission elements newly commissioned in Eastern Region in various OCC meetings during the period from October, 2018 to September, 2019 and list of substations visited by PRDC during the period November, 2018 to October, 2019 was given at **Annexure-C3.2**.*

ITEM NO. C.4: Schedule of training program to be conducted by PRDC

PRDC, as per the AMC, is going to conduct 2nd training programme on PDMS and PSCT in state utility premises of Eastern Region. The tentative schedule is given below:

SL NO.	State	Date	Training
1	West Bengal(Siliguri)	04.02.2019-05.02.2019	On PDMS
	West Bengal(Durgapur)	08.02.2019-09.02.2019	On PDMS
2	Bihar	08.04.2019-09.04.2019	On PDMS
		10.04.2019-11.04.2019	On PSCT
3	Sikkim	11.06.2019-12.06.2019	Relay Setting analysis and Protection Co-ordination
4	Odisha	22.07.2019-23.07.2019	On PDMS
5	Jharkhand	25.08.2019-26.08.2019	On PDMS
6	For all state	27.01.2020-29.01.2020	On PSCT

PRDC informed that the training programme on PDMS has already been completed in West Bengal, Bihar, Sikkim & Odisha as per the schedule.

Members may update.

Deliberation in the meeting

Members noted.

ITEM NO. C.5: Status of Third Party Protection Audit

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

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19

NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	49	72.06
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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

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

In 77th PCC, BSPTCL has submitted the updated status.

In 79th & 80th PCC, BSPTCL was advised to submit the details of the compliance report.

BSPTCL may update.

Deliberation in the meeting

Members noted.

ITEM NO. C.6: Non-commissioning of PLCC / OPGW and non-implementation of carrier aided tripping in 220kV and above lines.

According to CEA technical standard for construction of electric plants and electric lines -Clause 43(4) (c), transmission line of 220 KV and above should have single-phase auto-reclosing facility for improving the availability of the lines. However, from the tripping details attached June-August, 2016 it is evident that the some of 220kV above Inter & Intra-Regional lines do not having auto-reclose facility either at one end or at both ends. Out of these for some of the lines even PLCC/OPGW is not yet installed and carrier aided protection including Autorecloser facility is not yet implemented. Based on the trippings of June- August, 2016 and PMU analysis a list of such lines has been prepared and as given below:

List of line where auto reclose facility is not available(Information based on PMU data analysis)							
S. No	Transmission Lines name	Date of Tripping	Reason of Tripping	Owner Detail		Present Status	
				End-1	End-2	OPGW/P LCC Link available	AR facility functional
13	<u>220KV BUDIPADAR-KORBA-II</u>	23.06.16	Y-N FAULT	OPTCL	CSEB	PLCC available	will be activated in consultation with Korba
17	<u>220 KV TSTPP-RENGALI</u>	17.07.16	EARTH FAULT	NTPC	OPTCL		by March 2018
18	<u>220KV BUDIPADAR-RAIGARH</u>	21.07.16	EARTH FAULT	OPTCL	PGCIL	PLCC defective	
20	<u>220 KV FARAKKA-LALMATIA</u>	03.08.16	B-N FAULT .	NTPC	JUNSL	Yes	Old Relay and not functional.

							7-8 months required for auto re-close relay procurement.
23	<u>220 KV MUZAFFARPUR - HAZIPUR - II</u>	10.08.16	B-N FAULT	PGCIL	BSPTCL		Voice established. For carrier required shutdown
24	<u>220 KV ROURKELA - TARKERA-II</u>	11.08.16	B-N FAULT	PGCIL	OPTCL	OPGW available	Expected to install protection coupler by Jan 17
27	<u>220 KV BIHARSARIF-TENUGHAT</u>	07.09.16	B-N FAULT	BSPTCL	TVNL		
33	220KV Jamshedpur-Jindal-SC						

34th TCC advised all the respective members to update the above list along with the last tripping status in next PCC meeting.

TCC further advised all the constituents to give the latest status of PLCC of other 220kV and above lines under respective control area.

OPTCL:

1. 220kV Rengali(PG)-Rengali S/Y (Proposal for Commn. in OPGW is pending): *PSDF appraisal committee accepted the proposal*
2. 220kV Indravati(PG)-Indravati(PH) (Proposal for Commn. in OPGW pending): *PSDF appraisal committee accepted the proposal*
3. 132kV Baripada(PG)-Baripada (Tendering in Progress for OPGW): *Contract awarded*
4. 132kV Baripada(PG)-Rairangpur (Tendering in Progress for OPGW): *Contract awarded*

BSPTCL:

Sl No.	Lines	Status
1	220 kV Purnea(PG)-Madhepura	Protection through PLCC is working properly
2	220 kV Biharsharif-BTPS new	Commissioning of PLCC is under progress.
3	220 kV BTPS new- Begusarai	Commissioning of PLCC is under progress.
4	220 kV Biharshariff-Bodhgaya line LILO at Khizersarai	OPGW is present. Protection is done through DPC.
5	220kV MTPS-Motiari line	OPGW is installed.
6	220KV Madhepura-New Purnea D/C	Protection through PLCC is working properly
7	220KV Muzaffarpur-Hajipur D/C line	Protection through PLCC is working properly
8	220KV Patna-Khagaul-SC	PLCC Panel working properly.
9	220 kV DMTCL(Darbhanga)-Laukhi Circuit-I	PLCC Panel working properly
10	220 kV Tenughat-Biharsharif S/C	PLCC to be commissioned
11	220 kV Gaya-Sonenagar New circuit-I	Communication through OPGW
12	220 kV Pusauli-Dehri S/C	PLCC not working
13	220 kV Begusarai-Purnea(PG) D/C	PLCC working properly
14	220 kV DMTCL-Motipur ckt-II	PLCC to be commissioned.
15	220 kV Dehri- Gaya D/C	PLCC working properly
16	220 kV Kishanganj(PG)-Kishanganj(B)-II	PLCC working properly

In 79th PCC, BSPTCL submitted PLCC status of some of the lines. The details have been updated in above table.

In 80th PCC meeting, BSPTCL was advised to rectify the PLCC & Autoreclose issues in

coordination with their communication wing.

Members may update.

Deliberation in the meeting

Members updated the latest status as given below: -

List of line where auto reclose facility is not available(Information based on PMU data analysis)							
S. No	Transmission Lines name	Date of Tripping	Reason of Tripping	Owner Detail		Present Status	
				End-1	End-2	OPGW/W LCC Link available	AR facility functional
13	<u>220KV BUDIPADAR-KORBA-II</u>	23.06.16	Y-N FAULT	OPTCL	CSEB	PLCC not available	will be activated in consultation with Korba
17	<u>220 KV TSTPP-RENGALI</u>	17.07.16	EARTH FAULT	NTPC	OPTCL	OPGW replaced PLCC.	by March 2018
18	<u>220KV BUDIPADAR-RAIGARH</u>	21.07.16	EARTH FAULT	OPTCL	PGCIL	PLCC defective.	To be commissioned be Chhatisgarh.
20	<u>220 KV FARAKKA-LALMATIA</u>	03.08.16	B-N FAULT .	NTPC	JUNSL	Yes	Old Relay and not functional. 7-8 months required for auto re-close relay procurement.
23	<u>220 KV MUZAFFARPUR - HAZIPUR - II</u>	10.08.16	B-N FAULT	PGCIL	BSPTCL	PLCC commissioned.	Voice established. For carrier required shutdown
24	<u>220 KV ROURKELA - TARKERA-II</u>	11.08.16	B-N FAULT	PGCIL	OPTCL	OPGW available	DTPC installed. A/R to be commissioned.
27	<u>220 KV BIHARSARIF-TENUGHAT</u>	07.09.16	B-N FAULT	BSPTCL	TVNL		
33	220KV Jamshedpur-Jindal-SC						

OPTCL:

1. 220kV Rengali(PG)-Rengali S/Y : *Contract awarded*
2. 220kV Indravati(PG)-Indravati(PH) : *Contract awarded*
3. 132kV Baripada(PG)-Baripada : *OPGW completed*
4. 132kV Baripada(PG)-Rairangpur : *OPGW completed*

BSPTCL:

SI No.	Lines	Status
1	220 kV Purnea(PG)-Madhepura	Protection through PLCC is working properly
2	220 kV Biharsharif-BTPS new	BHEL would complete this work
3	220 kV BTPS new- Begusarai	BHEL would complete this work
4	220 kV Biharshariff-Bodhgaya line LILO	OPGW is present. Protection is done through

	<i>at Khizersarai</i>	<i>DPC.</i>
5	<i>132 kV MTPS-Motiari line</i>	<i>OPGW is installed.</i>
6	<i>220KV Madhepura-New Purnea D/C</i>	<i>Protection through PLCC is working properly</i>
7	<i>220KV Muzaffarpur-Hajipur D/C line</i>	<i>Protection through PLCC is working properly</i>
8	<i>220KV Patna-Khagaul-SC</i>	<i>PLCC Panel working properly.</i>
9	<i>220 kV DMTCL(Darbhanga)-Laukhi Circuit-I</i>	<i>PLCC Panel working properly</i>
10	<i>220 kV Tenughat-Biharsharif S/C</i>	<i>PLCC to be commissioned</i>
11	<i>220 kV Gaya-Sonenagar New circuit-I</i>	<i>Communication through OPGW</i>
12	<i>220 kV Pusauli-Dehri S/C</i>	<i>PLCC not working. OPGW commissioned at Dehri end.</i>
13	<i>220 kV Begusarai-Purnea(PG) D/C</i>	<i>PLCC working properly</i>
14	<i>220 kV DMTCL-Motipur ckt-II</i>	<i>PLCC to be commissioned.</i>
15	<i>220 kV Dehri- Gaya D/C</i>	<i>PLCC working properly</i>
16	<i>220 kV Kishanganj(PG)-Kishanganj(B)-II</i>	<i>PLCC working properly</i>

Meeting ended with vote of thanks to the chair

Annexure-A

Participants in 87th PROTECTION COORDINATION SUB-COMMITTEE (PCC) Meeting of ERPC

Venue: ERPC Conference Hall, Kolkata

Time: 11:00 hrs

Date: 21.01.2020 (Tuesday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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5	CHANDAN KUMAR	Mgr, POSOCO	9869251460 Chandan	chandan@posoco.in.	
6	T-R. Mohapatra	CM, POSOCO	9433041873	trmohapatra@ posoco.in	T-R
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8	Shivam Asati	AD-II, ERPC	8253035332	shivamasati786@gmail.com	Shivam Asati
9	PRINCE KUMAR	AGE/CRITL BSPTCL	9570945608	princebce@gmail.com	Prince Kumar
10	DEEPAK KUMAR	EEE/CRITL/ BSPTCL	7763817776	DKUMAR27107@GMAIL. COM	Deepak Kumar
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14	GAUTAM NAYAK	ACE, WBSETCL	9434905644	gtnayak92@gmail.com	Gautam Nayak 21/1/20
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16	KRISHNENDU SARKAR	Mgr(OS) WBPDCL	8336508840	K.SARKAR01@wbpdcl.co.in	K. Sarkar 21/1/20
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20	M. Z. Huda	Limt (OS) % CEM (OSM) OPTCL	9438907491	ele.mzhuda@optcl.co in	M. Z. Huda

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

Participants in 87th PROTECTION COORDINATION SUB-COMMITTEE (PCC) Meeting of ERPC

Venue: ERPC Conference Hall, Kolkata

Time: 11:00 hrs

Date: 21.01.2020 (Tuesday)

Sl No	Name	Designation/ Organization	Contact Number	Email	Signature
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32	Madhab Muechejee	SE, PRDC	798059447	madhab.muechejee @ brdcinfotech.com	
33	Sanjit Guhathakurta	SE, PRDC	8337034887	Sanjit.g @ brdcinfotech .com	
34	RAJDEEP BHATTACHARJEE	RE, BSSPHCL	9830380689	rekolbsphcl@gmail.com	
35	S. M. Jha.	Consultant, ERPC	6289127726	erpcjha@yahoo.co.in	
36	B Sarkhel,	Consultant ERPC			
37					
38					
39					
40					

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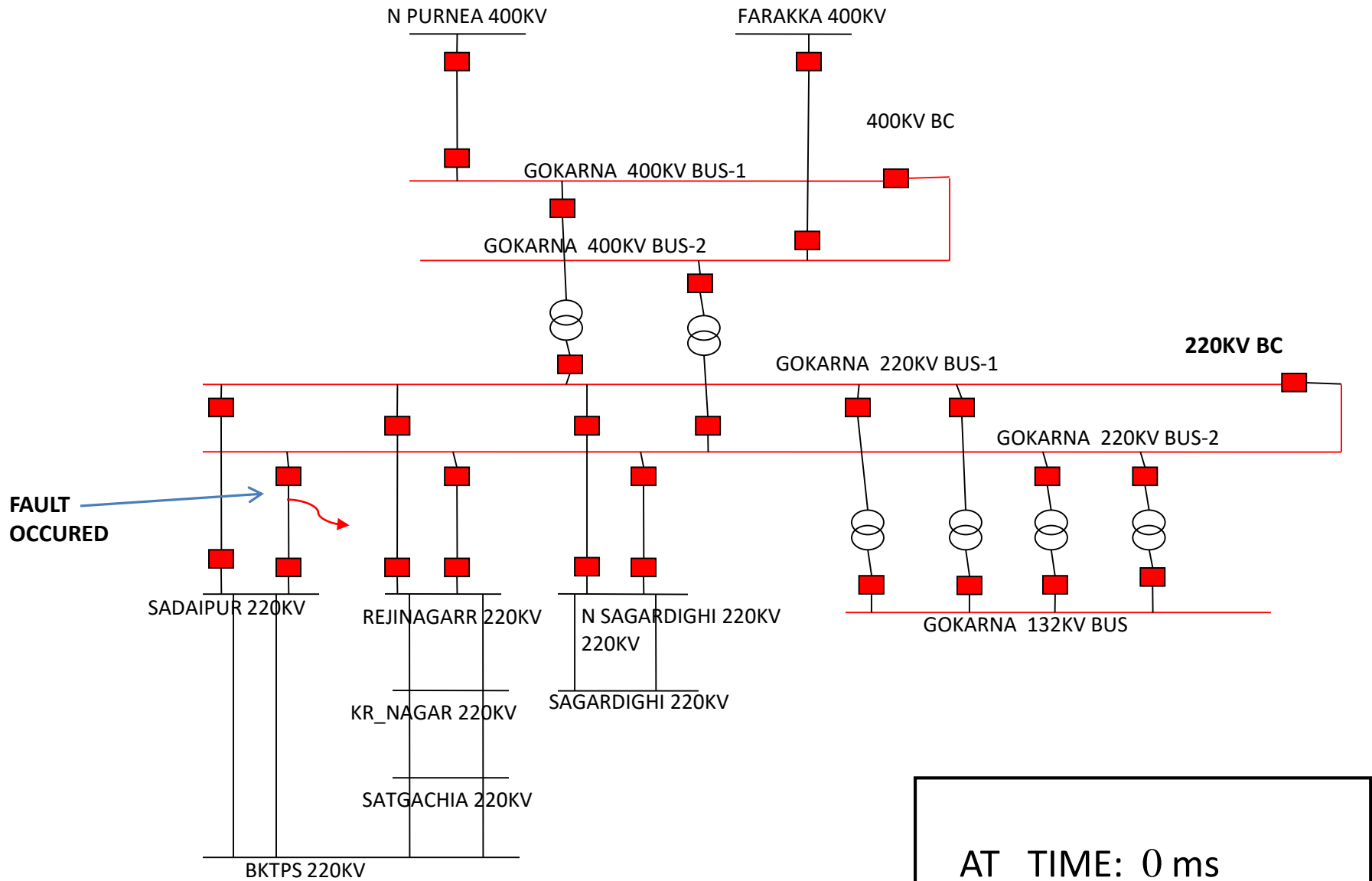
**GOKARNA 220KV
SUBSTATION**

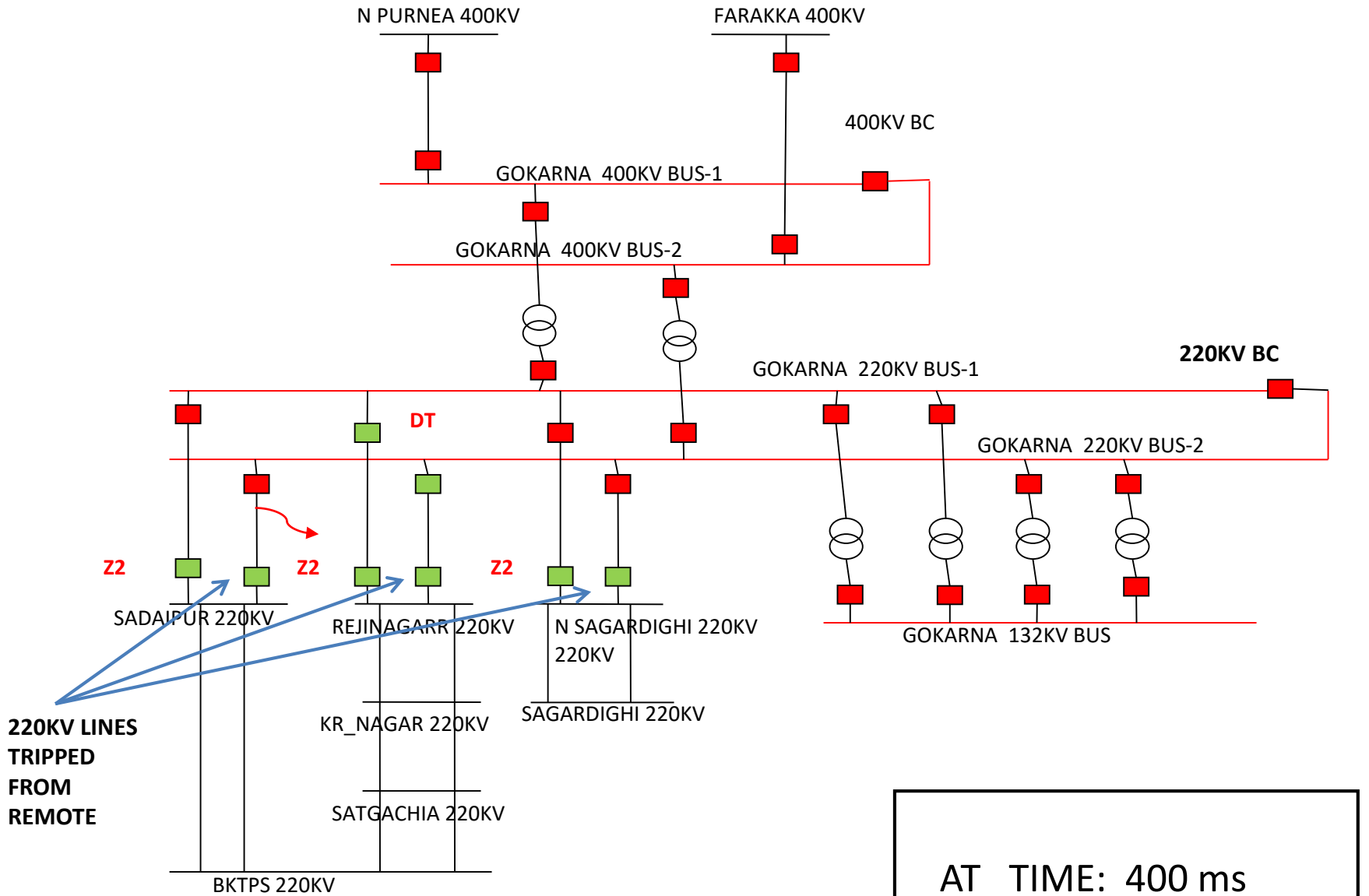
DATE: 06 DECEMBER 2019

TIME: 10 : 58 HRS

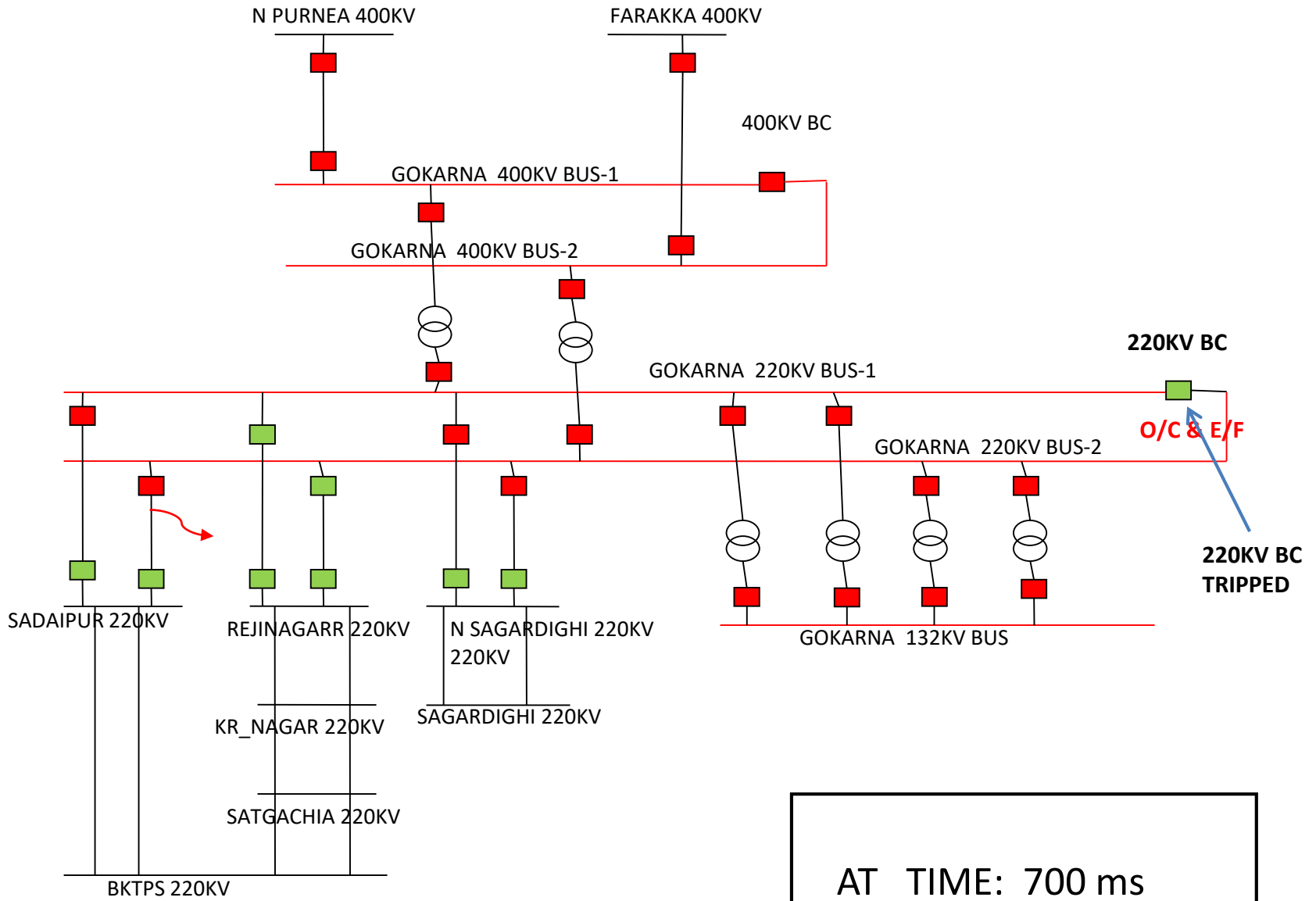
FAULT AT:

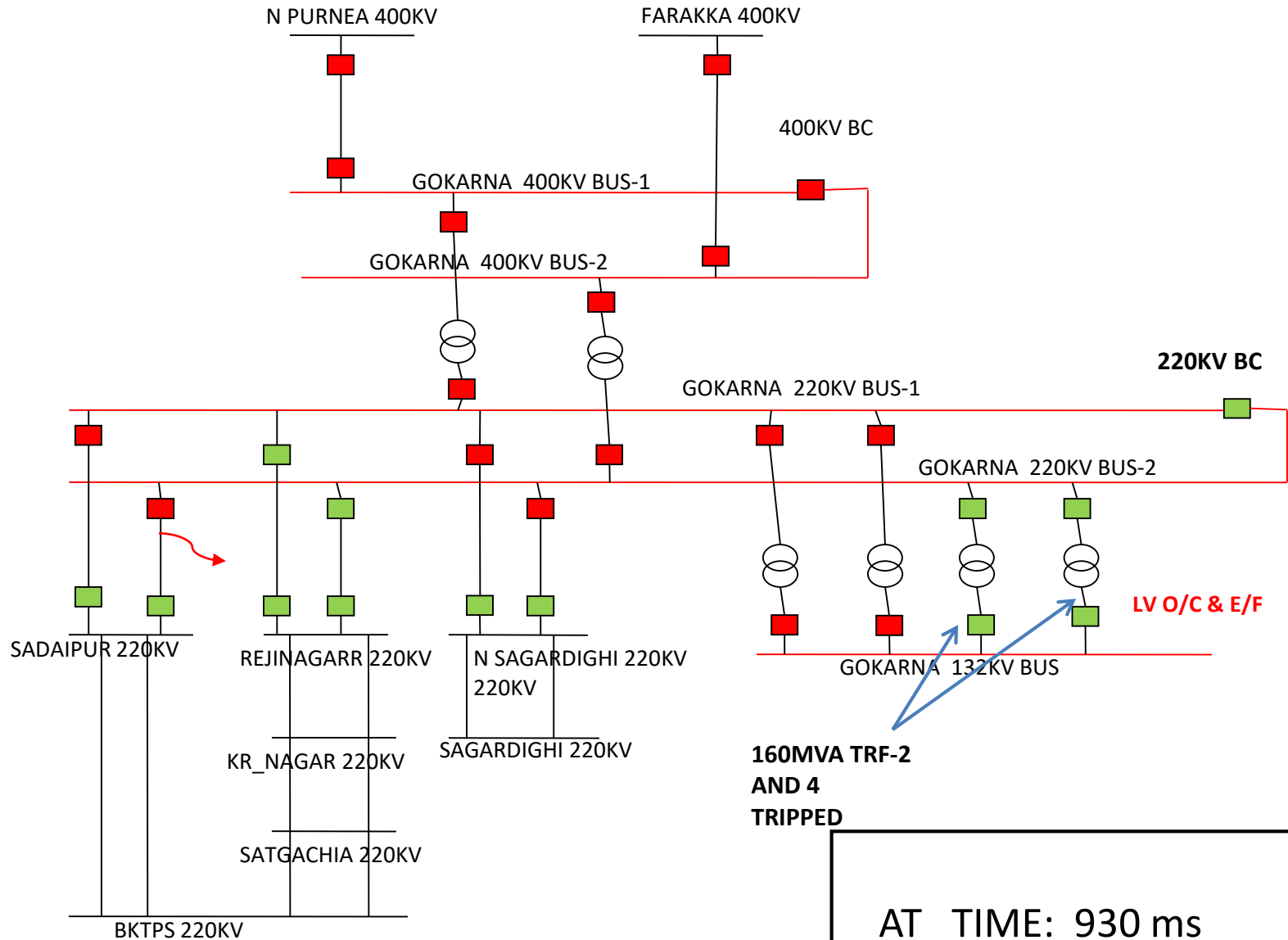
220KV BLUE PHASE CT I.R.O.
220KV GOKARNA- SADAIPUR
CIRCUIT-2

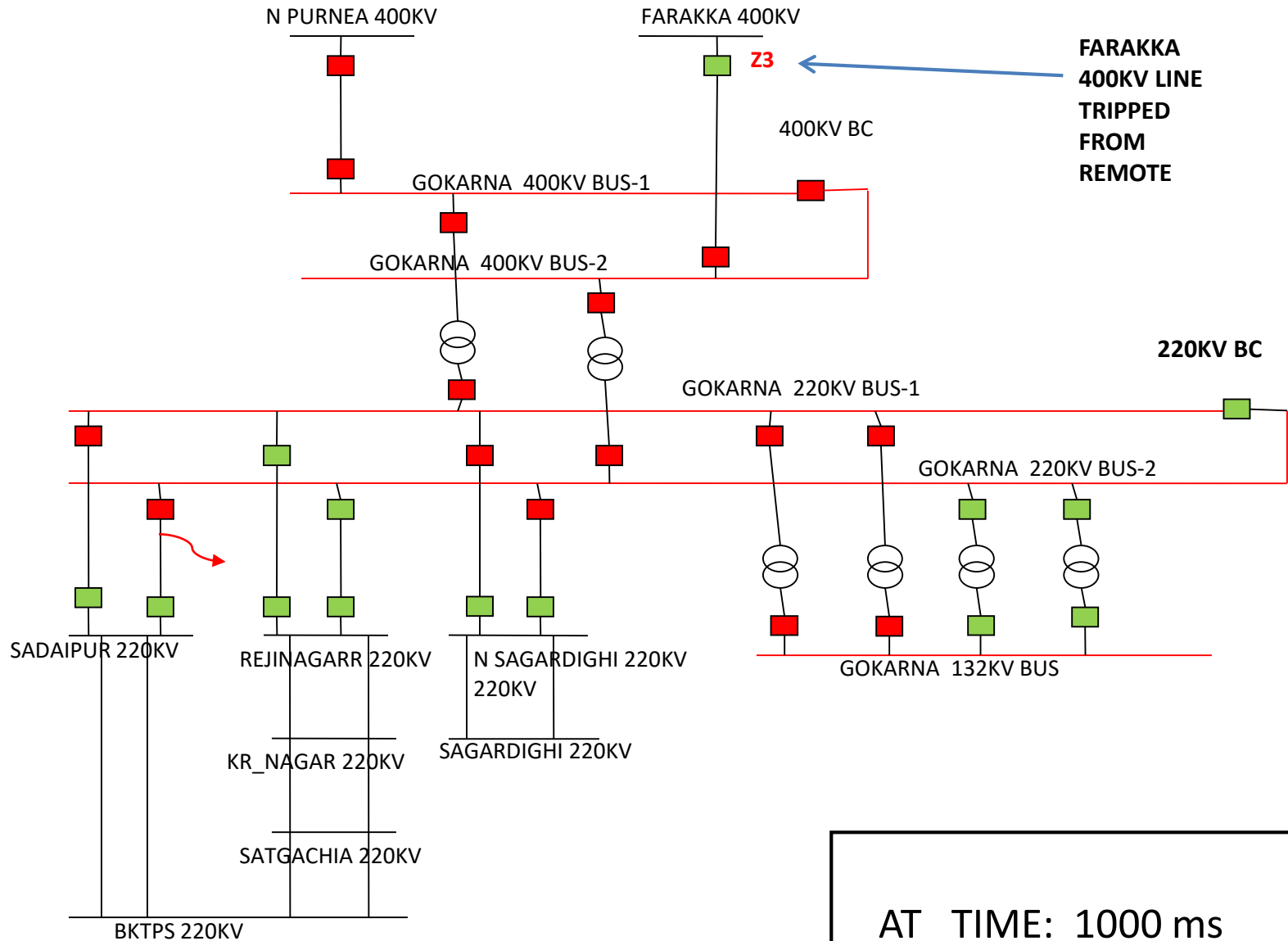


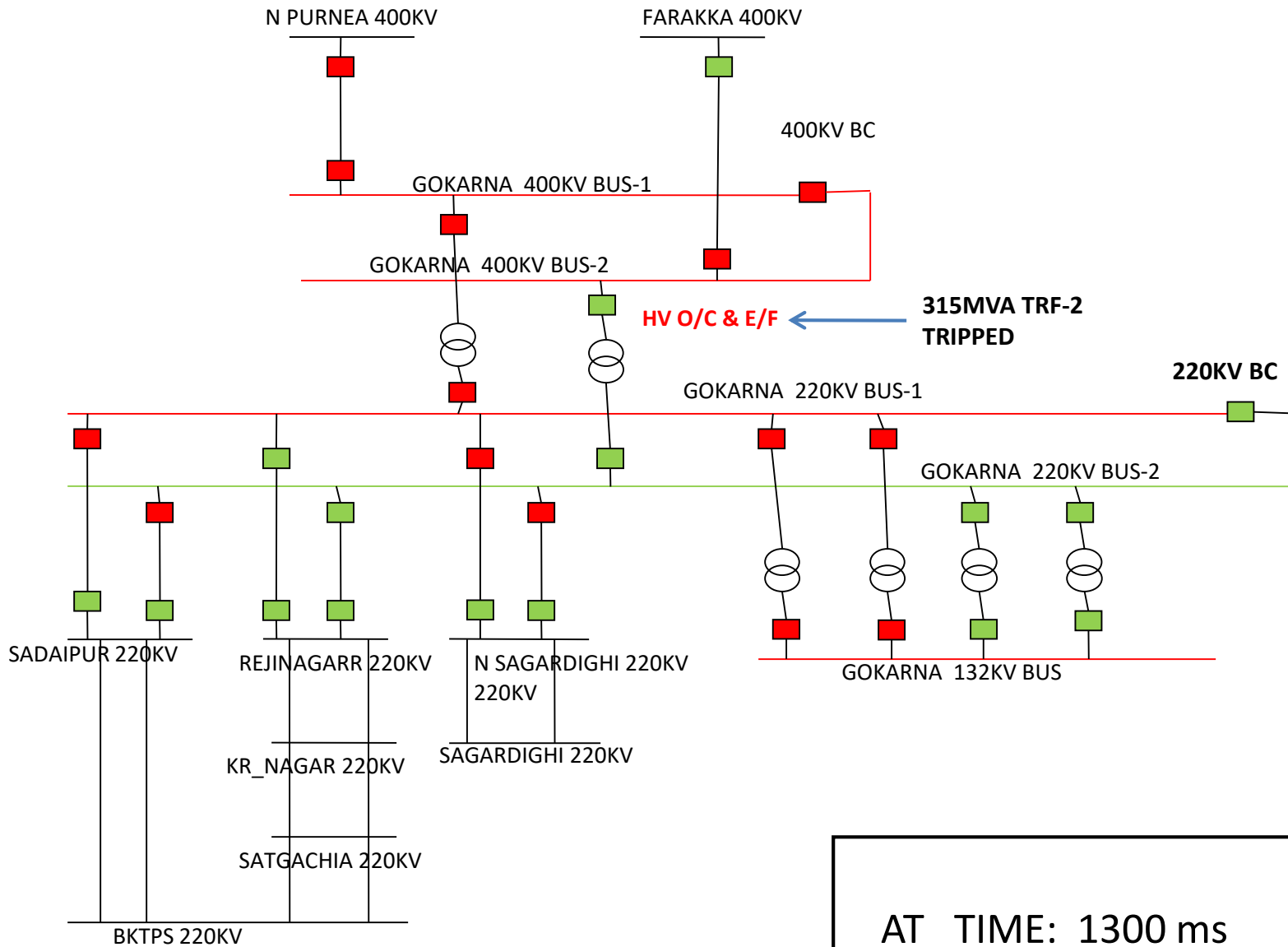


AT TIME: 400 ms









AT TIME: 1300 ms

List of important transmission lines in ER which tripped in December, 2019										Annexure-B9
S.NO	LINE NAME	TRIP DATE	TRIP TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	Primary observation/ Remarks	PCC Comments
1	400KV-JEERAT-SAGARDIGHI-1	01-12-2019	13:30	Y_N Fault, 91 KM		Y-N Fault	YES	NO	A/R not operated either one or both end	A/R successful, After 10 sec O/V at Jeerat
2	400KV-ANGUL-TSTPP-1	04-12-2019	13:55	B-N , 34KM ,10.37KA	B-N, 28KM	B-N Fault	YES	NO	A/R Timing to be corrected	Powergrid will coordinate with Talcher NTPC
3	220KV-CHANDIL-STPS(WBSEB)-1	15-12-2019	03:17	Y-N,5.03 KA,Z2 ,A/R successful	Y-N, Z2, 89 KM , ly 1.5 KA	Y-N Fault	YES	NO	A/R not operated at STPS end	Z2 from STPS end
4	220KV-NEW MELLI-TASHIDING-1	17-12-2019	14:17	NO TRIPPING	B-N,10.83 KM,1.79 KA	B-N Fault	only EL	NO	A/R not operated at Tashiding end	Tashiding were not present , Communication will be sent to them
5	220KV-NEW MELLI-JORETHANG-1	18-12-2019	14:25	Y-N,3.405KM,3.92 KA,A/R SUCCESSFUL		Y-N Fault	only EL	NO	A/R not operated at Jorethang end	Jorethang were not present , Communication will be sent to them
6	400KV-PATNA-BALIA-4	26-12-2019	12:02	R-N , 62.16 Km	AR successful	R-N Fault	YES	NO	A/R not operated at Patna end	Ph-Ph fault sensed due to Cable Fault, Rectified
7	400KV-KHSTPP-LAKHISARAI-1	09-12-2019	10:55	DT received		DT received at Kahalgaon	YES	YES	No fault observed in PMU	Auxiliary contact issue at Lakshisarai, Resolved
8	220KV-RAJARHAT-JEERAT-2	14-12-2019	15:32	No tripping	Master trip relay at Jeerat	Master trip relay at Jeerat	NO	NO	No fault observed in PMU	Issue resolved at Jeerat
9	400KV-KISHANGANJ-TEESTA-III-1	17-12-2019	11:34	DT received	Tripped on O/v while performing LBB test of Bus II	DT received at Kishanganj	YES	NO	No fault observed in PMU	Issue at Teesta-III rectified
10	220KV-RAJARHAT-JEERAT-1	18-12-2019	14:10	Not tripped	R-n, z1, 94.91 A, A/R L/O	R-N Fault	NO	NO	No fault observed in PMU	Issue resolved at Jeerat
11	400KV-BAHARAMPUR-SAGARDIGHI-1	23-12-2019	07:11	DT Receipt	No tripping	DT received at Baharampur	YES	NO	No fault observed in PMU	Main open, tie was closed during Bus S/D. WB have to check Tie Breaker feedback for DT logic
12	400KV-BAHARAMPUR-SAGARDIGHI-1	24-12-2019	08:43	DT Receipt	suprious carrier signal while taking bus shutdown	DT receipt at baharampore	YES	NO	No fault observed in PMU	

S.NO	LINE NAME	TRIP DATE	TRIP TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	DR/EL RECEIVED FROM LOCAL END	DR/EL RECEIVED FROM REMOTE END	Primary observation/ Remarks	PCC Comments
13	220KV-RAJARHAT-JEERAT-2	31-12-2019	15:40	No tripping	Opened from Jeerat end only	Opened from Jeerat end only	NO	NO	No fault observed in PMU	Issue resolved at Jeerat

Annexure-C1

List of tripping/auto-reclose incidents in the month of October 2019, where discrepancies has been observed in protection system/DR configuration (discussed in 85th ER PCC meeting)

Sr No	Date	Time	Line name	Problem at	issues	Utility to update	Action taken by utilities
7	12-10-2019	08:51	220 kV Gaya Sonenagar - I	Sonenagar	A/R operation started at Sonenagar end; But three poles tripped after 1 second without reclose attempt.	BSPTCL	
8	15-10-2019	04:37	220 kV Gaya Sonenagar - II	Sonenagar	A/R operation started at Sonenagar end; But three poles tripped after 1 second without reclose attempt	BSPTCL	

List of substations where DR is to be standardized as per decision taken in 79th ER PCC meeting (discussed in 85th ER PCC meeting)

Sr No	Line name	Problem at	Action taken by utilities
1	400 kV Maithon Ranchi	Maithon	
2	220 kV Maithon – Dhanbad – I	Maithon	
3	220 kV Birpara – Alipurduar - D/C	Birpara	
4	400 kV Maithon Jamshedpur	Maithon	
5	400 kV Alipurduar – Bongaigaon – D/C	Alipurduar	
6	400 kV Binaguri - Rangpo - II	Binaguri	
7	400 kV Sagardighi Berhampur - II	Berhampur	
8	400 kV Binaguri – Bongaigaon – II	Binaguri	

List of tripping/auto-reclose incidents in the month of November 2019, where discrepancies has been observed in protection system/DR configuration (discussed in 86th ER PCC meeting)

S.NO	LINE NAME	TRIP DATE	TRIP TIME	Reason	Primary observation/ Remarks	comments in PCC	Action taken (to be updated by utilities)
1	220KV-PUSAULI-DEHRI-1	03-11-2019	11:34	PLCC problem	BSPTCL to update about status of PLCC	BSPTCL to update	
3	400KV-NEW PPSP-NEW RANCHI-2	06-11-2019	09:02	DT received at New Ranchi	Why DT was send from NEW PPSP ?	WBSETCL informed DT not sent by New PPSP end. PG ER1 to check PLCC issue in next opportunity shutdown	
4		07-11-2019	09:10	DT received at New Ranchi	Why DT was send from NEW PPSP ?		
6	220KV-FSTPP-LALMATIA-1	11-11-2019	11:30	TRIPPED FROM FSTPP	High fault clearance time and No Auto-reclose operation may be explained	NTPC to share DR	
8	400KV-BARIPADA-KHARAGPUR-1	15-11-2019	11:20	Y-N Fault	Kharagpur end DR to be standardized. Baripada end DR to be shared. Status of A/R operation at both ends to be shared.	PG to share DR at Baripada end. Line tripped from Kharagpur end due to fault in reclaim time.	
10	400KV-KODERMA-BOKARO-1	19-11-2019	01:27	B-N Fault	DR may be sent, A/R operation may be explained.	No representative from DVC was present. DVC to update	

S.NO	LINE NAME	TRIP DATE	TRIP TIME	Reason	Primary observation/ Remarks	comments in PCC	Action taken (to be updated by utilities)
12	220KV-CHANDIL-STPS(WBSEB)-1	21-11-2019	12:35	Y-N Fault	STPS end DR to be shared, Chandil end DR to be standardized, Status of A/R operation at both end to be shared	WBPDCL & JUSNL are to solve the issue of PLCC panel	
14	220KV-GAYA-SONENAGAR-1	26-11-2019	21:28	R-N Fault	Only R phase breaker opened at Sonenagar end. But auto-reclose attempt was not taken after dead time. Reason may be explained by BSPTCL.	BSPTCL to update (Same problem was flagged in 85th ER PCC meeting also)	

Sl No.	Name of the incidence	PCC Recommendation	Latest status
86th PCC Meeting			
1.	Disturbance at Teesta – III Generating Station on 25.11.2019 at 15:18 Hrs.	<p>PCC advised Teesta-III to take the following corrective actions:</p> <ul style="list-style-type: none"> DT should not be initiated for Bus II elements in this case, the LBB scheme at Teesta III should be reviewed One second delay was observed between initiation of reverse power flow relay of Unit 5 and LBB initiation, the same need to be checked. Operation of pole discrepancy to be checked Occurrence of resonance phenomenon to be simulated/verified at Teesta-III after tripping of 400kV Teesta III-Kishanganj Line from Kishanganj end in view of distortion in signals at Teesta III end The settings of Unit #5 reverse power relay to be reviewed <p>Protection system at Teesta III including CB operation to be tested to avoid inadvertent operation of protection system in future.</p>	<p><i>Teesta-III informed that-</i></p> <ul style="list-style-type: none"> <i>LBB scheme has been reviewed.</i> <i>Operation of pole discrepancy has been checked and resolved.</i> <i>They will perform the simulation studies to study resonance phenomenon.</i> <i>Unit #5 reverse power settings are as per recommendation.</i> <p><i>Further, Teesta-III informed that protection system is being maintained at regular intervals.</i></p>
2.	Tripping of 220 KV Gaya Sonenagar D/C on 27.11.2019 at 15:30 Hrs.	PCC advised BSPTCL to send the details to ERPC/ERLDC at the earliest.	<i>BSPCTL informed that they have sent the details via mail.</i>
3.	Disturbance at Jorethang on 04.11.2019 at 14:18 Hrs.	PCC observed that settings of DEF at Jorethang of 220 kV Jorethang – New Melli – II needs to be reviewed.	<i>Jorethang informed that they have reviewed the settings of DEF.</i>
85th PCC Meeting			
4.	Multiple tripping incident at Indravati on 17-09-2019 at 16:03 hrs	PCC advised Powergrid to analyze the reason for sudden voltage rise.	<i>Powergrid informed that sudden voltage rise is due to nature of fault and no other reason could be found out.</i>

5.	Implementation of Zone 4 reduced time setting at Sipara Substation and enabling of back up protection in 220 kV Patna-Sipara T/C Differential protection	PCC advised BSPTCL to share the details to ERLDC and ERPC. In 3 rd TeST meeting, BSPTCL informed that they are yet to resolve the issue.	<i>BSPTCL informed that Zone-4 time settings have been reduced.</i> <i>Further, BSPTCL informed that back up protection would be implemented by March, 2020.</i>
84th PCC Meeting			
6.	Disturbance at Talcher HVDC station on 04.09.19 at 16:59 Hrs.	Powergrid informed that the issue has been referred to M/s Siemens for analysis. PCC noted this and asked powergrid to share the findings.	<i>Powergrid informed that M/s Siemens have visited the HVDC station and have suggested schemes which are to be implemented.</i>
83rd PCC Meeting			
7.	Total power failure at 220 kV Darbhanga (BSPTCL) S/s on 16.08.2019 at 22:23 Hrs.	PCC observed that DR configuration at DMTCL end is not in order. PCC advised DMTCL to configure the DR settings as per the standard.	<i>DMTCL informed that DR would be configured by end of February, 2020.</i>
81st PCC Meeting			
8.	Disturbance at 400 kV Dikchu S/s on 30.06.2019 at 09:55 Hrs.	The time setting for the DEF relay at Jorethang end was 500 msec. PCC advised Jorethang to review the timer setting of DEF protection at Jorethang end. PCC advised Chuzachen to review the zone settings for 132 kV Chuzachen-Rangpo line. PCC advised TPTL to do line patrolling for 400 kV Rangpo-Dikchu line to find out the cause of such high resistive fault in the line.	<i>Chuzachen informed that they have asked for information related to Rangpo end from Powergrid and Sikkim.</i> <i>Further, Chuzachen informed that they would send the zone setting file to ERPC/ERLDC at the earliest.</i>
9.	Disturbance at 220 kV Budhipadar(OPTCL) S/s on 12.06.2019 at 00:37 Hrs.	PCC advised OPTCL to properly configure the DRs for 220 kV Budhipadar – Korba D/C & 220 kV Budhipadar-Raigarh circuit at Budhipadar end and for 220 kV Budhipadar – Lapanga - II at	<i>OPTCL informed that DR for Budhipadar – Korba Circuit-I has been configured.</i>

		<p>Lapanga end as per the DR standard finalised in 79th PCC Meeting.</p> <p>PCC also advised OPTCL to check the time synchronization.</p> <p>In 3rd TeST meeting, OPTCL informed that they had replaced the old relay at Korba.</p>	
10.	Disturbance at 400 kV Meramundali (OPTCL) S/s on 03.06.2019 at 01:15 Hrs.	<p>For voltage rise issue, PCC advised to check for any CVT related issues in the substation. PCC also advised to carry out earthing audit of the complete substation.</p> <p>In 3rd TeST meeting, OPTCL informed that they have issued tender for the earthing audit of the substation.</p>	
11.	Disturbance at 220/132 kV Dumka(JUSNL) S/s on 19.06.2019 at 13:02 Hrs.	<p>PCC advised for time synchronization of the DR outputs at both Maithon & Dumka end.</p> <p>JUSNL informed that there was antenna and cable fault in the time synchronisation module.</p> <p>JUSNL informed that the material is to be received via courier and same is to be resolved by December, 2019.</p>	<i>JUSNL informed that they resolved the issue and DR has been synchronised.</i>
71st PCC Meeting			
12.	Disturbance at 220/132 kV Motipur(BSPTCL) S/s on 15.08.18 at 13:00 hrs.	PCC advised BSPTCL to check the disturbance recorders of all the lines in 220 kV Motipur S/s and communicate the findings to ERPC/ERLDC at the earliest.	
13.	Disturbance at 400 kV Farakka S/s on 19.08.18 at 15:26 hrs.	PCC advised to check the reason for not sending carrier from Farakka to Kahalgaon and non-operation of Autorecloser.	<i>NTPC informed that the carrier healthiness is being checked and work is in under progress.</i>

SUPPORT PERIOD WORK DONE BY PRDC Pvt. Ltd.

1. Technical analysis for Major grid disturbances and in other protection aspect through out the year.
 - a. Major analysis done for Biharshariff S/S .
 - b. Major analysis done for PTPS S/S .
 - c. Major analysis done for Sonenagar S/S .
 - d. Major Analysis done for TLDP -4 S/S .
 - e. Analysis done for DR standardization for eastern region .
 - f. Recently Analysis done for Jorthang S/S.
 - g. Consolidated all distance relay setting for eastern region.
 - h. Attended all PCC meetings for protection consultancy.

2. Preparation of database for all lines and transformers in eastern region .

3. Regular maintenance of Server . Some prime works are listed below.

UPS Backup Activity	
Date	Time
19.11.2018	15:00 - 15:40
31.12.2018	10:45 - 11:20
16.01.2019	10:20 - 11:00
24.01.2019	11:50 - 12:35
19.02.2019	14:25 - 15:05
15.03.2019	12:00 - 12:40
12.04.2019	13:45 - 14:25
02.05.2019	13:05 - 13:45
06.06.2019	09:40 - 10:20
15.07.2019	09:50 - 10:30
30.07.2019	10:15 - 10:16
20.08.2019	14:30 - 15:10
23.09.2019	11:10 - 11:40
21.10.2019	09:50 - 10:30

Hard Drive backup restore	
Sl no	Date
1	03.11.2018
2	01.03.2019
3	01.04.2019
4	08.07.2019

4. New Substation Visit in Last year for data collection and database building.

VISITED SS LIST 2019						
SL. NO.	SS NAME	VOLTAGE LEVEL	UTILITY	VISITED DATE	REASON FOR VISIT	STATE
1	RAJARHAT	400/220 kV	PGCIL	13-02-19	DATA COLLECTION	WEST BENGAL
2	KESHIARY	132/33 kV	WBSETCL	23-04-19	DATA COLLECTION	WEST BENGAL
3	INDUS	132/33 kV	WBSETCL	24-04-19	DATA COLLECTION	WEST BENGAL
4	DOMKAL	132/33 kV	WBSETCL	26-04-19	DATA COLLECTION	WEST BENGAL
5	SAGARDIGHI NEW	220/132/33 kV	WBSETCL	26-04-19	DATA COLLECTION	WEST BENGAL
6	BHADRAPUR	132/33 kV	WBSETCL	27-04-19	DATA COLLECTION	WEST BENGAL
7	ISLAMPUR	132/33 kV	WBSETCL	30-04-19	DATA COLLECTION	WEST BENGAL
8	SONAKHALI	132/33 kV	WBSETCL	08-05-19	DATA COLLECTION	WEST BENGAL
9	TASHIDING HEP	220/11 kV	DANS POWER	12-06-19	DATA COLLECTION	SIKKIM
10	LAPANGA	400/220/132/33 kV	OPTCL	11-07-19	DATA COLLECTION	ODISHA
11	TENTULIKHUNI VENTO SOLAR	132/11 kV	ESSEL	15-07-19	DATA COLLECTION	ODISHA
12	TUSHURA VENTO SOLAR	132/11 kV	ESSEL	17-07-19	DATA COLLECTION	ODISHA
13	KESINGA VENTO SOLAR	132/11 kV	ESSEL	17-07-19	DATA COLLECTION	ODISHA
14	DAKSHIN ODISHA SOLAR,PADAMPUR	132/11 kV	ESSEL	18-07-19	DATA COLLECTION	ODISHA
15	UNIT-8	132/33 kV	OPTCL	19-07-19	DATA COLLECTION	ODISHA
16	CHIKITI	132/33 kV	OPTCL	25-07-19	DATA COLLECTION	ODISHA
17	KEONJHAR	220/33 kV	OPTCL	26-07-19	DATA COLLECTION	ODISHA
18	CHANDABALI	132/33 kV	OPTCL	27-07-19	DATA COLLECTION	ODISHA
19	BIHTA NEW	220/132 kV	BSPTCL	04-10-19	DATA COLLECTION	BIHAR
20	GORADIH	220/132 kV	BGCL	06-10-19	DATA COLLECTION	BIHAR

5. Trainings are done State wise .

On PDMS:-

West Bengal(Siliguri)	04/02/2019 to 05/02/2019
West Bengal(Durgapur)	08/04/2019 to 09/04/2019
Bihar	08/04/2019 to 09/04/2019
Odisha	22/07/2019 to 23/07/2019
Jharkhand	25/09/2019 to 26/09/2019

ON PSCT:-

Bihar	10/04/2019 to 11/04/2019
Jharkhad	11/06/2019 to 12/06/2019

6. Update new changes of substation elements as discussed in OCC meetings .

7. Regular update of PDMS and Mi-PSCT software.

8. New Portal for tripping analysis in MiP – PDMS is launched in January ‘ 2019 for eastern region.

9. Providing a continuous support in database management and protection simulation for all days being present in ERPC premises.

COMMISSIONING OF NEW TRANSMISSION ELEMENTS IN EASTERN REGION				
S.No	MONTH	ELEMENTS	DETAILS OF ELEMENTS	REMARKS
1	OCC_OCT 2018	T/L	400kV Farakka-Baharampur-I Powergrid	DONE
2	OCC_OCT 2018	T/L	400kV Farakka-Baharampur-II Powergrid	DONE
3	OCC_OCT 2018	T/L	400kV Farakka-Baharampur line now is Farakka-Sagardighi-II	DONE
4	OCC_OCT 2018	B/R	125MVAR Bus Reator at Banka Powergrid	DONE
5	OCC_OCT 2018	L/R	50MVAR LR of 400kV Sasaram-Daltonganj-I at Daltonganj	DONE
6	OCC_OCT 2018	B/R	125MVAR Bus Reator at Bolangir Powergrid	DONE
7	OCC_OCT 2018	T/L	400kV DC line from Ib to Lapanga	DONE
8	OCC_OCT 2018	T/L	400kV LILO of Vedanta-Meramundali line at Lapanga S/s in	DONE
9	OCC_OCT 2018	SS	220kV Keonjhar GIS Keonjhar (PGCIL) to Keonjhar (OPTCL).	DONE
10	OCC_NOV 2018	L/R	80 MVAR LR of 400kV NewPurnea-Gokarna at Purnea end	DONE
11	OCC_NOV 2018	L/R	80 MVAR Line Reactor of 400kV New_Purnea-Farakka at Purnea	DONE
12	OCC_NOV 2018	B/R	125 MVAR Bus Reactor-II at Keonjhar PGCIL 31-10-2018 17:17	DONE
13	OCC_NOV 2018	L/R	240MVAR line reactor of 765kV Angul-Jharsuguda-III at Angul	DONE
14	OCC_NOV 2018	T/L	765kV Jharguda-Dharamjaigarh-III PGCIL 31-10-2018 23:35	DONE
15	OCC_NOV 2018	T/L	Ib-Lapanga-400kV Ckt-I charged on 03.11.2018	DONE
16	OCC_NOV 2018	T/L	Ib-Lapanga-400kV Ckt-II charged on 03.11.2018	DONE
17	OCC_NOV 2018	T/L	Sterlite-Lapanga 400kV LILO Line on MCT Tower charged on	DONE
18	OCC_NOV 2018	BUS	Lapanga 400kV Sub-station Bus charged on 03.11.18	DONE
19	OCC_DEC 2018	T/L	765kV Jharsuguda-Dharamjaigarh-IV PGCIL 01-11-2018 20:10	DONE
20	OCC_DEC 2018	T/L	400kV Lapanga - Meramundali Ckt I OPTCL 02-11-2018 12:53	DONE
21	OCC_DEC 2018	BUS	400kV Bus II at Lapanga OPTCL 02-11-2018 12:53	DONE
22	OCC_DEC 2018	BUS	400kV Bus I at Lapanga OPTCL 02-11-2018 14:27	DONE
23	OCC_DEC 2018	T/L	400kV Lapanga - Meramundali Ckt II OPTCL 02-11-2018 14:27	DONE
24	OCC_DEC 2018	ICT	315MVA ICT-II at Daltonganj PGCIL 03-11-2018 11:36 No load	DONE
25	OCC_DEC 2018	B/R	125MVAR Bus reactor -II at Lakhisarai PGCIL 03-11-2018 13:40	DONE
26	OCC_DEC 2018	T/L	400kV Lapanga-Vedanta-I OPTCL 05-11-2018 17:28	DONE
27	OCC_DEC 2018	T/L	400kV Lapanga-IB_St_II (OPGC) Ckt- II OPTCL 05-11-2018 20:32	DONE
28	OCC_DEC 2018	T/L	400kV Lapanga-Vedanta-II OPTCL 05-11-2018 19:42	DONE
29	OCC_DEC 2018	Tr.	315MVA ICT-I at Lapanga OPTCL 09-11-2018 12:59	DONE
30	OCC_DEC 2018	T/L	400kV IB St-II (OPGC) - Lapanga-I OPTCL 09-11-2018 15:51	DONE
31	OCC_DEC 2018	GT	IB St-II (OPGC) GT#3 OPGC 13-11-2018 17:50 Back charge	DONE
32	OCC_DEC 2018	T/L	765kV Jharsuguda-Angul-3 PGCIL 28-11-2018 20:54	DONE
33	OCC_DEC 2018	T/L	765kV Jharsuguda-Angul-4 PGCIL 28-11-2018 23:58	DONE
34	OCC_DEC 2018	T/L	132 KV Rosera-Hasanpur Sugar mill T/L BSPTCL 29-11-2018	NEW
35	OCC_DEC 2018	BAY	220KV Bihta - 1 & 2 bay@GSSGaurichak BSPTCL 05-12-2018	DONE
36	OCC_JAN 2019	L/R	50MVAR L/R of 400kV Sasaram-B'sariff-I at B'Sariff	DONE
37	OCC_JAN 2019	T/L	220kV New_Purnea-Begusarai-I PGCIL 19-12-2018 16:13	DONE
38	OCC_JAN 2019	GT	GT#4 (270X3 MVA) at IB-St#2 (OPGC) OPGC 26-12-2018 17:57	DONE
39	OCC_JAN 2019	T/L	220kV Keonjhar(PG)-Keonjhar(OPTCL)-I OPTCL 01-01-2019	DONE
40	OCC_FEB 2019	ICT	1500 MVA ICT 4 (765/400kV) at Gaya PGCIL 03-01-2019 17:32	DONE
41	OCC_FEB 2019	T/L	400 KV Teesta_III-Kishanganj TPTL 04-01-2019 17:07	DONE
42	OCC_FEB 2019	ICT	400/132 kV, 200 MVA ICT # 2 at NSTPP (NPGC) NPGC 15-01-	NEW

43	OCC_FEB 2019	B/R	50 MVAR Bus Reactor at Nabinagar BRBCL 18-01-2019 13:40	NEW
44	OCC_FEB 2019	T/L	400 KV Subhashgram-Rajarhat PGCIL 28-01-2019 17:09	DONE
45	OCC_FEB 2019	T/L	400 KV Jeerat-Rajarhat PGCIL 28-01-2019 17:51 at Rajarhat	DONE
46	OCC_FEB 2019	L/R	80 MVAR Line reactor of 400kV Rajarhat-Gokarna at Rajarhat	DONE
47	OCC_FEB 2019	T/L	220 KV Chaibasa(JUSNL)-Ramchandrapur-I JSUNL 30-01-2019	DONE
48	OCC_FEB 2019	T/L	220 KV Chaibasa(JUSNL)-Ramchandrapur-II JSUNL 30-01-2019	DONE
49	OCC_MAR 2019	ICT	500 MVA, 400/220kV ICT 3 at Gaya PGCIL	DONE
50	OCC_MAR 2019	T/L	LILO of 220kV EMSS - NCSS Ckt No.2 at princep street S/S CESC	DONE
51	OCC_MAR 2019	T/L	400 kV Rangpo-Kishanganj TPTL 11-02-2019 16.22 hrs.	DONE
52	OCC_MAR 2019	ICT	160 MVA, 220 Power Transformer (T1) at princep street S/S	DONE
53	OCC_MAR 2019	ICT	500 MVA, 400/220kV ICT-2 at Patna PGCIL 15-02-2019 20:59	DONE
54	OCC_MAR 2019	GT	BRBCL #3(250 MW) at Nabinagar NTPC+ Railway 26-02-2019	NEW
55	OCC_MAR 2019	TFR	220/33 kV (20 MVA) Power Transformer at Narasinghpur Grid	NEW
56	OCC_APR 2019	T/L	400 KV Darbhanga-Kishanganj-1 PGCIL 12/03/19 03:31 hrs	DONE
57	OCC_APR 2019	B/R	125 MVAR Bus Reactor-1 at Rajarhat PGCIL 15/03/19 21:07 hrs	DONE
58	OCC_APR 2019	GT	NSTPP Unit-1 (660MW) NPGC 23/03/19 22:31 hrs	NEW
59	OCC_APR 2019	B/R	125 MVA Bus Reactor-2 at Rajarhat PGCIL 29/03/19 23:56 hrs	DONE
60	OCC_APR 2019	L/R	80 MVAR Line Reactor at Rajarhat for 400KV Rajarhat-Farakka	DONE
61	OCC_APR 2019	GT	IBTPS, OPGC Unit #3(660MW) OPGC 30/03/19 08:00Hrs	DONE
62	OCC_APR 2019	T/L	240 MVAR Line Reactor at Sundergarh for 765 KV Sundergarh	DONE
63	OCC_MAY 2019	GT	800 MW Darlipali unit 1 (G.T. 1) NTPC 04/04/19 9:02First time	DONE
64	OCC_MAY 2019	T/L	765 KV Jharsuguda Raipur I OGPTL 04/04/19 21:12	DONE
65	OCC_MAY 2019	T/L	765kv Jharsuguda-Raipur-2 OGPTL 05/04/19 23:32	DONE
66	OCC_MAY 2019	ICT	400/220KV, 315MVA ICT-2 at Bokaro-A DVC 25/04/19	DONE
67	OCC_JUNE 2019	T/L	132KV Biharsharif-Sheikhpura ckt-2 BSPTCL 06-05-2019 17:37	DONE
68	OCC_JUNE 2019	T/R	50MVA Transformer-T2@GSS Bihta new BSPTCL 08-05-2019	NEW
69	OCC_JUNE 2019	T/R	160MVA ICT-2 @ NARHAT(BGCL) GIS BSPTCL 09-05-2019 17:24	DONE
70	OCC_JUNE 2019	T/L	132KV Biharsharif-Nawada ckt-2 BSPTCL 10-05-2019 18:14	DONE
71	OCC_JUNE 2019	T/L	400 kV North Karanpur II Bay (430) @ Gaya PGCIL 24-05-2019	DONE
72	OCC_JUNE 2019	T/L	400 kV North Karanpur I Bay (427) @ Gaya PGCIL 24-05-2019	DONE
73	OCC_JUNE 2019	T/L	132kv Purulia-Jhalda WBSETCL 29-05-2019 17:15 132kv Purulia	NEW
74	OCC_JULY 2019	T/R	400/220 KV ICT 3 at Durgapur PGCIL 07-06-2019 10:53	DONE
75	OCC_JULY 2019	T/L	400 KV AlipurduarJigmellingckt 1 PGCIL 13-06-2019 18:51 400kV	DONE
76	OCC_JULY 2019	T/L	400 KV AlipurduarJigmellingckt 2 PGCIL 13-06-2019 20:37	DONE
77	OCC_JULY 2019	T/L	80 MVAR LR of Kishanganj-Darbhanga Line-2 at Kishanganj SS	DONE
78	OCC_JULY 2019	T/L	132kv Malda-Balurghat-Gajole (Tee) WBSETCL 11/6/2019 20:55	NEW
79	OCC_JULY 2019	T/L	132kv Raiganj-Gajole WBSETCL 132kv charged at from Raiganj	NEW
80	OCC_JULY 2019	T/L	132kv Malda-Gajole WBSETCL LILO of Mada-Samsi at Gazole	NEW
81	OCC_JULY 2019	T/L	132kv Samsi-Gajole WBSETCL LILO of Malda-Samsi at Gazole	NEW
82	OCC_JULY 2019	T/L	132 KV D/C Goradih (New Sabour)-Sabour T/L BSPTCL	NEW
83	OCC_JULY 2019	T/L	LILO of 220 KV Therubali-Indravatickt -IV at Kashipur OPTCL	NEW

COMMISSIONING OF NEW TRANSMISSION ELEMENTS IN EASTERN REGION

S.No	MONTH	UTILITY	ELEMENTS	DETAILS OF ELEMENTS	REMARKS
1	OCC_AUG	DGCL	GEN	Unit 2 of Mangdhechu (180MW)	NOT IN SCOPE
2	OCC_AUG	WBSETCL	T/L	400 kV Bidhanagar -New Chanditala	DONE
3	OCC_AUG	WBSETCL	T/L	400 kV New_ Chanditala- Arambag	DONE
4	OCC_AUG	PGCIL	T/L	400 KV Patna-NPGC	DATA COLLECTION IN PPROCESS
5	OCC_AUG	SIKKIM GOVT	T/L	Bay of 132kV Rangpo-Chuzachen-2 at Rangpo	DONE
6	OCC_AUG	SIKKIM GOVT	T/L	Bay of 132kV Rangpo-Melli at Rangpo	DONE
7	OCC_AUG	WBSETCL	T/L	220 kv Dalkhola-Gazole	DATA COLLECTION IN PPROCESS
8	OCC_AUG	WBSETCL	T/L	220 kv Gazole-Malda	
9	OCC_AUG	WBSETCL	T/R	160MVA ICT 1 at Gazole	
10	OCC_AUG	WBSETCL	T/R	160MVA ICT 2 at Gazole	
11	OCC_SEP	OPTCL	T/L	220 KV Keonjhar-Keonjhar II	DONE
12	OCC_SEP	BGCL	T/L	220 KV Patna khagaulckt 2	DONE
13	OCC_SEP	BGCL	T/L	220 KV Patna khagaulckt 3	DONE
14	OCC_SEP	PGCIL	T/R	500MVA ICT II at Rajarhat	DONE
15	OCC_SEP	MHPA	GEN	MangdhechuUint-I (180MW)	NOT IN SCOPE
16	OCC_SEP	MHPA	GEN	MangdhechuUint-II (180MW)	
17	OCC_SEP	MHPA	GEN	MangdhechuUint-IV (180MW)	
18	OCC_SEP	WBSETCL	T/L	132kV Goghat-Arambag	NEW SS

VISITED SS LIST 2019

SL. NO.	SS NAME	VOLTAGE LEVEL	UTILITY	VISITED DATE	REASON FOR VISIT	STATE
1	RAJARHAT	400/220 kV	PGCIL	13/2/2019	DATA COLLECTION	WEST BENGAL
2	KESHIARY	132/33 kV	WBSETCL	23/4/2019	DATA COLLECTION	WEST BENGAL
3	INDUS	132/33 kV	WBSETCL	24/4/2019	DATA COLLECTION	WEST BENGAL
4	DOMKAL	132/33 kV	WBSETCL	26/4/2019	DATA COLLECTION	WEST BENGAL
5	SAGARDIGHI NEW	220/132/33 kV	WBSETCL	26/4/2019	DATA COLLECTION	WEST BENGAL
6	BHADRAPUR	132/33 kV	WBSETCL	27/4/2019	DATA COLLECTION	WEST BENGAL
7	ISLAMPUR	132/33 kV	WBSETCL	30/4/2019	DATA COLLECTION	WEST BENGAL
8	SONAKHALI	132/33 kV	WBSETCL	8/5/2019	DATA COLLECTION	WEST BENGAL
9	LAPANGA	400/220/ 132/33 kV	OPTCL	11/7/2019	DATA COLLECTION	ODISHA
10	TENTULIKHUNI VENTO SOLAR	132/11 kV	ESSEL	15/7/2019	DATA COLLECTION	ODISHA
11	TUSHURA VENTO SOLAR	132/11 kV	ESSEL	17/7/2019	DATA COLLECTION	ODISHA
12	KESINGA VENTO SOLAR	132/11 kV	ESSEL	17/7/2019	DATA COLLECTION	ODISHA
13	DAKSHIN ODISHA SOLAR,PADAMPUR	132/11 kV	ESSEL	18/7/2019	DATA COLLECTION	ODISHA
14	UNIT-8	132/33 kV	OPTCL	19/7/2019	DATA COLLECTION	ODISHA
15	CHIKITI	132/33 kV	OPTCL	25/7/2109	DATA COLLECTION	ODISHA
16	KEONJHAR	220/33 kV	OPTCL	26/7/2019	DATA COLLECTION	ODISHA
17	CHANDABALI	132/33 kV	OPTCL	27/7/2019	DATA COLLECTION	ODISHA

VISITED SS LIST 2019						
SL. NO.	SS NAME	VOLTAGE LEVEL	UTILITY	VISITED DATE	REASON FOR VISIT	STATE
1	BIHTA NEW	220/132 kV	BSPTCL	10/9/2019	DATA COLLECTION	BIHAR
2	GORADIH	220/132 kV	BGCL	12/9/2019	DATA COLLECTION	BIHAR