Agenda
for
66th PCC meeting

Date: 25.04.2018
Eastern Regional Power Committee
14, Golf Club Road, Tollygunge
Kolkata: 700 033

EASTERN REGIONAL POWER COMMITTEE

AGENDA FOR 66TH PROTECTION SUB-COMMITTEE MEETING TO BE HELD AT ERPC, KOLKATA ON 25.04.2018 (WEDNESDAY) AT 10:30 HOURS

PART – A

ITEM NO. A.1: Confirmation of minutes of 65th Protection sub-Committee Meeting held on 28th March, 2018 at ERPC, Kolkata.

The minutes of 65th Protection Sub-Committee meeting held on 28.03.18 circulated vide letter dated 13.04.18.

Members may confirm the minutes of 65th PCC meeting.

PART – B

ANALYSIS & DISCUSSION ON GRID INCIDENCES OCCURRED IN MARCH, 2018

ITEM NO. B.1: Total power failure at 220/132 kV Waria S/S on 09-03-2018 at 17:15 hrs

On 09-03-18 at 17:15 hrs, total power failure occurred at 220/132 kV Waria S/S due to tripping of all 220/132 kV ICTs and running units (U #4) at Waria. It is reported that Y-ph Wave Trap at 132/33 kV Ramkanali S/S caught fire at the time of the event.

Analysis of PMU plots:

Two faults have been observed in Durgapur PMU. First fault was seen in R & Y phases at 17:15:50 hrs which got cleared in 100ms. Three seconds after clearing the first fault, another fault was observed in R, Y & B phase which got cleared after 1000 ms.

Load loss 300 MW

Generation loss 180 MW

DVC may explain.

ITEM NO. B.2: Total power failure at Farakka Power Station on 30th March 2018

Complete blackout occurred at 400 kV Farakka NTPC Power station on 30th March 2018 during inclement weather condition. The event started at 13:26 Hrs with the tripping of 400 kV Bus 2 of Farakka on bus fault along with 400 kV Farakka-Malda 1 circuit. Immediately after this, Farakka Unit 5 also got tripped on re-heater protection. During this event, all remaining elements remained connected through 400 kV Bus 1 through their tie.

The second event occurred at 14:26 Hrs, when this bus also tripped on Bus bar protection. With this event, both the 400 kV Bus 1 and Bus 2 at Farakka became dead, which led the tripping of Farakka Unit 1, 2, 3 and 6. Along with the units, all the 400 kV lines also tripped except 400 kV Farakka-Beharampur& 400 kV Farakka- Durgapur 1 and Farakka-Durgapur 2 & 400 kV Farakka – Kahalgaon 2 that remained in service through their tiebreakers at Farakka substation.The net generation loss during this event was 1118 MW.

Following issues Observed during the event:

1. Delay in submission of information to ERLDC/ERPC on the event.
2. NTPC intimated that 400 kV Bus 2 fault occurred due to closing of bus side isolator earth switch (4489AE) of Farakka-Gokarna Line II for all the three phases. From the switchyard snapshot submitted, it is observed that all the three phases earth switch are in close condition. NTPC/PGCIL may kindly explain how earth switch of all the three phases got closed? Further, whether the mechanical interlock scheme was healthy or not?
3. NTPC could notfind reason for fault on 400 kV Bus 1 and bus bar protection operation. The diameter /bay from which the bus bar protection activated may kindly be explained by NTPC Farakka, basedon Bus bar protection relay record.

NTPC and PGCIL may explain.

ITEM NO. B.3: Repeated disturbances at Tashiding and Jorethang HEP

Detail report is enclosed at **Annexure-B3**.

1. Tripping of 220 kV Jorethang - New Melli D/C and 220 kV Tashiding -New Melli S/C lines on 22-03-2018 at 20:38 hrs

220 kV Jorethang - New Melli D/C tripped at Jorethang end on R-N fault at 20:38 hrs. At same time 220 kV Rangpo - Tashiding S/C and 220 kV Tashiding -New Melli S/C tripped at Tashiding end. 220 kV Rangpo - New Melli S/C successfully auto reclosed at same time at both the ends.

Relay indications are as follows:

Name of the elements	End 1 Relay Indication	End 2 Relay Indication
220 kV Jorethang - New Melli 1 (Line length 21 km)	Jorethang: R Phase to E/F, Z-I, 7.14 km	New Melli end is yet to be received
220 kV Jorethang - New Melli 2 (Line length 21 km)	Jorethang: Phase to E/F, Z-I, 7.2 km	New Melli end is yet to be received
220 kV Rangpo - Tashiding S/C (Line length 46 km)	Rangpo: R-N, 22.56 km, 4.2 kA, A/R successful	Tashiding: Tripped but no detail received.
220 kV Tashiding -New Melli S/C (Line length 18 km)	Tashiding: Tripped but no Detail received.	No Tripping
220 kV Rangpo - New Melli S/C (Line length 22 km)	Rangpo: R phase to E/F, Fault loc: 22.81 km, If: 6.47 kA, A/R successful	New Melli: R phase to E/F, Fault loc: 5.73 km, If: 1.13 kA, A/R successful

2. Tripping of 220 kV Tashiding - Rangpo S/C and 220 kV Tashiding - New Melli lines on 26-03-2018 at 17:19 hrs

At 17:19 hrs 220 kV Tashiding - Rangpo S/C and 220 kV Tashiding - New Melli (Did not trip at New Melli end) S/C tripped at Tashiding end due to Y-N fault resulting S/S dead at Tashiding.

Relay indications are as follows:

Name of the elements	End 1 Relay Indication	End 2 Relay Indication
220 kV Rangpo - Tashiding S/C (Line length 46 km)	Rangpo end: DT receipt	Tashiding end: Y Phase to E/F, Z-1, Fault location: 9.67 km, If : 1.62 kA
220 kV Tashiding -New Melli S/C (Line length 18 km)	Tashiding end: Y Phase to E/F, Z-1, 4.6 kA	N. Melli end: No tripping

Powergrid and DansEnergy may explain.

ITEM NO. B.4: Tripping of 220 KV Muzaffarpur-Hazipur D/C line on 21-03-2018 at 13:03 hrs.

On 21-03-18, 220 KV Muzaffarpur-Hazipur-I tripped on B-N fault at 12:57 hrs and 220 KV Muzaffarpur-Hazipur-II tripped due to Y-B at 13:03hrs. As Hazipur was radially fed from Muzaffarpur through 220 KV Muzaffarpur-Hazipur-D/C lines, total power failure occurred at 220/132 kV Hazipur S/S.

Load loss 175 MW

BSPTCL may explain.

ITEM NO. B.5: Disturbance at 400/220 kV Biharshariff S/s on 28-03-2018 at 18:43 hrs and 19-03-2018 at 02:02 hrs.

28-03-2018 at 18:43

Due to Y phase jumper snapping of 220 kV side of 400/220 kV ICT - III resulted tripping of all three 400/220 kV ICTs at Biharshariff and 220 kV Tenughat - Biharshariff S/C (From Tenughat in Z-III) resulting load loss at nearby area.

Load loss 560 MW

Generation loss 10 MW

19-03-2018 at 02:02 hrs

A heavy sound with flashing observed in switch yard area of BSPTCL Biharshariff s/s. On thorough inspection of switch yard area it was found that in 220KV Biharsharif - Fatuah Ckt-1 Y phase conductor between dead end tower and gantry got snapped on 132KV main Bus at BSPTCL Biharshariff s/s.

It is apparent from both PMU and DR that initially the fault was cleared by 220 KV line protection within zone-2 time but again fault appearred within 80 ms in all the three phases. At the second instant conductor might touched the 132 KV bus and ultimately caused tripping of 400/220KV ICT – I, II & III and 220/132 kV ICT – I, II & III at Biharshariff.

Relay indications are as follows:

Name of the elements	End 1 relay indication	End 2 relay indication
220 KV Biharshariff-Fatuah -I	Zone 1, Y-B fault	Zone-2 ,Y-B fault
440/220kV ICT 1, 2 & 3 at Biharshariff (PG)	Definite time over current	
220/132 kV ICT 1, 2 & 3 at Biharshariff (BSPTCL)	Tripped through O/C protection	

Load loss 135 MW

Powergrid and BSPTCL may explain.

ITEM NO. B.6: Tripping of 132KV KAHALGAON(BSPTCL)-LALMATIA-S/C line on 28-03-2018 at 09:14 hrs and 31-03-2018 at 01:22 hrs.

1. 28-03-2018 at 09:14 hrs

At 09:14 hrs 132KV KAHALGAON(BSPTCL)-LALMATIA-S/C- tripped from Lalmatia end due E/F Over Current resulting load loss at radially connected Sahebgunj S/S.

Load loss 32 MW

Fault clearing time as per PMU data: 350 ms.

2. 31-03-2018 at 01:22 hrs

At 01:22 hrs 132 kV Kahalgaon - Lalmatia S/C tripped due to O/C & E/F resulting load loss at radially fed Sahebgunj area.

Load loss 30 MW

Fault clearing time as per PMU data is less than 100 ms.

BSPTCL may explain.

ITEM NO. B.7: Disturbance at 220/132 kV Old Purnea S/S on 16-03-2018 at 11:15 hrs

There was a transient fault in 132 KV Purnea (BSPTCL) -Triveniganj s/c transmission line, due to which Triveniganj end distance protection relay operated on Zone 2. But due to VT fuse failure of Purnea end relay, the purnea end relay of 132 KV Purnea (BSPTCL) - Triveniganj s/c transmission line did not operate. As a result, the following lines got tripped:

- 220 kV New Purnea - Old Purnea D/C (tripped from New Purnea end on directional E/F)
- 220/132 kV ICT - I & II at Old Purnea (Tripped from O/C protection)
- 132 kV Old Purnea - Purnea (B) - I & II (CKT I & II tripped on O/C from Purnea Old)
- 132 kV Purnea - Kishangunj S/C (tripped from Kishangunj in Z-II)

As per PMU data, fault was cleared within 500 ms

BSPTCL and Powergrid may explain.

ITEM NO. B.8: Tripping of 132 KV Lakhisarai-Lakhisarai D/C lines on 19-03-2018 at 05:35 hrs

At 5:35 hrs,132 KV Lakhisarai Lakhisarai d/c tripped on R-N fault distance protection from Lakhisarai (PG) end.

Powergrid may explain.

ITEM NO. B.9: Disturbance at 132 kV Sabour S/S on 20-03-2018 at 22:34 hrs

At 22:34 Hrs, Y ph CT of 132/33 KV ICT #1 (HV side) at Sabour failed. At the same time, 132 KV Banka-Sabour D/c tripped, leading to a load loss of 52 MW.

BSPTCL may explain.

ITEM NO. B.10: Tripping of 132 kV NBU - Lebong S/C, 132 kV NBU - Rammam S/C, 132 kV Siliguri - Kurseong S/C, 132 kV Melli - Siliguri S/C and 132 kV Melli - Rangpo S/C lines on 11-03-2018 at 15:05 hrs

132kV NBU-Darjeeling and NBU-Rammam line tripped due to zone 1 operation. But 132kV bus of RHP got dead due to tripping of 132kV Rammam-Rangit line from Rangit(NHPC) end. At the same time, 132kV Siliguri(PG)-Kurseong line tripped from PG end causing total power failure at Kurseong S/s. 132 kV Melli - Siliguri S/C and 132 kV Melli - Rangpo S/C also tripped.

In 65th PCC, WBSETCL and Powergrid informed that due to severe thunder storms in around Darjeeling, Siliguri and NBU, multiple faults were occurred in 132kV NBU-Darjeeling, 132kV NBU-Rammam and 132kV Siliguri(PG)-Kurseong lines.

WBSETCL informed that faults in 132kV NBU-Darjeeling and 132kV NBU-Rammam lines were successfully cleared from both ends on zone 1 distance protection.

Powergrid informed that 132kV Siliguri(PG)-Kurseong line tripped from PG end on high set overcurrent protection. This resulted in total power failure at 132kV Kurseong.

It was informed that 132kV Rammam-Rangit line was also tripped from Rangit(NHPC) end resulted in total power failure at Rammam. Details from Rangit are yet to be received.

PCC decided to discuss the disturbance in detail in next PCC Meeting and advised all the concern constituents to submit the details to ERPC and ERLDC.

Details received from WBSTCL are as follows:

SL NO	WEST BENGAL SUBSTATION	LINE	TRIPPING TIME	CLOSING TIME	RELAY	DURATION HH:MM	REMARKS
1	NBU	NBU- LEBONG	15:05	15:11	C-PH, Z-1, 14.93 KM	00:08	OK
2	LEBONG	NBU-LEBONG	15:05	15:13	A/R, 46.20 KM, STARTED PH C-N, Z-1, TRIP PH ABC		OK
3	NBU	NBU-RAMMAM	15:05	15:18	B-PH, C-PH, Z-1, 18.09 KM	00:20	OK
4	RAMMAM	NBU-RAMMAM	15:05	15:25	Y-PH, B-PH, Z-1, 37.52 KM		OK
5	RAMMAM	RHP-RANGIT	NO TRIPPING		No Relay	01:10	RHP NO POWER FROM 15:05 - 16:15 HR.
6	RANGIT	RHP-RANGIT	15:05	16:15	NOT KNOWN		
7	NBU	NBU-SLG(PG)	NO TRIPPING		No Relay	00:47	CB Closed.
8	SLG (PG)	NBU-SLG(PG)	15:05	15:52	NOT KNOWN		OK
9	KURSEONG	KURSEONG-RANGIT	S/D				S/D
10	KURSEONG	KURSEONG-SLG(PG)	NO TRIPPING		No Relay	00:45	NO POWER FROM 15:05 - 15:50
11	SLG (PG)	KURSEONG-SLG(PG)	15:05	15:50	NOT KNOWN		

Sikkim, Powergrid and WBSETCL may explain.

ITEM NO. B.11: Tripping of 132 kV Rangpo Gangtok S/C and 132 kV Chujachen - Gangtok S/C on 26-03-2018 at 16:45 hrs

There was no generation at Chujachen at the time of the disturbance. 132 kV Rangpo Gangtok S/C and 132 kV Chujachen - Gangtok S/C tripped simultaneously at 16:45 hrs due to R-Y-B-N fault and B-N fault respectively.

Powergrid and Chuzachen may explain.

ITEM NO. B.12: Tripping of Rangit units on 26-03-2018 at 14:40 hrs and 17:56 hrs

At 14:40 hrs

132 kV Rangit - Rammam S/C and 132 kV Melli -Sagbari were out of service. 132 kV Melli - Siliguri S/C tripped at 14:22 hrs resulting formation of island with running of unit II at Rangit and load at surrounding area. Due to mismatch of load generation balance, Rangit unit started hunting and it was hand-tripped.

Load loss 12 MW

Generation loss 20 MW

At 17:56 hrs

132 kV Rangit - Rammam S/C and 132 kV Melli -Sagbari were out of service. At 17:56 hrs 132 kV Melli - Silliguri S/C and 132 kV Rangit -Kurseong S/C tripped on Y-B-N fault resulting formation of island with running units at Rangit and load at surrounding area. Due to mismatch of load generation balance, Rangit unit started hunting and they were hand-tripped.

Load loss 16 MW

Generation loss 60 MW

NHPC, Sikkim and Powergrid may explain.

ITEM NO. B.13: Disturbance in North Bengal on 22.03.18 at 11:23hr

On 22.03.18 at 11:23hr, generators running at Rammam and TCF HEP got tripped due to overcurrent protection causing generation loss of 10MW and 19MW. WBSETCL sub-stns. at NBU, Ujanu, Siliguri, Darjeeling, Kurseung and NJP experienced momentary blackout at that moment though no tripping of any line occurred at any S/S. UFR relays operated at 11:23hr tripping 33kv feeders at NJP, NBU and Siliguri sub-stn. At NJP, the only 160MVA TR#2 which was in service has tripped on both HV & LV side due to operation of relay 86 (Master Trip). It was presumed that some transient fault occurred at 132kv network associated with 220/132kv Siliguri(PGCIL) S/S at 11:23hr on 22.03.18 causing voltage dip at associated WBSETCL S/S.

In 65th PCC, WBSETCL informed that no transmission line was tripped from their end.

PCC advised Powergrid to verify and submit all the relevant details to ERPC and ERLDC for further analysis and detailed discussion in next PCC Meeting.

Powergrid, WBSETCL and NHPC may explain.

ITEM NO. B.14: Disturbance at 132 kV Patratu S/S (DVC) on 25-03-2018 at 14:25 hrs

220/132 kV ATR-II at Patratu was under shutdown. 132 kV bus at Patratu became dead after tripping of remaining 220/132 kV ATR at Patratu on E/F.

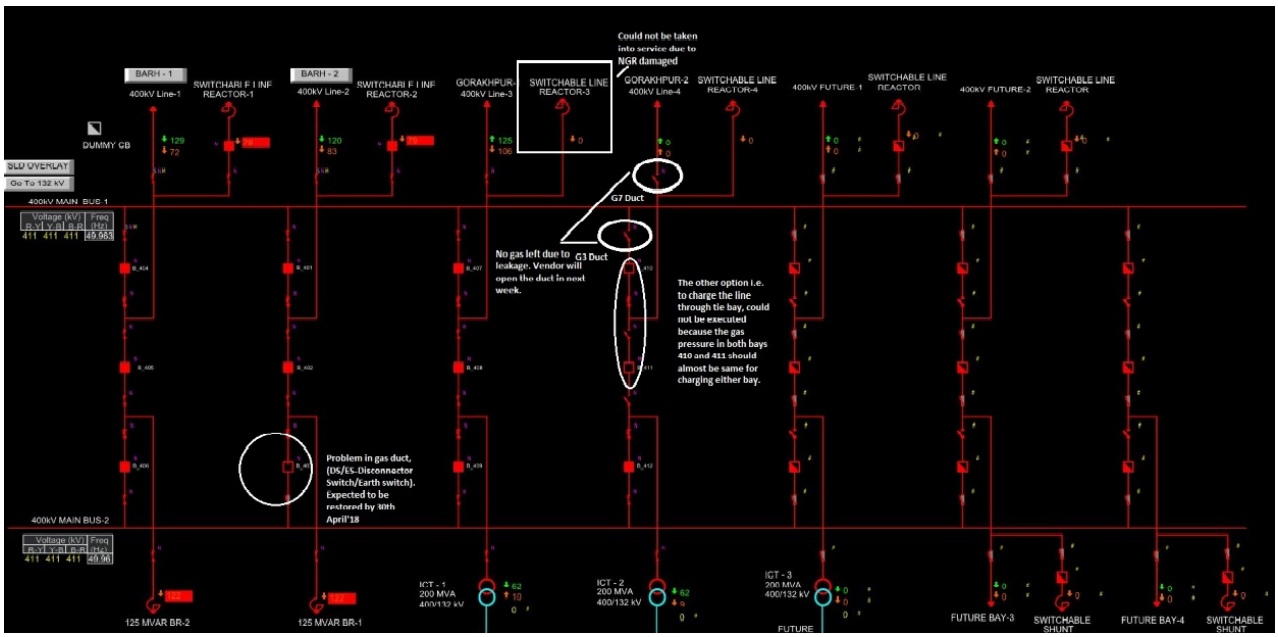
DVC may explain.

ITEM NO. B.15: Unreliable operation at Motihari (DMTCL) SS

In 144th OCC, ERLDC informed that 400/132kV Motihari S/Stn is of critical importance as the two high capacity inter-regional lines (400kVBarh-Gorakhpur Qd. Moose D/C) link E. Region with N. Region at this S/Stn. The Barh-Motihari D/C Qd. Moose line is essential for reliable power evacuation from Barh STPS of 2X660MW capacity. Motihari S/Stn is also responsible for meeting about 200MW load, considering Bihar and Nepal together.

Power supply to Motihari, Dhaka, Raxaul, Bettia, Ramnagar etc. S/Stns of Bihar and to Nepal at Surajpura and Parwanipur interface points failed at 09:56 Hrs of 07-04-18, due to tripping of all lines connected to Motihari 400kV (DMTCL) S/Stn on YN/BN/3-ph faults, leading to interruption of around 200MW load in Bihar and Nepal taken together. The 3-ph fault of Barh-Motihari D/C line was cleared with a delay of 400ms, which is much higher than that mandated by CEA standards (100ms). The units at Barh STPS experienced severe jerk of about 110MW during such fault. On same day at 18:25 Hrs, ICT I again tripped on overload protection. As a result 132 KV side became dead resulting in load loss of 177 MW at Ramnagar, Betiah, Raxaul, Motihari, Dhaka, Sibhar, Narkatiyaganj including 80 MW of Nepal as mentioned above

As on date main CB of 125MVAR bus reactor-1, line isolator of 400kV Gorakhpur-2 line along with main and tie CBs of this line are out of service due to problem in gas duct. 400 kV Motihari – Gorakhpur – II was out of service due to unavailability of both bays at Motihari S/S.



It may be appreciated that in view of the importance of Motihari 400kV as stated above, reliable performance of this S/Stn has to be ensured under all circumstances.

OCC took serious note of the issue and referred to 66th PCC Meeting scheduled to be held on 25th April 2018.

DMTCL may explain. Members may discuss.

ITEM NO. B.16: Tripping incidences in the month of March, 2018

Other tripping incidences occurred in the month of March 2018 which needs explanation from constituents of either of the end is given at **Annexure- B16**.

In 58th PCC, ERLDC informed that most of the constituents are not submitting the DR and EL data for single line trippings.

PCC advised all the constituents to upload the details along with DR and EL in PDMS on-line portal and referred the issue to TCC for further guidance.

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.

Members may discuss.

PART- C:: OTHER ITEMS

FOLLOW-UP OF DECISIONS OF THE PREVIOUS PROTECTION SUB-COMMITTEE MEETING(S)

(The status on the follow up actions is to be furnished by respective constituents)

ITEM NO. C.1: Disturbance at 220/132 kV Patratu S/S on 09-02-2018 at 15:00 hrs

In 65th PCC, JUSNL was advised to take the following measures:

- *Check the healthiness of the DC system including end to end cables at 220/132kV Patratu S/s*
- *Check the healthiness of all Circuit Breakers at 220/132kV Patratu S/s*
- *Check the healthiness of all the relays installed at 220/132kV Patratu S/s including 220/132kV ATRs*
- *Check Kanke end relay and CB of 132kV Patratu-Kanke line*
- *Check the Directional feature of 132 kV Hatia I – Sikidri and 132 kV Namkum - Hatia I line relays at Hatia-I*

PCC advised TVNL to verify the zone 1 reach of 220kV Patratu-TVNL line as TVNL end should trip on zone 2 in this case.

JUSNL and TVNL may update.

ITEM NO. C.2: Tripping of 132 kV Birpara(PG) – Birpara(WB) D/C line on 13-02-2018 at 17:53 hrs

132 kV NJP – Moinaguri S/C and 132 kV NJP - Chalsa - Moinaguri link were out of service. At 17:53 hrs 132 kV Birpara - Birpara D/C tripped from PG end resulting load loss at Birpara, Moinaguri, Alipurduar and their surrounding areas.

In 65th PCC, Powergrid informed that 132 kV Birpara(PG) - Birpara D/C tripped from PG on overcurrent protection due to overload.

Powergrid informed that settings at PG end have been implemented as per the data received from WBSETCL end.

WBSETCL informed that CT ratio at PG end has to be changed according to present loading of the line.

PCC advised Powergrid and WBSETCL to coordinate and review the CT ratio/relay settings to avoid unwanted tripping.

WBSETCL and Powergrid may update.

ITEM NO. C.3: Multiple tripping around Talcher during Pole shutdown on 09-01-2018

Regarding sending of carrier signal from Rourkela to Talcher, Powergrid informed that they have tested the scheme on 17th January 2018 and the issue has been referred to OEM(Alstom) for rectification.

Powergrid Odisha Project may update.

ITEM NO. C.4: Disturbance at 220 kV Budhipadar S/s on 01-10-17 at 09:25 hrs

In 62nd PCC, OPTCL informed that Busbar protection maloperated and tripped all the elements connected 220kV bus 1 at Budhipadar.

OPTCL added that the issue has been referred to OEM (Siemens) for rectification.

In 63rd PCC, OPTCL informed that OEM (SIEMENS) visited the Substation on 29th December'2017 and taken the data (i.e. Trip Log, Even Log & DR) for analysis.

In 64th PCC, OPTCL informed that OEM, Siemens has recommended for updating of 7SS52_MCU device firmware version to V4.73 or higher to resolve the restart automatic problems. Accordingly, Siemens will upgrade the firmware.

OPTCL may update.

ITEM NO. C.5: Tripping of 220 KV Darbhanga-Motipur D/C and 220 KV Muzaffarpur (MTPS)-Motipur D/C on 02-11-17 at 13:18 hrs

In 62nd PCC, it was opined that the busbar protection should not operate in this case.

BSPTCL informed that the issue of maloperation of busbar protection at 220kV Motipur has been communicated to OEM (GE) for rectification.

In 65th PCC, BSPTCL informed that GIS work is in progress. The busbar protection would be tested by OEM within 2 months

BSPTCL may update.

ITEM NO. C.6: Interim Arrangement for substations that are not having bus bar protection In Eastern region

There may be 400 kV or 220 kV substations where either the bus bar is kept out of service for planned shutdown or bus bar protection is not available due to various reasons. Further, the older substations having static busbar scheme would also undergo replacement activity witha numerical scheme for which the bus bar protection will again be required to be withdrawn for a considerable time. Under such scenario, there is need of a mechanism to reduce the bus fault clearance time as the non-availability of bus bar protection can result in delayed fault clearance.In case of any issue of the protection system at remote substations,there may bea widespread outage.

In view of this, it is proposed to adhere to the following philosophy whenever the bus bar protection is kept out or is not available for a considerable amount of time at any 765/400/220 kV substation:

1. Zone 4 (Reverse Zone) timing of all the Lines to be reduced to 300 ms. The LBB should have a high priority or the reverse zone time should be set at least equal to LBB time setting.
2. Healthiness of the carrier protection of all lines is to be ensured.
3. Zone 4 timer reset should be checked in all the relays, as its function needs to be flawless.
4. DMT high set available in the numerical backup Overcurrent (O/C) relays of all the ICTs be properly set to clear the bus fault immediately. The backup O/C protection is coordinated

with the upstream and downstream elements;therefore, it would not be possible to make it sensitive as suggested.

5. Bus Coupler overcurrent protection setting to be made lower. Whenever the Bus Bar protection is out the Buses should be operated in split bus mode, to have isolation of the elements on other Buses from feeding the Bus fault.
6. Re-trip feature if available in LBB should also be enabled to take one more attempt of breaker opening.
7. Healthiness of all Protection i.e. both Main and Backup shall be ensured.
8. All the Other Utilities at the remote ends be informed about the Bus Bar protection outage through ERLDC/respective SLDCs

In the case where two separate bus bar protections schemes are available at the substation as Main 1 and Main 2, then the above will not be applicable in the case of the outage of any one of the bus bar protection scheme.

In 65th PCC, all the constituents were advised to send their comments to ERPC and ERLDC.

PCC may discuss.

ITEM NO. C.7: Follow Up action on Disturbance at 400kV Koderma and 400kV Bokaro-A on 30-01-18 at 10:46 Hrs

- **DVC to check the neutral earthing of line CVTs:** Status of CVT earthing checking at the substation may be informed by DVC
- **Root cause:** If any root cause for this event has been found then may kindly be shared with ER PCM forum

Regarding CVT secondary earthing at DVC KTPS 400KV switchyard, DVC informed that the earth resistance of the electronic earth pit was measured. At present the value is 0.260 ohm. Earlier it was about 16 ohms as reported by KTPS O & M.

DVC may update.

ITEM NO. C.8: Third Party Protection Audit

1. Status of 1st Third Party Protection Audit:

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

Name of Constituents	Total Observations	Complied	% of Compliance
Powergrid	54	46	85.19
NTPC	16	14	87.50
NHPC	1	1	100.00
DVC	40	26	65.00
WB	68	27	39.71
Odisha	59	42	71.19
JUSNL	34	25	73.53
BSPTCL	16	5	31.25
IPP (GMR, Sterlite and MPL)	5	5	100.00

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

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

Members may update.

ITEM NO. C.9: Repeated pole blocking at HVDC Sasaram

In 63rd PCC, Powergrid submitted the report which is enclosed at **Annexure-C9**.

In 64th PCC, Powergrid informed that they are implementing the observations. PCC advised Powergrid update the status in monthly PCC Meetings.

Powergrid informed that as per OEM recommendation they have to install air condition system to minimize the temperature of the control panels.

PCC advised Powergrid to submit the details to ERPC and ERLDC.

Powergrid may update.

ITEM NO. C.10: 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/PLCC Link available**	**AR facility functional**
13	220KV BUDIPADAR-KORBA-II	23.06.16	Y-N FAULT	OPTCL	CSEB	PLCC available	will be activated in consultation with Korba
17	220 KV TSTPP-RENGALI	17.07.16	EARTH FAULT	NTPC	OPTCL		by March 2018
18	220KV BUDIPADAR-RAIGARH	21.07.16	EARTH FAULT	OPTCL	PGCIL	PLCC defective	
19	400 KV KOLAGHAT-KHARAGPUR-II	03.08.16	Y-N FAULT	WBPDCL	WBSETCL		
20	220 KV FARAKKA-LALMATIA	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	220 KV MUZAFFARPUR - HAZIPUR - II	10.08.16	B-N FAULT	PGCIL	BSPTCL		Voice established. For carrier required shutdown
24	220 KV ROURKELA - TARKERA-II	11.08.16	B-N FAULT	PGCIL	OPTCL	OPGW available	Expected to install protection coupler by Jan

							17
27	220 KV BIHARSARIF-TENUGHAT	07.09.16	B-N FAULT	BSPTCL	TVNL		
32	220KV Bidhannagar-Waria-II			WBSETCL	DVC		
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:

1. 220kV Purnea (PG)-Madhepura line
2. 220 kV Biharshariff- Begusarai line
3. 220 kV Biharshariff- Bodhgaya line
4. 220kV MTPS-Motiari line

Work is in progress expected to be commissioned by December 2017.

5. 220KV Madhepura-New Purnea D/C — Auto recloser is out of service at Madhepura
6. 220KV Muzaffarpur-Hajipur D/C line — Auto recloser is out of service at Hazipur
7. 220KV FSTPP-Lalmatia-1 — Auto recloser is out of service at Lalmatia
8. 220KV Patna-Khagaul-SC — Auto recloser is out of service at Khagual

In 65th PCC, Powergrid informed that they will replace the Autorecloser relay of 400 kV Rourkela-Chaibasa 1 and 400 kV Meramundali-Sterlite 1 & 2 by April 2018.

Members may update the status.

ITEM NO. C.11: Checklist for submission of updated data for Protection Database

The network data in Protection Database needs to be updated on regular basis on account of commissioning of new elements in the CTU as well as STU networks. Accordingly a checklist has been prepared which is enclosed in **Annexure-C11**.

All the constituents requested to submit the checklist on monthly bases in every OCC/PCC meetings.

Constituents may note.

ITEM NO. C.12: Any other issues.

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पावर सिस्टम ऑपरेशन करपोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)
Eastern Regional Load Despatch Centre: 14, Golf Club Road, Tollygunge, Kolkata-700 033.
CIN: U40105DL2009GOI188682
फ़ोन: 033- 24235755, 24174049 फैक्स : 033-24235809/5029 Website:www.erldc.org, Email ID- erldc@posoco.in

Incident No. 220318/1 & 260318/1 **Dtd: 03-04-18**

Report on repeated grid disturbances at Tashiding and Jorethang HEP during March 2018

Summary: This report is highlighting the issue of multiple blackouts of 220 kV Tashiding and 220 kV Jorethang substations due to multiple line tripping on a single transient fault. Apart from these, several other tripping on various faults has also occurred on 220 kV Tashiding-New Melli and 220 kV Tashiding-Rangit in last few months. Important tripping incidents occurred in the month of March, 2018 in this corridor are also mentioned in this report to raise the concern among the utilities for taking appropriate actions.

Network across Tashiding:

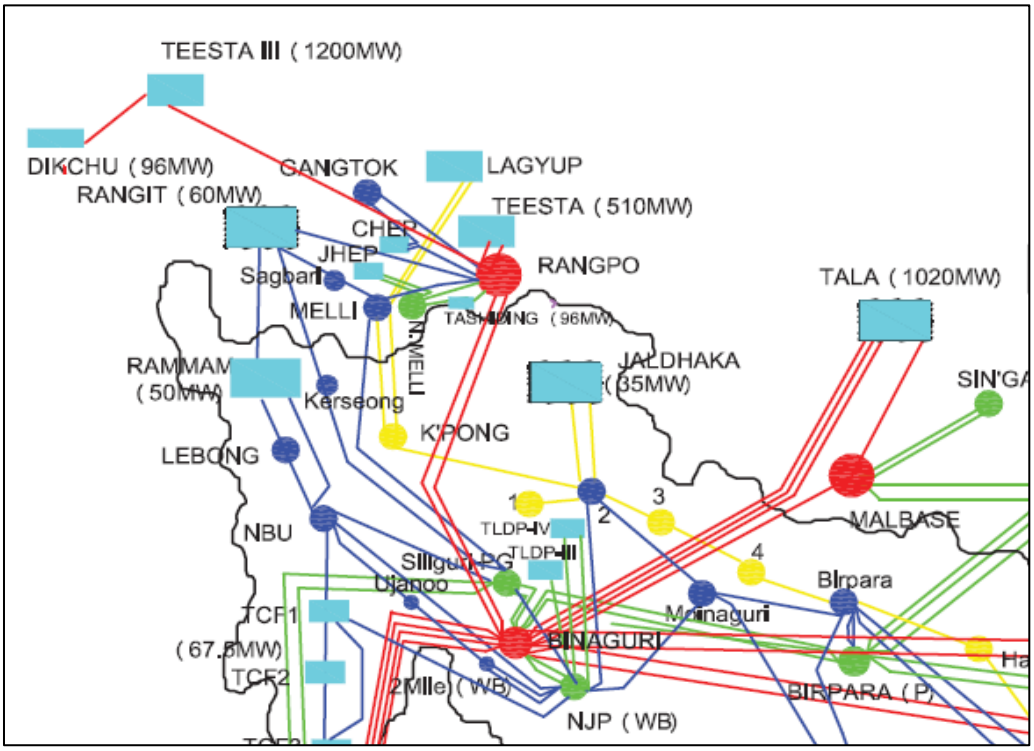

Figure 1: Geographical diagram of the network of affected system

A. Date / Time of disturbance: 22-03-18, 20:38 hrs

1) **Summary of the incident:** 220 kV Jorethang - New Melli D/C tripped at Jorethang end on R-N fault at 20:38 hrs. At the same time 220 kV Rangpo - Tashiding S/C and 220 kV Tashiding -New Melli S/C tripped at Tashiding end. Along with this, 220 kV Rangpo - New Melli S/C got successfully auto

reclosed at the same time on observing this fault from both the ends. The tripping of all lines from Tashiding and Jorethang has led to their blackout; however, no generation loss has occurred as no units are in operating condition at both the generating plants.

2) Category : - GD -1

3) Quantum of load/generation loss: Nil

4) Major elements tripped:

a. 220 kV Jorethang - New Melli D/C
b. 220 kV Rangpo - Tashiding S/C
c. 220 kV Tashiding - New Melli S/C

5) Details of relay flag:

Name of the elements	End 1 Relay Indication	End 2 Relay Indication
220 kV Jorethang - New Melli 1 (Line length 21 km)	Jorethang: R Phase to E/F, Z-I, 7.14 km	New Melli end is yet to be received
220 kV Jorethang - New Melli 2 (Line length 21 km)	Jorethang: Phase to E/F, Z-I, 7.2 km	New Melli end is yet to be received
220 kV Rangpo - Tashiding S/C (Line length 46 km)	Rangpo: R-N, 22.56 km, 4.2 kA, A/R successful	Tashiding: Tripped but no detail received.
220 kV Tashiding -New Melli S/C (Line length 18 km)	Tashiding: Tripped but no Detail received.	No Tripping
220 kV Rangpo - New Melli S/C (Line length 22 km)	Rangpo: R phase to E/F, Fault loc: 22.81 km, If: 6.47 kA, A/R successful	New Melli: R phase to E/F, Fault loc: 5.73 km, If: 1.13 kA, A/R successful

6) Restoration:

- 220 kV Jorethang - New Melli D/C was restored at 20:47 and 20:51 hrs respectively
- 220 kV Rangpo - Tashiding S/C was restored at 21:11 Hrs
- 220 kV Tashiding - New Melli S/C was restored at 21:03 Hrs

7) Analysis:

Event after constant perusal from ERLDC, no DR/EL has been made available from New Melli and Rangpo. Jorethang and Tashiding have sent their event logger however, that is not readable due to non-standard format. The event has been analyzed based on Preliminary information in real time and PMU plot.

From 400 kV Binguri Bus voltage from PMU (Ref Fig 2), only one fault was observed in R phase at 20:36:20.080 hrs which got cleared within 100 ms. Based on the information, it is assumed that the fault was on 220 kV Jorethang - New Melli D/C. However, at the same time, 220 kV Rangpo - Tashiding S/C and 220 kV Tashiding –New Melli circuit have tripped from Tashiding end. Further, 220 kV Rango-New Melli circuit has performed successful A/R from Rangpo end for this fault.

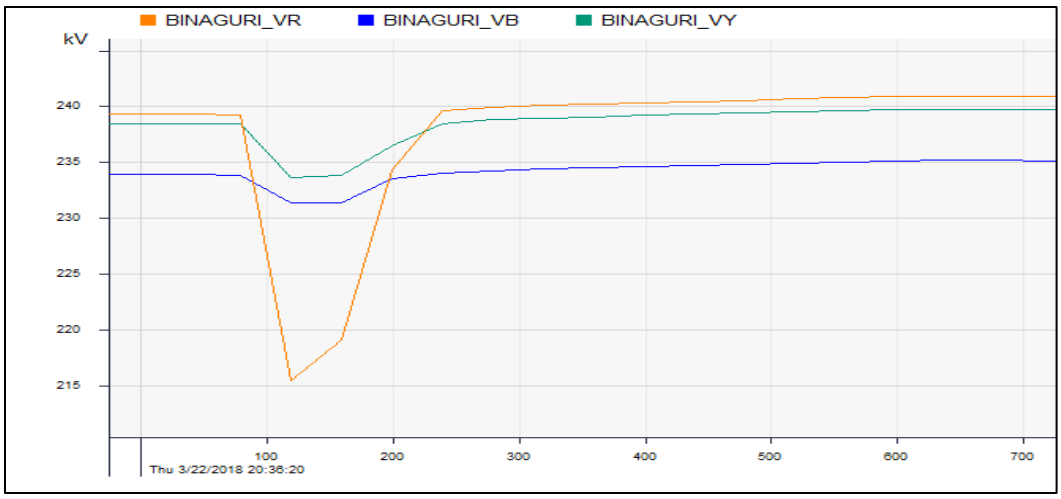

Figure 2: 400 kV Bus voltage at Binaguri indicating the fault during the disturbance

The above Information reveals the following issues:

1. Relay setting of 220 kV Rango-New Melli S/C and 220 kV Rangpo-Tashiding ckt overreached for the fault of 220 kV Jorethang-Melli D/C from Rangpo End.
2. 220 kV Tashiding-New Melli also tripped from the Tashiding end on observing fault in reverse direction.
3. No Auto-Reclosure on 220 kV Jorethang-New Melli circuits from both ends and 220 kV Tashiding - New Melli from Tashiding end are observed.

B. Date / Time of disturbance: 26-03-18, 17:19 hrs

1) **Summary of the incident:** At 17:19 hrs, 220 kV Tashiding - Rangpo S/C and 220 kV Tashiding - New Melli (did not trip at New Melli end) S/C tripped at the Tashiding end due to Y-N fault resulting blackout of 220 kV Tashiding power plant. However, no generation loss has occurred due to no generation at Tashiding generating station.
2) **Category : -** GD -1
3) **Quantum of load/generation loss:** Nil
4) **Major elements tripped:**
    a. 220 kV Rangpo - Tashiding S/C
    b. 220 kV Tashiding - New Melli S/C
5) **Details of relay flag:**

Name of the elements	End 1 Relay Indication	End 2 Relay Indication
220 kV Rangpo - Tashiding S/C (Line length 46 km)	Rangpo end: DT receipt	Tashiding end: Y Phase to E/F, Z-1, Fault location: 9.67 km, If : 1.62 kA
220 kV Tashiding -New Melli S/C (Line length 18 km)	Tashiding end: Y Phase to E/F, Z-1, 4.6 kA	N. Melli end: No tripping

6) **Restoration**

- 220 kV Rangpo - Tashiding S/C was restored at 17:53 hrs
- 220 kV Tashiding - New Melli S/C was restored at 17:47hrs

7) Analysis:

Again, for this event also, No DR/EL was shared by the Tashiding end. Based on the flash report of ERLDC control Room and PMU plot it has been analyzed.

From 400 kV Binaguri Bus voltage from PMU (Ref Fig 3), only one fault was observed in Y phase at 17:19:12.760 hrs which got cleared within 100 ms. Based on relay indication, it is observed that fault was on 220 kV Rangpo-Tashiding circuit.

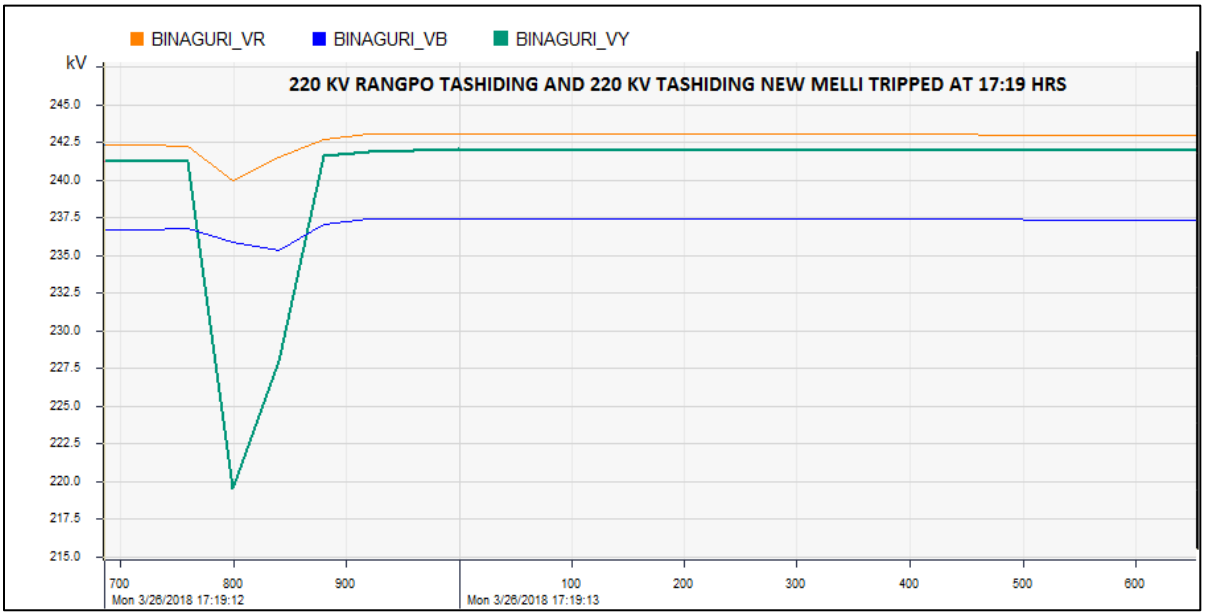

Figure 3:400 kV Bus voltage at Binaguri indicating the Y phase fault during the disturbance

The above Information reveals the following issues:

1. The reason for direct trip being sent to Rango end for 220 kV Rangpo-Tashiding ckt by Tashiding end was not desirable.
2. 220 kV Tashiding-New Melli also tripped from Tashiding end on observing fault in reverse direction.
3. No Auto-Reclosure on 220 kV Rangpo-Tashiding and 220 kV Tashiding -New Melli from Tashiding end are observed.

As per information received, the fault was on 220 kV Rangpo - Tashiding S/C and 220 kV Rangpo - New Melli S/C as per available relay indication. POWERGRID/Tashiding/ JLHEP may share the exact location of the fault in the circuit.

<u>Over all from both the events, following issues need immediate attention:</u>

1. What was the reason of fault on these circuits? **PGCIL ERTS-2 /Tashiding/ JLHEP May kindly respond with details.**
2. Issue of the direct trip from Tashiding end to Rangpo end. **Tashiding/PGCIL ERTS-2 may kindly respond.**
3. Issue of overreaching of distance protection from 220 kV Rango substation. **PGCIL ERTS-2 may kindly respond.**

4. Issue of the non-directional trip of 220 kV Tashiding-New Melli circuits. **Tashiding may kindly respond.**
5. No Auto-Reclosure on 220 kV Rangpo-Tashiding and 220 kV Tashiding -New Melli from Tashiding end and 220 kV Jorethang-New Melli circuits from both ends. **PGCIL ERTS-2 /Tashiding/ JLHEP May kindly respond with details.**
6. No DR/EL are being received from the PGCIL ERTS-2/Tashiding/JLHEP substation violating the IEGC 5.2.r and CEA grid standard 15.3. Tashiding/JLHEP have sent event logger, however, those are not readable as differ from standard event logger. **PGCIL ERTS-2 /Tashiding/ JLHEP May kindly respond with details.**

Over all Non-Compliance of regulation observed from the utilities during both the events:

Issues	Regulation Non-Compliance	Utility
DR/EL not provided within 24 Hours	1. IEGC 5.2 (r) 2. CEA grid Standard 15.3	**PGCIL ERTS-2, JLHEP, Tashiding** (EL received from JLHEP & Tashiding but not in standard format)
Non-Submission of Details for the tripping which is required for appropriate analysis for GD/GI	1. IEGC 5.2 (r), 5.9.6.c (VI) 2. CEA grid Standard 15.3 3.CEA (Technical standards for connectivity to the Grid) Regulation, 2007-6. 4.d	**PGCIL ERTS-2, JLHEP, Tashiding**
Single phase A/R in transmission lines at 220 kV and above levels is not present/enable	1. CEA Technical standards for construction of electric plants and electric lines –Clause 43(4) (c). 2. CEA Transmission Planning Criteria	**PGCIL ERTS-2, JLHEP, Tashiding**
Incorrect/ mis-operation / unwanted operation of Protection system	1. CEA Technical Standard for Construction of Electrical Plants and Electric Lines: 43.4 .A. 2. CEA (Technical standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)	**PGCIL ERTS-2, JLHEP, Tashiding**

Remedial Measures to be taken:

- It has been observed that DR in comtrade format is not being received from PGCIL ERTS-2/JLHEP/Tashiding HEP for all the major events resulting in non-compliance of regulations by CERC and CEA. Further, in the absence of details, the analysis is also incomplete. This is not desirable from grid security point of view. **In view of the above JLHEP/Tashiding HEP/POWERGRID are advised to find out the root cause of repeated multiple tripping at 220 kV JLHEP – New Melli – Tashiding – Rangpo section and to ensure submission of DR (in comtrade format)/EL for any line tripping incident within 24 hours to ERLDC as per IEGC and CEA Grid Standard to facilitate the detailed analysis for the events.** The details should be sent to the following email id: erldcprotection@posoco.in

- Along with these major five issues have been highlighted in this report. **PGCIL ERTS-2/Tashiding and JLHEP must immediately take action on these issues to improve the reliability in the area**. **After taking remedial action, communication may also be given to ERLDC/ERPC.** Important tripping incidents occurred in the month of March, 2018 in this corridor are as follows:

LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	Reason
220KV TASHIDING-RANGPO-SC	09-03-18	17:22	09-03-18	18:06	R-Y-N FAULT
220KV TASHIDING-RANGPO-SC	12-03-18	13:22	12-03-18	14:05	R-Y Fault
220KV NEW MELLI-JORETHANG-I	22-03-18	20:38	22-03-18	20:47	TRIPPING AT JORETHANG ONLY
220KV JORETHANG-NEW MELLI-II	22-03-18	20:38	22-03-18	20:51	TRIPPING AT TASHIDING ONLY
220KV TASHIDING-RANGPO-SC	26-03-18	17:19	26-03-18	17:53	Y-N Fault
220KV NEW MELLI-TASHIDING-SC	26-03-18	17:19	26-03-18	17:47	Y-N Fault
220KV NEW MELLI-JORETHANG-I	30-03-18	17:45	30-03-18	17:47	B-N FAULT
220KV TASHIDING-RANGPO-SC	30-03-18	17:50	30-03-18	17:50	B-N FAULT
220KV NEW MELLI-TASHIDING-SC	30-03-18	17:50	30-03-18	17:50	B-N FAULT
220KV NEW MELLI-TASHIDING-SC	31-03-18	13:09	31-03-18	13:16	Y-N FAULT

List of important transmission lines in ER which tripped in March 2018

S.NO	LINE NAME	TRIP DATE	TRIP TIME	RESTORATION DATE	RESTORATION TIME	Relay Indication LOCAL END	Relay Indication REMOTE END	Reason	Fault Clearance time in msec	Remarks
	Multiple tripping at the same time									
1	400KV BAHARAMPUR-SAGARDIGHI-II	15-03-2018	20:05	15-03-2018	20:25	Did not tripped		TRIPPED FROM SAGARDIGHI END ONLY	--	Fault not observed in PMU data
2	400KV FSTPP-BAHARAMPUR-SC	15-03-2018	20:05	15-03-2018	21:42	Did not tripped		TRIPPED FROM SAGARDIGHI END ONLY	--	Fault not observed in PMU data
3	132KV RANGPO-MELLI-SC	22-03-2018	18:03	22-03-2018	18:26	R_Y,2.6 KM,R-1.67 KA;Y-1.56 KA		R-Y FAULT	<100	
4	132KV MELLI-SILIGURI-SC	22-03-2018	18:03	22-03-2018	18:43	R_Y,104.9 KM,Z2,R-1.43 KA,Y-1.29 KA		R-Y FAULT	<100	
5	220KV TASHIDING-RANGPO-SC	30-03-2018	17:50	30-03-2018	17:50	B_N;Z-1,27.28 KM,1.356 KA	Did not tripped	B-N FAULT	--	
6	220KV NEW MELLI-TASHIDING-SC	30-03-2018	17:50	30-03-2018	17:50		Z1,B_N,9.926 KM,1.653 KA	B-N FAULT	--	
7	220KV ATRI-PANDIABILI-II	31-03-2018	18:48	31-03-2018	19:21	86 RELAY OPERATED		86 RELAY OPERATED AT ATRI	<100	
8	220KV PANDIABILI-SAMANGARA-I	31-03-2018	18:48	31-03-2018	19:43	R-N fault, f/c=1.1 KA		R-N FAULT	<100	
	Miscellaneous: Tripping on DT, No reason furnished, No Fault observed in PMU									
9	400KV RANCHI-SIPAT-I	07-03-2018	7:09	07-03-2018	7:33	DT RECEIVED		DT RECEIVED AT RANCHI	--	Fault not observed in PMU data
10	765KV NEW RANCHI-DHARAMJAIGARH-I	12-03-2018	16:56	12-03-2018	20:30	DT RECEIVED		DT RECEIVED AT NEW RANCHI	--	Fault not observed in PMU data
11	220KV ATRI-PANDIABILI-II	20-03-2018	12:26	20-03-2018	12:51	MASTER TRIP RELAY OPERATED	Did not tripped	MASTER TRIP RELAY OPERATED AT ATRI	--	Fault not observed in PMU data
12	220KV PUSAULI-NADHOKAR-SC	26-03-2018	0:30	26-03-2018	0:53	Transient Fault, Distance trip		Distance protection at Pasuali	--	Fault not observed in PMU data
13	400KV DARBHANGA (DMTCL)-MUZAFFARPUR-I	26-03-2018	18:31	26-03-2018	19:06		DT received	DT received at Muzaffarpur	--	Fault not observed in PMU data
14	220KV ATRI-PANDIABILI-II	28-03-2018	11:58	28-03-2018	12:22	86 a b operated, carrier received	DT received	DT received at Pandialili	--	Fault not observed in PMU data
15	220KV NEW MELLI-JORETHANG-I	30-03-2018	17:45	30-03-2018	17:47	Did not tripped	831.4 A,ZONE 1,B-N,1.749 KM	B-N FAULT	--	Fault not observed in PMU data
	No Autoreclose operation observed in PMU data									
16	400KV BINAGURI-NEW PURNEA-I	06-03-2018	13:14	06-03-2018	13:31	B-N , 30KM , 5 KA		B-N FAULT	< 200	No autoreclose operation observed in PMU data
17	400KV MOTIHARI-BARH-II	19-03-2018	11:26	19-03-2018	11:53	B-N, 4.33 KA, DIST 22.3	B-N,219 KM, 1.6 KA	B-N FAULT	<100	No autoreclose operation observed in PMU data
18	400KV MEERAMUNDALI-STERLITE-I	19-03-2018	11:30	19-03-2018	17:56	B-N, 174.2 KM, 2.24 KA		B-N FAULT	<100	No autoreclose operation observed in PMU data
19	400KV JHARSUGUDA-ROURKELA-II	20-03-2018	12:58	20-03-2018	13:44	R-N, 48. km, 5.7kA	R-N, 72 km, 3.11 kA	R-N FAULT	<100	No autoreclose operation observed in PMU data
20	400KV MALDA-NEW PURNEA-I	23-03-2018	6:49	23-03-2018	7:20	B-N, 63.48 KM,	B-N, 74.81 KM, 3.78 KA	B-N FAULT	<100	No autoreclose operation observed in PMU data

MINUTES OF MEETING BETWEEN POWERGRID (HVDC SASARAM) AND GE T&D INDIA LTD.

Date: 14/10/17

Members Present:

GE T&D INDIA LTD.

Mr. Sunil Joshi

POWERGRID

Mr. Sunit Kumar Singh

Mr. D.S. Karthik

Mr. Aman Kumar

M/s GE T&D repersentative reported at Sasaram site on 11.10.2017 to analyse the long pending issues related to HVDC Back to back to Station.

SL NO	ISSUE	Comment
1	**Converter control and Protection: Software issues** a. Control System SYS fail, Independent booting, frequent failure of compact flash cards, Profibus signals updating problems are still persisting. The problem is yet to be resolved. b. Spurious tripping of HVDC pole showing switchyard connectivity lost during opening of any bay connected to HVDC system. c. All AC harmonic filters/ Line reactors become unavailable after resetting of lane inspite of availability of same. d. Only one APEX PC is running, need stand by APEX PC available	a. GE to analyse sysfail logs and revert. b. Switchyard connectivity tripping test done and found that HVDC is blocking upon opening of CWD50Q50 breaker. GE to check the logs and revert. Scheme generally blocks after any breaker open command. c. GE to check the logs and revert. d. New Apex PC has been configured. Issue resolved.
2	**Supply of Spare Control and Protection card as per modified hardware architecture.** The card supplied as spare is for old type of installed cards architecture, which has been modified by GE. So spares cards for C&P panel should be changed as per new modified card architecture. 04 nos. Cards (02 nos. CIBS, 01no. Pentium and 01 no. PMC251) taken by GE in April-2014 for repairing is yet to be returned. Required spare configured compact flash cards as the rate of card corruption is very high (Once in a two month).	GE to check and update the status of cards taken in 2014. Spare cards urgently required at site. Failure rate of compact flash card is very high (15 card fail/year on an average). GE to urgently provide 10 no. pre-configured compact flash cards and procedure to configure new flash card.
3	**HVDC controls and Protection Lane-1 is out of order since long time.** Both the Lane has never worked simultaneously since commissioning and HVDC block is running only through Lane-2	One PMC card found defective on Side B Lane-1 M2 subrack (L1SBM2). Card has been replaced with spare PMC card and Lane is now not having any sys fail and VBE protection also reset.

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	Both the Lane has never worked simultaneously since commissioning and HVDC block is running only through Lane-2 from April-2014 without any redundancy. Also in Lane-2 intermittent problems are observed during running and at the time of re-start corruption of compact flash cards. M/s GE has done many up gradation of software but system is not yet satisfactory.	has been replaced with spare PMC card and Lane is now not having any sys fail and VBE protection also reset. One Pentium card(VMIC 7740) found defective on Side A Lane-1 control subrack(L1SACP1). The P1 of control (Side A Lane-1) is also showing "Interrupt VME bus coupler error" inspite of replacing faulty card with healthy card from M1 subrack. subrackSpare card is not available at site. Lane redundancy test can only be done after replacing Side A Lane-1 control subrack VMIC 7740 card.
4	**Malfunctioning/failure of VBE cards** Problem persisting since commissioning. GE is yet to provide the solution.	S5004 is getting failed very frequently(2 card failure/year). GE to check and revert.
5	**Converter Transformer issue** None of the Hydran transformer gas monitoring system and Drycol breather in operation condition. Matter taken up with GE from 2006 and matter not resolved. Converter transformer WTI/OTI unit is not working properly. GE to provide compatible replacement.	GE to check and revert.
6	**Pending contractual tests:** Auto reclose test on inverter side with both line available, and one line available and system isolation test with one line available at inverter side. It was committed during September 2010 that AREVA shall conduct these tests in 3 months but still pending	GE to check and revert.
7	**Long term spares** AREVA has been requested to give quotation for long term spares but the quotation is yet to be received.	GE to check and revert.
8	**Valve cooling PLC B problem** Reported to M/s AREVA on 18.07.2011. Alarm from PLC B of Valve cooling is continuously being reflected in SCADA. The alarms are "Valve cooling PLC B Fuse failed", "Valve cooling PLC B operation error". GE committed in MOM dtd 13.12.11 to provide the same, not provided. PLC software has not been provided by M/s GE.	GE to provide PLC software application of valve cooling system.

9	**Addition of newly commissioned line in Eastern Side to HVDC system** Earlier HVDC Back to back system is connected through only two 400 KV transmission lines namely Biharshariff-I &II in Eastern Side. Now the connectivity in eastern bus is extended with 1500 MVA, 765/400 KV ICT, 400 Kv S/c Varanasi and one D/C 400Kv Line Nabinagar-I &II. Integrated for last feeder protection to be done.	Details have been provided to GE by PGCIL. GE to check and revert.
10	**Breaking of System Docking Station (RTU) from their base unit due to brittleness of material used** The SDS is breaking from their base plate due to the excessive brittleness of fibre/ plastic installed in Bay Interface Outstations (BIOS) panels.	Defective RTU can not be repaired. RTU upgrade is required.
11	**Failure of DC-DC converters** All 12 nos. 220 V, DC-DC converters and 02 nos. 48 V DC-DC converters have been failed.	Power supply to be replaced with new power supply.

POWERGRID raised their concern to resolve the above long pending issues and requested to take necessary action for rectification of converter control and protection issues immediately.

POWERGRID also requested to assign single contact person to discuss technical issues in the intermittent period till the final resolution of aforesaid problems.

GE to check all above-mentioned issues and revert detailed plan within 3 weeks.

Checklist for Submission of new transmission elements for updation in Protection Database

NAME OF ORGANISATION:
FOR THE MONTH OF:

SUBSTATION DETAIL:

Sl No	DETAILS OF ELEMENTS	DATA TYPE	Status of Submission (Y/N)	Remarks
1	TRANSMISSION LINE	LINE LENGTH, CONDUCTOR TYPE, VOLTAGE GRADE		
2	POWER TRANSFORMER	NAMEPLATE DETAILS		
3	GENERATOR	TECHNICAL PARAMETERS		
4	CURRENT TRANSFORMER	NAMEPLATE DETAILS		
5	VOLTAGE TRANSFORMER	NAMEPLATE DETAILS		
6	RELAY DATA	MAKE, MODEL and FEEDER NAME		
7	RELAY SETTINGS	NUMERICAL RELAYS: CSV or XML file extracted from Relay ELECTROMECHANICAL RELAYS: SNAPSHOT of RELAY		
8	REACTOR	NAMEPLATE DETAILS		
9	CAPACITOR	NAMEPLATE DETAILS		
9	UPDATED SLD			

SIGNATURE:
NAME OF REPRESENTATIVE:
DESIGNATION:
CONTACT:
E-MAIL ID: