



सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
पूर्वी क्षेत्रीय विद्युत समिति

Eastern Regional Power Committee
14, गोल्फ क्लब रोड, टॉलीगंज, कोलकाता-700033
14 Golf Club Road, Tollygunj, Kolkata-700033



Tel No.:033-24235199, 24235005 FAX No.:033-24221802, 24221358 Web: www.erpc.gov.in

NO. ERPC/PROTECTION/2016-17/

DATE: 03.05.2017

FAX MESSAGE NO. -

To,

As per list enclosed.

Sub: Notice for 55th Protection Coordination sub-Committee (PCC) meeting of ERPC

Notice is hereby given that **55th PCC meeting** of ERPC will be held on **25th May 2017 (Thursday)** at 11: 00 hrs at **ERPC Conference Room, Kolkata.**

The tentative agenda items for discussion will be as follows:

- 1) Confirmation of the minutes of 54th Protection sub-Committee Meeting of ERPC
- 2) Follow-up action on decision of previous Protection sub-Committee Meetings
- 3) Analysis of following grid disturbances of April, 2017:
 - Disturbance at 220 kV Ramchandrapur S/s (JUSNL) on 02-04-17 at 19:01 hrs.
 - Disturbance at 220 kV Chandil S/s (JUSNL) on 05-04-17 at 15:52 hrs.
 - Disturbance at 400/220kV Biharsharff S/s (PG) on 09-04-17 at 18:49 hrs.
 - Disturbance at 220 kV Chandil S/s (JUSNL) on 13-04-17 at 14:05 hrs.
 - Tripping of 220 kV Muzaffarpur - Hazipur D/C line on 13-04-17 at 15:03 hrs.
 - Tripping of 132 kV Chujachen - Gangtok S/C and 132 kV Rangpo Gangtok S/C lines on 15-04-17 at 08:48 hrs.
 - Repeated disturbances at 400kV Dharbhanga S/s on 18-04-17 at 12:35 Hrs, 19-04-17 at 22:56 Hrs, 20-04-17 at 04:54 Hrs, 20-04-17 at 15:27 Hrs and on 24-04-17 at 09:42 Hrs.
 - Tripping of 400 kV HEL - Subhasgram D/C and 220 kV CESC - Subhasgram - I on 22-04-17 at 20:04 Hrs.
 - Disturbance at 220/132 kV Lakhikantapur S/s (WBSETCL) on 26-04-17 at 16:16 Hrs.
 - Disturbances at 400/220 kV Biharsharff S/s (PG) on 26-04-17 at 20:24 Hrs and on 28-04-17 at 00:02 Hrs.
 - Tripping of 400 kV Teesta III - Dikchu S/C and 400 kV Teesta III - Rangpo S/C on 29-04-2017 at 15:57 Hrs.
 - Disturbance at 220 kV Bodhgaya S/s (BSPTCL) on 29-04-2017 at 20:38 Hrs.
- 4) Multiple elements tripping without load loss:
 - Disturbance at 765 kV Jharsuguda (PG) S/s on 19-04-17 at 15:45 Hrs.
 - Disturbance at 400 kV Meramundali (OPTCL) S/s on 21-4-17 at 20:17 Hrs.

5) Single line tripping incidences as per list enclosed at **Annexure-I**.

You are requested to kindly furnish the detail report along with all records (SLD, SOE, DR, Relay and schematic diagram of auxiliary supply, wherever applicable) related to above trippings for meaningful analysis during the meeting.

Your participation in the meeting is highly solicited. Please confirm your participation in the meeting along with name and designation of the participants.

Yours faithfully,

-Sd-

(A. K. Bandyopadhyaya)
Member Secretary

LIST OF ADDRESSES:

| | |
|---|---|
| Chief Engineer, Trans (O&M) Bihar State Electricity Board, Vidyut Bhawan, Bailey Road, Patna-800021 | Electrical Superintending Engineer (CRITL) Bihar State Electricity Board, Vidyut Bhawan, Bailey Road, Patna-800021 |
| Chief Engineer (SLDC) Damodar Valley Corporation, GOMD-I Premises, P.O.- Danesh Sheikh Lane, Howrah- 711109 | Chief Engineer (CTC) Damodar Valley Corporation, P.O. Maithon Dam, Dist. Dhanbad, Jharkhand-828207 |
| Chief Engineer, Trans (O&M) Jharkhand State Electricity Board Kusai Colony, Doranda, Ranchi-834002 | Electrical Superintending Engineer (CLD) Jharkhand State Electricity Board, Kusai Colony, Doranda, Ranchi-834002 |
| Chief General Manager (O&M), OPTCL, Janpath, Bhubaneswar, Odisha – 751 022. FAX: 0674-2542932 cgm.onm@optcl.co.in | Sr. General Manager (PPA), Technical Wing, OHPCL, Orissa State Police Housing & Welfare Corpn. Bldg. Vanivihar Chowk, Janpath, Bhubaneswar-752022 |
| Chief Load Dispatcher, SLDC OPTCL, P.O. Mancheswar Rly. Colony Bhubaneswar-751017 | Chief Engineer (Testing), WBSETCL Central Testing Laboratory, Abhikshan, Salt Lake, Kolkata-700091 (Fax no. 2367-3578/1235) |
| Chief Engineer (CLD) WBSETCL, P.O. Danesh Sheikh Lane, Andul Road, Howrah-711109 | Addl. Chief Engineer (ALDC) West Bengal Electricity Distribution Company Ltd Vidyut Bhavan, 7 th Floor, Bidhannagar, Sector-I Salt Lake City, Kolkata-700091(Fax-033-2334-5862) |
| Dy. Chief Engineer (Testing)/ Sr. Manager (Testing) CESC Ltd.,4, Sasi Sekhar Bose Road, Kolkata-700025 | General Manager (O&M) KhSTPS, NTPC Ltd., P.O. Deepti Nagar, Dist. Bhagalpur, Bihar-813203 |
| General Manager(O&M) FSTPS, NTPC Ltd., P.O. Nabarun, Dist. Murshidabad, West Bengal-742236 | Dy. General Manager (Engineering), WBPDC, OS Dept. Corporate Office, 3/C,L.A Block, Salt Lake-III, Kolkata-700098 (Fax-033-23350516) |
| General Manager (O&M) Barh STPS, NTPC Ltd., P.O. NTPC Barh, Dist. Patna, Bihar-803213 | General Manager (OS), ERHQ-II, NTPC Ltd., 3 rd flr. OLIC Building, Plot no. N 17/2, Nayapalli, Unit-8 Bhubaneswar- 751012 (Fax No. 0674-2540919) |
| General Manager(O&M) TSTPS, NTPC Ltd. P.O.Kaniha, Dist. Angul, Orissa-759117 | General Manager (O&M) POWERGRID, Odisha Projects Sahid Nagar, Bhubaneswar – 751 007 |
| General Manager(OS), ERHQ-I, NTPC Ltd., Loknayak Jaiprakash Bhawan, (2 nd Floor), Dak Bungalow Chawk, Patna-800001 | Director (GM Division) Central Electricity Authority Sewa Bhawan, R. K. Puram, New Delhi-110066 |
| Executive Director (O&M) NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad, Haryana-121003 (Fax-01292272413) | Electrical Superintending Engineer, TTPS, Tenughat Vidyut Nigam Ltd., Lalpania, Dist. Bokaro, Jharkhand-829149 |
| Dy. General Manager (Electrical) IB Thermal Power Station, OPGCL Banhapalli, Dist. Jharsuguda-768234, Orissa | General Manager (OS), ER-I Power Grid Corporation of India Ltd., Alankar Place, Boring Road, Patna-800001 |
| Chief Engineer (Trans.) Power Deptt., Govt. of Sikkim, Gangtok-731010 | Sr. Manager (CTMC) Durgapur Projects Limited, Durgapur-713201 |
| General Manager, ERLDC, POSOCO 14, Golf Club Road, Tollygunge, Kolkata-700033 | Manager (Electrical), Adhunik Power & Natural Resources Ltd. “Lansdowne Towers, Kolkata-700020 (Fax No. 033-2289 0285) |
| General Manager (OS), ER-II Power Grid Corporation of India Ltd., J-I-15, Block-EP, Sector-V, Salt Lake, Kolkata-91 | Shri A.K.Nayak/Shri Sumit S Ghosh Maithon Power Limited, Maithon Office, MA 5 Gogna, Dist. Dhanbad, Jharkhand State, PIN-828207 |
| General Manager (P&O), PTC Ltd., Kanchanjunga Bldg., 18, Barakhamba Road, New Delhi-110001 | Vice President, Vedanta Ltd. 1 st Floor, Module C/2, Fortune Tower, C S Pur, Bhubaneswar- 751023 |
| Managing Director, Bhutan Power Corporation Post Box no. 580, Thimpu, Bhutan. | Managing Director, Druk Green Power Corpn. P.O. Box-1351, Thimpu, Bhutan. |
| Darbhangha(Bihar), Darbhanga Motihari Transmission Company Limited (DMTCL) | Head Construction, ENCIL, Siliguri-7340051 |

| S.NO | LINE NAME | TRIP DATE | TRIP TIME | RESTORATION DATE | RESTORATION TIME | Reason | Fault Clearance time in msec | Relay Indication LOCAL END | Relay Indication REMOTE END | Auto Recloser status | DR/EL received within 24 Hrs | DR/EL received after 24 Hrs | Remarks |
|---|---|-----------|-----------|------------------|------------------|-----------------------------------|------------------------------|---|---|---|------------------------------|-----------------------------|---|
| Fault clearing time is violating protection standard (As per PMU data) | | | | | | | | | | | | | |
| 1 | 220KV PATRATU - TENUGHAT | 02.04.17 | 11:07 | 02.04.17 | 13:47 | Y-N FAULT | 350 ms approx | Y-N, Z-II | Y-N, Z-I, 43.67 km from TVNL, F/C 4.9 kA | No autoreclose operation observed in PMU data | No | Yes | Tenughat unit I also tripped at same time on operation of Y phase differential class A |
| 2 | 220 KV PTPS - HATIA D/C | | | 02.04.17 | 13:48 | Y-N FAULT | 350 ms approx | Information yet to be received | Information yet to be received | No autoreclose operation observed in PMU data | No | No | |
| 3 | 400KV BIHARSHARIF-SASARAM-I | 05.04.17 | 13:03 | 05.04.17 | 20:24 | B PHASE LA FAILURE AT SASARAM END | 500 ms approx | B-N, Z-II, F/C 2.29 kA, F/D 222.1 km, Carrier not received, Main was CB | B-N, Z-I, F/C 7.94 kA, 100 m from Sasaram | No autoreclose operation observed in PMU data | No | No | |
| 4 | 220KV WARIA - BIDHANGANAR-I | 11.04.17 | 10:24 | 11.04.17 | 17:11 | R-PHASE LA BLAST AT BIDHANNAGAR | 350 ms approx | R-N, Z-II | R-N, Z-I | No autoreclose operation observed in PMU data | No | No | |
| 5 | 400KV MERAMUNDALI-STERLITE-II | 22.04.17 | 12:44 | 22.04.17 | 17:39 | B-N FAULT | 200 ms approx | B-N, 125 km from Meramundali | Information yet to be received | No autoreclose operation observed in PMU data | No | No | Main bay of 400 kV Meramundali - Angul - I at Meramundali end was out of service and the line was charged through tie bay of 400 kV Meramundali -SEL- II. So 400 kV Meramundali - Angul - I tripped after tripping of 400 kV Meramundali -SEL- II |
| 6 | 400KV MERAMUNDALI-STERLITE-II | 26.04.17 | 13:17 | 26.04.17 | 14:20 | B-N FAULT | <100 | Y-N, Z-I, F/C 2.3 kA, 101.5 Km from Mera | Y-N,Z-I, 63.5 Km from SEL, F/C-3.3 KA | No autoreclose operation observed in PMU data | No | No | Main bay of 400 kV Meramundali - Angul - I at Meramundali end was out of service and the line was charged through tie bay of 400 kV Meramundali -SEL- II. So 400 kV Meramundali - Angul - I tripped after tripping of 400 kV Meramundali -SEL- II |
| 7 | 220 KV TENUGHAT - BIHARSHARIF S/C | 29.04.17 | 11:57 | 29.04.17 | 12:44 | R-N FAULT | 1500 ms approx | R-N, Z-I | R-N, Z-I | -- | Yes | No | |
| Multiple tripping at same time | | | | | | | | | | | | | |
| 1 | 400 KV STERLITE-ROURKELA S/C | 02.04.17 | 21:32 | 02.04.17 | 23:43 | Y-B-N FAULT | <100 | Y-B-N, Z-I, F/C 17.68 kA, 17.6 km from SEL | Y-B-N, Z-II, 129 km from RKL, F/C Iy- 3.75kA; Ib- 4.12 kA | -- | Yes | Yes | |
| 2 | 400 KV STERLITE-MERAMUNDALI D/C | | | 02.04.17 | 21:58 | Y-B-N FAULT | <100 | Did not trip | Information yet to be received | -- | -- | No | |

| S.NO | LINE NAME | TRIP DATE | TRIP TIME | RESTORATION DATE | RESTORATION TIME | Reason | Fault Clearance time in msec | Relay Indication LOCAL END | Relay Indication REMOTE END | Auto Recloser status | DR/EL received within 24 Hrs | DR/EL received after 24 Hrs | Remarks |
|---------------------------------------|---|-----------|-----------|------------------|------------------|----------------------------|------------------------------|---|--|---|------------------------------|-----------------------------|---|
| 3 | 400KV JAMSHEDPUR-ADHUNIK-II | 05.04.17 | 15:56 | 10.04.17 | 13:27 | R-N FAULT | <100 | Line differential protection operated at Jamshedpur | DT Received | No autoreclose operation observed in PMU data | No | Yes | R Phase LA failure of 400 kv Adhunik - Jamshedpur - II at Jamshedpur end. Adhunik unit I also tripped at same time |
| 4 | 400KV JAMSHEDPUR-ANDAL-I | | | 05.04.17 | 16:55 | R-N FAULT | <100 | DT received | Did not trip | No autoreclose operation observed in PMU data | No | -- | |
| 5 | 400KV JAMSHEDPUR-CHAIBASA-I | | | 06.04.17 | 9:10 | R-N FAULT | <100 | R-N, Z-I, F/C 18kA, 1km from JMDS | R-N, Z-II, F/C - 2.8 kA, 48.5 km from Chaibasa | No autoreclose operation observed in PMU data | No | No | |
| 6 | 220 MUZAFFARPUR - HAZIPUR - I | 09.04.17 | 12:58 | 09.04.17 | 13:27 | B-N FAULT | <100 | Information yet to be received | Did not trip | No autoreclose operation observed in PMU data | No | -- | |
| 7 | 220 MUZAFFARPUR - HAZIPUR - II | | | 09.04.17 | 13:46 | B-N FAULT | <100 | Information yet to be received | Y-B, Z-I, 22.5 km from Hazipur | No autoreclose operation observed in PMU data | No | Yes | |
| 8 | 400KV TEESTA-3 - RANGPO | 14.04.17 | 23:19 | 15.04.17 | 1:33 | B-N FAULT | <100 | 87C (Differential), DT Received, DEF | DT Received | No autoreclose operation observed in PMU data | Yes | No | |
| 9 | 400KV TEESTA-3 - DIKCHU | | | 15.04.17 | 19:00 | B-N FAULT | <100 | B-N, Z-I, F/D - 14 Km, F/C -3.6 KA | Information yet to be received | No autoreclose operation observed in PMU data | Yes | No | Dikchu unit II also tripped due to loss of evacuation path |
| 10 | 400KV JHARSUGUDA-ROURKELA-I | 18.04.17 | 16:22 | 18.04.17 | 16:36 | R-B FAULT | <100 | Did not trip | R-B, Z-III | -- | -- | No | Fault was at 400 kv Jharsuguda - IBEUL - II |
| 11 | 400KV JHARSUGUDA-ROURKELA-II | | | 18.04.17 | 16:39 | R-B FAULT | <100 | Did not trip | R-B, Z-III | -- | -- | No | |
| 12 | 400 KV FARAKKA - MALDA - I | 20.04.17 | 7:40 | 20.04.17 | 8:15 | Y-N FAULT | <100 | Did not trip | O/V | No autoreclose operation observed in PMU data | -- | Yes | No distance relay picked up at Malda end though F/C was more than 3.6 kA and voltage was less than 120 kV in Y phase |
| 13 | 400 KV FARAKKA - MALDA - II | | | 20.04.17 | 8:42 | Y-N FAULT | <100 | Did not trip | DEF | No autoreclose operation observed in PMU data | -- | Yes | |
| 14 | 400 KV FARAKKA-GOKORONO-I | 30.04.17 | 17:26 | 30.04.17 | 23:05 | R-N FAULT | <100 | VT Fuse Fail | R-N, Z-I, 14.8 KM from Gokarno, F/C 3.5 kA | No autoreclose operation observed in PMU data | No | No | |
| 15 | 400 KV FARAKKA-GOKORONO-II | | | 01.05.17 | 18:30 | R-N FAULT | <100 | VT Fuse Fail | R-N, Z-I, 14.8 KM from Gokarno, F/C 3.5 kA | No autoreclose operation observed in PMU data | No | No | |
| Fault Not observed in PMU data | | | | | | | | | | | | | |
| 1 | 220KV BIHARSHARIFF-TENUGHAT | 03.04.17 | 12:47 | 03.04.17 | 13:41 | E/F | -- | O/C, E/F | E/F, Master Trip | -- | No | Yes | |
| 2 | 220KV KISHANGUNJ (B) - KISHANGUNJ (B) T/C | 03.04.17 | 19:03 | 03.04.17 | 20:20 | LBB OPERATED AT BSPTCL END | -- | LBB Operated | Information yet to be received | -- | Yes | No | |
| 3 | 220KV MUZAFAR-GOPLGUNG - II | 08.04.17 | 12:24 | 08.04.17 | 13:02 | B-N FAULT | -- | Information yet to be received | Information yet to be received | -- | No | No | |
| 4 | 220 KV MUZAFAR-GOPLGUNG - I | 08.04.17 | 12:24 | 08.04.17 | 17:18 | B-N FAULT | -- | Information yet to be received | Information yet to be received | -- | No | No | |
| 5 | 400KV ALIPURDUAR- BONGAIGAON-II | 08.04.17 | 21:51 | 08.04.17 | 22:23 | SPURIOUS TRIPPING | -- | DT Received | Breaker opened at Bongaigaon end during opening of 400 kv Balipara-Bongaigaon - IV | -- | No | -- | Code was issued to open 400 kv Balipara-Bongaigaon - IV. But due to mal operation breaker of 400 kv Alipurduar - Bongaigaon - II opened at Bongaigaon end |
| 6 | 400 KV JEYPORE - GAZUWAKA - II | 17.04.17 | 10:14 | 17.04.17 | 10:23 | SPURIOUS TRIPPING | -- | Information yet to be received | Information yet to be received | -- | No | No | No code was taken from ERLDC for charging of this line |

| S.NO | LINE NAME | TRIP DATE | TRIP TIME | RESTORATION DATE | RESTORATION TIME | Reason | Fault Clearance time in msec | Relay Indication LOCAL END | Relay Indication REMOTE END | Auto Recloser status | DR/EL received within 24 Hrs | DR/EL received after 24 Hrs | Remarks |
|---|---|-----------|-----------|------------------|------------------|-------------------|------------------------------|--|--|---|------------------------------|-----------------------------|--|
| 7 | 220KV DARBHANGA-MOTIPUR-I | 19.04.16 | 15:36 | 19.04.17 | 16:16 | SPURIOUS TRIPPING | -- | LBB Operated | Information yet to be received | -- | No | No | |
| 8 | 400KV GMR-ANGUL-I | 19.04.19 | 16:59 | 19.04.17 | 17:20 | SPURIOUS TRIPPING | -- | DT received | Did not trip | -- | Yes | -- | |
| 9 | 220KV DARBHANGA-MOTIPUR-I | 24.04.17 | 21:32 | 24.04.17 | 22:16 | SPURIOUS TRIPPING | -- | DT received | Information yet to be received | -- | No | No | |
| 10 | 400 KV ALIPURDUAR - BONGAIGAON - II | 25.04.17 | 10:40 | 25.04.17 | 11:05 | SPURIOUS TRIPPING | -- | Information yet to be received | -- | -- | No | -- | Tripping occurred during testing of converter transformer bay of pole - IV at Alipurduar |
| 11 | 400 KV KAHALGAON-LAKHISARAI-II | 30.04.17 | 19:14 | 30.04.17 | 21:51 | SPURIOUS TRIPPING | -- | DT received | Information yet to be received | -- | No | No | |
| No autorecloser operation observed in PMU data | | | | | | | | | | | | | |
| 1 | 400KV JEERAT-BAHARAMPUR | 03.04.17 | 15:40 | 03.04.17 | 16:17 | R-N FAULT | <100 | R-N, Z-I, F/C 2.4 kA, 95 km from Jeerat | R-N, Z-I, F/C 4.21 kA, 61 km from Baharampur | No autoreclose operation observed in PMU data | No | No | |
| 2 | 400 KV PATNA - BARH - IV | 09.04.17 | 13:07 | 09.04.17 | 13:21 | R-N FAULT | <100 | R-N, 0.10 km from Patna, F/C 14.63 kA, A/R successful | R-N, Z - III, F/C 2.9 kA | No autoreclose operation observed in PMU data | No | No | |
| 3 | 400KV BIHARSHARIFF - SASARAM-I | 15.04.17 | 15:02 | 15.04.17 | 15:23 | R-N FAULT | <100 | R-N, Z-I, F/C 4.12 KA, 86.07 KM from BSF | Information yet to be received | No autoreclose operation observed in PMU data | No | No | |
| 4 | 400KV ARAMBAG-KOLAGHAT | 19.04.19 | 20:38 | 19.04.17 | 20:47 | R-N FAULT | <100 | R-N, Z-I, 47.2KM from Arambag | R-N, Z-I, F/C 8.37 kA, 18.25 km from KTHP | No autoreclose operation observed in PMU data | No | Yes | |
| 5 | 400 KV FARAKKA - GOKORNO - II | 19.04.17 | 22:00 | 20.04.17 | 0:04 | R-N FAULT | <100 | R-N, 119.7 KM from FRK, F/C 2.7 KA, A/R blocked at Farakka end | A/R successful at Gokarno end | No autoreclose operation observed in PMU data | Yes | No | 400 kV Farakka - Gokarno - I successfully A/Reclosed at same time |
| 6 | 400 KV HEL - SUBHASGRAM - I | 22.04.16 | 21:18 | 22.04.17 | 21:39 | B-N FAULT | <100 | Information yet to be received | Information yet to be received | No autoreclose operation observed in PMU data | No | No | |
| 7 | 400 KV ARAMBAG - NEW RANCHI | 23.04.17 | 15:19 | 23.04.17 | 15:48 | B-N FAULT | <100 | B-N, Z-I, 192.7 km from Arambag, F/C 1.807 kA | B-N, 75.9 km from New Ranchi, F/C 3.16 kA | No autoreclose operation observed in PMU data | No | No | |
| 8 | 400KV DARBHANGA-MUZAFFARPUR-II | 24.04.17 | 3:06 | 24.04.17 | 4:10 | B-N FAULT | <100 | B-N, 50.12 KM from Darbhanga | Information yet to be received | No autoreclose operation observed in PMU data | No | No | 400/220 KV ICT - I at Darbhanga was hand tripped |
| 9 | 400 KV KODERMA-BOKARO-I | 30.04.17 | 17:38 | 30.04.17 | 18:06 | B-N FAULT | <100 | B-N, Z-I, 20.5 KM from Koderma, F/C 9.9 kA | A/R successful at Bokaro end | No autoreclose operation observed in PMU data | No | No | |
| 10 | 400 KV KOLAGHAT-JEERAT | 30.04.17 | 20:10 | 30.04.17 | 20:42 | Y-N FAULT | <100 | Y_N, Z-I, 109.5 KM from KTHP, F/C 4.08 kA | Y-N, Z-I, 74.5 km from Jeerat, F/C - 3.47 kA, A/R successful at Jeerat end | No autoreclose operation observed in PMU data | Yes | No | A/R successful at Jeerat end |