



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

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NO. ERPC/PROTECTION/2020/ 5703-5746

DATE: 04.11.2020

To,

As per list enclosed,

**Sub: Notice for 96<sup>th</sup> Protection Coordination sub-Committee (PCC) meeting of ERPC**

Sir,

Notice is hereby given that **96<sup>th</sup> PCC meeting** of ERPC will be held on **12<sup>th</sup> November 2020 (Thursday)** from **10:30 hrs** through online Microsoft Teams meeting platform. The meeting link will be forwarded through e-mail or message. You are requested to enter the participant name and designation and organisation name while joining the meeting. The following coordinator may be contacted for any assistance:

Saswat Ranjan Swain, Asst. Director-II, ERPC, Mob: 9337791451, E-mail: [saswatrj123@gmail.com](mailto:saswatrj123@gmail.com)

The tentative agenda items for discussion will be as follows:

- 1) Confirmation of the minutes of 95<sup>th</sup> Protection sub-Committee Meeting of ERPC.
- 2) Analysis of following grid disturbances of October 2020:

| Sr. No<br>(क्रमिक<br>संख्या) | GD/<br>GI<br>जीडी<br>/<br>जी<br>आई) | Date<br>(दिनांक) | Time<br>(समय<br>) | Affected<br>System<br>(प्रभावित<br>क्षेत्र) | Summary<br>(घटना का सारांश)  | Load<br>loss<br>(MW)<br>(भार<br>हानि) | Gen<br>loss<br>(MW)<br>(उत्पाद<br>न हानि) |
|------------------------------|-------------------------------------|------------------|-------------------|---|--|---------------------------------------|---|
| 1                            | GD-1                                | 01-10-<br>2020   | 04:07             | OPTCL                                       | At 04:07 hrs, all the feeders and ICTs connected with 220 kV bus 1 at Meramundali along with bus coupler tripped due to bus fault.   | 280                                   | 0   |
| 2                            | GD-1                                | 01-10-<br>2020   | 14:47             | ISTS  | At 14:47 Hrs, 400 kV Rangpo-Dikchu S/C tripped due to B phase to earth fault leading to tripping of both running units at Dikchu HEP. At the same time, 220 kV Jorethang – New Melli – 2 and 132 kV Rangpo-Chujachen – 2 also got tripped resulting in total power failure at Jorethang and Chujachen HEP. | 0                                     | 269                                       |



|   |      |            |       |       |  |   |     |
|---|------|------------|-------|-------|--|---|-----|
| 3 | GD-1 | 10-10-2020 | 16:10 | OPTCL | At 16:08 hrs, 220 kV Rengali Switchyard (OPTCL) - Barkote S/C and 220 kV Rengali Switchyard (OPTCL)-Tarkera S/C tripped due to R phase to earth fault and B phase to earth fault respectively. At the same time, 220 kV Rengali PH – TSTPP S/C and 220 kV Rengali PH – TTPS S/C and 220 kV Rengali PH – Rengali Switchyard (OPTCL) – 1 tripped on overvoltage from Rengali PH end. Subsequently all the running units at Rengali PH tripped. | 0 | 190 |
| 4 | GD-1 | 30-10-2020 | 13:15 | ISTS  | At 13:15 hrs, 400 kV TEESTA V - Rangpo line- 1 tripped. At the same time, 220 KV Jorethang- New Melli D/C tripped at Jorethang end only resulting in total power failure at Jorethang HEP.   | 0 | 48  |

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. You are also requested to upload the details in on-line tripping incident reporting system implemented in Protection Database Management System [www.erpc-protectiondb.in](http://www.erpc-protectiondb.in).

Your participation in the meeting is highly solicited.

Yours faithfully,

  
(D. K. Bauri)

Superintending Engineer

**LIST OF ADDRESSES:**

|  |  |
|--|--|
| Chief Engineer, Trans (O&M)<br>Bihar State Power Transmission Limited, Vidyut Bhawan, Bailey Road, Patna-800021            | Electrical Superintending Engineer (CRITL)<br>Bihar State Power Transmission Limited, Vidyut Bhawan, Bailey Road, Patna-800021                             |
| Chief Engineer (SLDC)<br>Damodar Valley Corporation, GOMD-I Premises, P.O.- Danesh Seikh Lane, Howrah- 711109              | Chief Engineer (CTC)<br>Damodar Valley Corporation, P.O. Maithon Dam, Dist. Dhanbad, Jharkhand-828207  |
| Chief Engineer, (CRITL)<br>Jharkhand Urja Sancharan Nigam Limited<br>Kusai Colony, Doranda, Ranchi-834002                  | Electrical Superintending Engineer (CLD)<br>Jharkhand Urja Sancharan Nigam Limited,<br>Kusai Colony, Doranda, Ranchi-834002                                |
| Chief General Manager (O&M),<br>OPTCL, Janpath, Bhubaneswar,<br>Odisha – 751 022. FAX: 0674-2542932<br>cgm.onm@optcl.co.in | Sr. General Manager (PPA), Technical Wing,<br>OHPCL, Orissa State Police Housing & Welfare<br>Corpn. Bldg. Vanivihar Chowk, Janpath,<br>Bhubaneswar-752022 |
| Chief Load Dispatcher, SLDC<br>OPTCL, P.O. Mancheswar Rly. Colony<br>Bhubaneswar-751017                                    | Chief Engineer (Testing), WBSETCL<br>Central Testing Laboratory, Abhikshan, Salt Lake,<br>Kolkata-700091 ( Fax no. 2367-3578/1235 )                        |



|  |   |
|--|---|
| Chief Engineer (CLD)<br>WBSETCL, P.O. Danesh Sheikh Lane,<br>Andul Road, Howrah-711109   | Addl. Chief Engineer (ALDC)<br>West Bengal Electricity Distribution Company Ltd<br>Vidyut Bhavan, 7 <sup>th</sup> Floor, Bidhannagar, Sector-I<br>Salt Lake City, Kolkata-700091(Fax-033-2334-5862) |
| Dy. Chief Engineer (Testing)/ Sr. Manager (Testing)<br>CESC Ltd.,4, Sasi Sekhar Bose Road,<br>Kolkata-700025                       | General Manager (O&M)<br>KhSTPS, NTPC Ltd., P.O. Deepti Nagar,<br>Dist. Bhagalpur, Bihar-813203   |
| General Manager(O&M)<br>FSTPS, NTPC Ltd., P.O. Nabarun,<br>Dist. Murshidabad, West Bengal-742236                                   | Dy. General Manager (Engineering),<br>WBPDC, OS Dept. Corporate Office, 3/C, L.A<br>Block,<br>Salt Lake-III, Kolkata-700098 (Fax-033-23350516)  |
| General Manager (O&M)<br>Barh STPS, NTPC Ltd., P.O. NTPC Barh,<br>Dist. Patna, Bihar-803213  | General Manager (OS), ERHQ-II, NTPC Ltd., 3 <sup>rd</sup> flr.<br>OLIC Building, Plot no. N 17/2, Nayapalli, Unit-8<br>Bhubaneswar- 751012 (Fax No. 0674-2540919)                                   |
| General Manager(O&M), TSTPS, NTPC Ltd.,<br>P.O.Kaniha, Dist. Angul, Orissa-759117  | General Manager (O&M), POWERGRID, Odisha<br>Projects, Sahid Nagar, Bhubaneswar – 751 007  |
| General Manager (OS), ERHQ-I, NTPC Ltd.,<br>Loknaya Jaiprakash Bhawan, (2 <sup>nd</sup> Floor),<br>Dak Bunglow Chawk, Patna-800001 | Manager (Electrical), Adhunik Power & Natural<br>Resources Ltd. “Lansdowne Towers, Kolkata-700020<br>(Fax No. 033-2289 0285)  |
| Executive Director (O&M)<br>NHPC Ltd., NHPC Office Complex, Sector-33,<br>Faridabad, Haryana-121003 (Fax-01292272413)              | Electrical Superintending Engineer, TTPS,<br>Tenughat Vidyut Nigam Ltd., Lalpania, Dist. Bokaro,<br>Jharkhand-829149  |
| Dy. General Manager (Electrical)<br>IB Thermal Power Station, OPGCL<br>Banhapalli, Dist. Jharsuguda-768234, Orissa                 | General Manager (OS), ER-I<br>Power Grid Corporation of India Ltd.,<br>Alankar Place, Boring Road, Patna-800001   |
| Chief Engineer (Trans.)<br>Power Deptt., Govt. of Sikkim, Gangtok-731010   | Sr. Manager (CTMC)<br>Durgapur Projects Limited, Durgapur-713201  |
| Executive Director,<br>ERLDC, POSOCO, Tollygunge, Kolkata-700033   | Head Construction, ENCIL, Siliguri-7340051  |
| General Manager (OS), ER-II<br>Power Grid Corporation of India Ltd.,<br>J-I-15, Block-EP, Sector-V, Salt Lake, Kolkata-91          | Shri A.K.Nayak/Shri Sumit S Ghosh<br>Maithon Power Limited, Maithon Office, MA 5<br>Gogna, Dist. Dhanbad, Jharkhand State, PIN-828207   |
| General Manager (P&O), PTC Ltd.,<br>Kanchanjunga Bldg.,18, Barakhamba Road,<br>New Delhi-110001                                    | Vice President, Vedanta Ltd.<br>1 <sup>st</sup> Floor, Module C/2, Fortune Tower, C S Pur,<br>Bhubaneswar- 751023   |
| Managing Director, Bhutan Power Corporation<br>Post Box no. 580, Thimpu, Bhutan.   | Managing Director, Druk Green Power Corprn.<br>P.O. Box-1351, Thimpu, Bhutan.   |
| General Manager, Darbhanga (Bihar), Darbhanga<br>Motihari Transmission Company Limited (DMTCL)                                     | Shri Brajesh Kumar Pande, Plant Head, JITPL.<br>(FAX:011-26139256-65)   |
| Shri D. P. Bhagava, Chief Consultant (O&M), Teesta<br>Urja Limited, New Delhi (FAX:011-46529744)                                   | Director (GM Division), Central Electricity Authority<br>Sewa Bhawan, R. K. Puram, New Delhi-110066   |
| Director (NPC), CEA, NRPC Building, Katwaria<br>Sarai, New Delhi- 110016   | President, Dans Energy Pvt. Ltd, 5th Floor, DLF<br>Building No. 8, Tower-C, Gurgaon - 722002  |
| Director, Shiga Energy Pw. Ltd., 5th Floor, DLF<br>Building No. 8, Tower-C, Gurgaon - 722002                                       | DGM (E&I), HALDIA ENERGY LIMITED, BARIK<br>BHAWAN, KOKATA-700072, FAX: 033-22360955   |

## Annexure A List of important transmission lines in ER which tripped in OCTOBER-2020

| S.NO | LINE NAME                       | TRIP DATE | TRIP TIME | Relay Indication LOCAL END                           | Relay Indication REMOTE END          | Reason    | Fault Clearance time in msec | Remarks   | DR CONFIGURATION DISCREPANCY             | DR/EL RECEIVED FROM LOCAL END | DR/EL RECEIVED FROM REMOTE END |
|------|---------------------------------|-----------|-----------|--|--------------------------------------|-----------|------------------------------|---|--|-------------------------------|--------------------------------|
| 1    | 220KV-JODA-RAMCHANDRAPUR-1      | 10/1/2020 | 21:22     | e/f o/c B_N,1.826 Ka, 106.6 km from ramchandrapur    |                                      | B-N FAULT | 450                          |   |  | NO                            | NO                             |
| 2    | 400KV-FSTPP-KHSTPP-4            | 10/1/2020 | 17:39     | DT received at Khstpp                                |                                      | NO FAULT  | NA                           |   |  | NO                            | NO                             |
| 3    | 400KV-MAITHON-KHSTPP-1          | 10/1/2020 | 15:25     | MAITHON: Y_N, 3.0 KA, 70 Km                          | 68.1 KM, 5.728 kA (KhSTPP)           | Y-N FAULT | <100                         | For single phase fault ,3 phase tripping occurred at maithon end. Auto        |  | YES                           | YES                            |
| 4    | 220KV-JORETHANG-NEW MELLI-2     | 10/1/2020 | 14:47     | Tripped from Jorethang end only                      |                                      | NO FAULT  | 1600                         | Line tripped while sensing the fault in 400 KV Rangpo-Dikchu High resistive   |  | YES                           | YES                            |
| 5    | 400KV-RANGPO-DIKCHU-1           | 10/1/2020 | 14:47     | B_N, 19 KM, 4.9 kA (Rangpo)                          |                                      | B-N FAULT | 1600                         | fault, tripped after 1.5 seconds from dikchu on DEF operation. DEF            |  | YES                           | YES                            |
| 6    | 400KV-RANGPO-DIKCHU-1           | 10/1/2020 | 19:49     | Rangpo: B_N, 25.25 KM, 7.5 kA) A/R SUCCESSFUL        |                                      | B-N FAULT | 200                          | A/R operated successfully from Rangpo end in 400 KV Rangpo-Dikchu line due to |  | YES                           | YES                            |
| 7    | 220KV-NEW PURNEA-MADHEPURA-2    | 10/1/2020 | 13:24     | NP: B_N, 3.18 kA, 45 KM, A/R successful              | MADHEPURA: Z1, B_N, 2.02 KA, 50.8 KM | B-N FAULT | <100                         | A/R successful at Purnea end only, No A/R at Madhepura.                       | DR time frame not sufficient at Madepura | YES                           | YES                            |
| 8    | 220KV-ALIPURDUAR (PG)-BIRPARA-2 | 10/1/2020 | 10:16     | ALP: R-N,5.7KA, 11.97Km                              | BIRP: R_N, 1.8 KA, 38.45 Km          | R-N FAULT | <160                         |   |  | NO                            | NO                             |
| 9    | 220KV-KHAGARIA-NEW PURNEA-2     | 10/2/2020 | 3:10      | R-N FAULT, 2.1 KA, 84.2 KM (PURNEA), A/R SUCCESSFULL | 16.9 KM (KHAGARIA END)               | R-N FAULT | <160                         | A/R successful at Purnea end only, No A/R at Khagaria.                        |  | NO                            | NO                             |

|    |                                      |           |       |  |                                  |           |      |  |   |     |     |
|----|--------------------------------------|-----------|-------|--|----------------------------------|-----------|------|--|---|-----|-----|
| 10 | 220KV-KISHANGANJ(PG)-DALKHOLA (PG)-1 | 10/3/2020 | 16:17 | Dalkhola(PG): R-Y-N,Z1,FD 20.34KM,IR 10.9KA,IY 5.772KA               | GANJ: R-Y-N,Z1,FD                | R-Y FAULT | <160 | Pilot insulator string (loc no 01) broken from R phase | Voltage and current channels are interchanged in  | YES | NO  |
| 11 | 220KV-JODA-RAMCHANDRAPUR-1           | 10/3/2020 | 15:24 | JodaDP: Zone-I Y-B, FD 108.4KM, FC 1.97KA (Y ph.) and 1.85KA (B ph.) | Z1,FD 16.32KM,FC 1y 10.33KA,Ib   | Y-B FAULT | <160 |  | CB STATUS in DR at both end not available .       | YES | YES |
| 12 | 220KV-ATRI-PANDIABILI-2              | 10/3/2020 | 13:39 | Pandiabili B-N,FD 4.1Km,FC 5KA                                       | ATRI: NOT TRIPPE D               | B-N FAULT | 500  |  |   | NO  | NO  |
| 13 | 400KV-MENDHASAL-PANDIABILI-1         | 10/3/2020 | 13:37 | DT received at Pandiabili end  |                                  | NO FAULT  | <100 |  |   | NO  | NO  |
| 14 | 220KV-ATRI-PANDIABILI-1              | 10/3/2020 | 13:39 | Pandiabili A/R successful  | ATRI: B-N, 26KM                  | B-N FAULT | 500  | Pandiabili A/R successful                              |   | NO  | NO  |
| 15 | 400KV-BIHARSARIF(PG)-PUSAULI-1       | 10/3/2020 | 12:15 | B'sariff: R-N,FD 112.6Km,FC 3.642                                    | Sasaram: R-N,FD 90.63KM,FC 3.8KA | R-N FAULT |      | At Pusauli end no A/R operation occurred?              |   | YES | YES |
| 16 | 220KV-NEW PURNEA-MADHEPURA-1         | 10/4/2020 | 14:00 | R-N FAULT, Z1 , IR- 3.92KA & dist- 16.3 km                           |                                  | R-N FAULT | <100 | A/R successful at Purnea end                           |   | YES | YES |
| 17 | 220KV-BUDHIPADAR-KORBA-2             | 10/4/2020 | 12:20 | F.D = 31.1 Kms, B-N, Ib = 3.24 KA                                    |                                  | B-N FAULT | <100 | No a/r operation observed .                            | DR needs to be configured as per ERPC philosophy. | YES | NO  |
| 18 | 400KV-PPSP-BIDHANNAGAR-1             | 10/4/2020 | 11:58 | R-ph, E/F, Zone-1, dist-15.5KM, If-11.15KA at Durgapur end           |                                  | R-N FAULT | <100 | No A/r at PPSP end.                                    | DR needs to be configured as per ERPC philosophy. | NO  | YES |
| 19 | 220KV-DARBHANGA (DMTCL)-DARBHANGA-2  | 10/4/2020 | 11:26 | Y-B Fault, Fault current: Y- 3.175 KA, B- 2.867 KA ZONE-1            |                                  | Y-B FAULT | <100 |  |   | NO  | NO  |
| 20 | 220KV-DALTONGUNJ-GARWAH (NEW)-1      | 10/5/2020 | 17:10 | R-N, 13.52 km from Daltongunj F/C 4.16 KA                            | R-N, Zone-1, FC 1.56 Ka          | R-N FAULT | <100 |  |   | YES | YES |

|    |                                  |           |       |   |  |           |      |   |   |     |     |
|----|----------------------------------|-----------|-------|---|--|-----------|------|---|---|-----|-----|
| 21 | 220KV-NEW PURNEA-MADHEPURA-1     | 10/5/2020 | 13:00 | MADHEPURA : YN Z1, 60KM, 2.59KA                                     | tripped from Madhepura End only        | Y-N FAULT | <100 | A/R successful at Purnea end.A/r operated from Madepura end also but unsuccessful           | Time frame not sufficient.                        | NO  | YES |
| 22 | 400KV-JEERAT-BAKRESWAR-1         | 10/5/2020 | 11:53 | Fire incident on PXLN Relay in Main-1 Relay Protection at Jeerat    |  | NO FAULT  | NA   |   |   | NO  | NO  |
| 23 | 220KV-ALIPURDUAR (PG)-SALAKATI-1 | 10/5/2020 | 16:35 | R-B, F/C 5.1 kA (R phase), 3.28 kA (B phase), 36.5 km from APD      | R phase, 3.37 kA, 55.8km from Salakati | R-B FAULT | <100 | Pahse to phase fault.   |   | YES | NO  |
| 24 | 400KV-PPSP-BIDHANNAGAR-2         | 10/5/2020 | 15:17 | BIDHANNAGAR: YN, Z1, 130.1KM, 2.753KA                               | PPSP: YN, Z1, 60KM                     | Y-N FAULT | <100 | No A/r at PPSP end.   | DR needs to be configured as per ERPC philosophy. | NO  | YES |
| 25 | 220KV-DARBHANGA(DMTCL)-LAUKAHI-1 | 10/5/2020 | 14:45 | DARBHANGA: BN, 64.2KM 2.16KA  | HI: BN, Z1, 33.67KM, 232A              | B-N FAULT | <100 | A/r operated at laukahi end and was unsuccessful.   |   | YES | YES |
| 26 | 400KV-BIHARSARIFF-KODARMA-2      | 10/5/2020 | 14:45 | BIHARSARIF: RN, 44KM, 5.93KA  | KODARMA: RN, Z1, 51.4KM 6.1KA          | R-N FAULT | <100 | At the time of Auto reclose MCB ,TCB A/R lockout occurred and 3 phase opening               |   | YES | NO  |
| 27 | 400KV-BINAGURI-ALIPURDUAR (PG)-1 | 10/6/2020 | 12:49 | Bingauri: Y-B z1,35.53 km,Iy=11.28 KA,iB=11.01 KA                   | uar Y-B z1 90.1 km                     | Y-B FAULT | <100 | Reactor ringdown observed.  |   | YES | YES |
| 28 | 220KV-TENUGHAT-BIHARSARIFF-1     | 10/6/2020 | 13:57 | z1,152 km,R-N,(line length 250 km) 0.8 KA at tenughat               | Start phase AN trip phase              | R-N FAULT | <100 | NO A/r  | DR needs to be configured as per ERPC philosophy. | NO  | YES |
| 29 | 220KV-KHAGARIA-NEW PURNEA-2      | 10/6/2020 | 12:32 | y-b.83.1 km,iy=2.89 KA,ib=2.76 km z1 from new purnea                | y-b,iy=2.28 kA,ib=2.14 kA,z1           | Y-B FAULT | <100 |   |   | YES | NO  |
| 30 | 220KV-DARBHANGA(DMTCL)-LAUKAHI-1 | 10/6/2020 | 1:13  | Darbhanga : R-N, Z-1, 58 km, 2.56 KA                                |  | R-N FAULT | <100 | NO A/R 3 PHASE TRIPPING FROM BOTH END   | DR TIME FRAME INSUFFICIENT AT BOTH END            | YES | YES |
| 31 | 220KV-JEYPORE-JAYNAGAR-2         | 10/7/2020 | 18:34 | 220 KV Bus II at Jaynagar tripped. Line tripped from Jaynagar only. |  | NO FAULT  | NA   | At 18:24 hrs 220 kv Balimela-Jaynagar 2 tripped on R_N fault. While taking charging attempt |   | NO  | NO  |



|    |                                       |            |       |   |                                |           |      |   |                                       |     |     |
|----|---------------------------------------|------------|-------|---|--------------------------------|-----------|------|---|---------------------------------------|-----|-----|
| 32 | 220KV-JAYNAGAR-JEYPORE-1              | 10/7/2020  | 18:34 | 220 KV Bus II at Jaynagar tripped.<br>Line tripped from Jaynagar only.                        |                                | NO FAULT  | NA   | At 18:24 hrs 220 kv Balimela-Jaynagar 2 tripped on R_N fault. While taking charging attempt |                                       | NO  | NO  |
| 33 | 220KV-RANCHI-HATIA-1                  | 10/8/2020  | 14:38 | DT received at Ranchi   | Did not trip                   | NO FAULT  | NA   | NO FAULT,DT RECEIVED AT RANCHI  |                                       | YES | NO  |
| 34 | 400KV-PPSP-BIDHANNAGAR-2              | 10/8/2020  | 13:19 | PPSP: R PH E/F, Z1, 130.5km   | BIDHANNAGAR: R PH              | R-N FAULT | <100 | No A/r at PPSP end.   | DR needs to be configured as per ERPC | NO  | YES |
| 35 | 220KV-TASHIDING-RANGPO-1              | 10/8/2020  | 12:10 | Spurious signal input GD malfunction occurred during 220KV Bay up-gradation/construction work |                                | NO FAULT  | NA   |   |                                       | NO  | NO  |
| 36 | 220KV-BUDHIPADAR-KORBA-2              | 10/9/2020  | 12:36 | Z1, B_N, -105.2 KM, 3.28 KA   | B_N, 160 KM                    | B-N FAULT | <160 |   | DR needs to be configured as per ERPC | YES | NO  |
| 37 | 220KV-KHAGARIA-NEW PURNEA-2           | 10/9/2020  | 13:45 | B_N, 24 KM, 3.7 kA (New Purnea)   | 0.865                          | B-N FAULT | <160 | A/r operated at Purnea end  |                                       | NO  | YES |
| 38 | 220KV-RENGALI(PH)-TSTPP-1             | 10/10/2020 | 16:10 | Due to problem at Rengali   |                                | NO FAULT  | NA   |   |                                       | NO  | NO  |
| 39 | 220KV-CHANDIL-STPS(WBPDCL)-1          | 10/10/2020 | 0:30  | Relay at STPS end: Yph, Z1, 38.95km, Iy=3.343kA   |                                | Y-N FAULT | <160 | For 1 phase fault although A/R in enabled it is getting locked out at STPS end and 3        |                                       | YES | YES |
| 40 | 400KV-KOLAGHAT-KHARAGPUR-2            | 10/10/2020 | 13:55 | Kharagpur: R PHASE,Z-1,24KM,Ir 5.4KA  | Kolaghat : R PHASE, Z-2,       | R-N FAULT | <100 | A/r was successful from Kolaghat end,why not from Kharagpur end ?                           |                                       | YES | NO  |
| 41 | 400KV-BARIPADA-KHARAGPUR-1            | 10/10/2020 | 13:04 | Kharagpur: Z1,Y PHASE, SOTF, 68.3KM,3.8KA   | Baripada : Y Ph, Z-            | Y-N FAULT | <100 |   |                                       | NO  | NO  |
| 42 | 400KV-ALIPURDUAR (PG)-BONGAIGAON-2    | 10/10/2020 | 11:09 | Bongaigaon : R ph, z-1 48.21 km, 4.8KA  | Alipurduar: R-N, Ir 3.3 kA,    | R-N FAULT | 500  | App end sensed zone-2 ,did not received any   |                                       | YES | NO  |
| 43 | 220KV-BOLANGIR(PG)-BOLANGIR(GRIDCO)-2 | 10/10/2020 | 10:30 | Bolangir OPTCL: Z2, 61.6 kM Y-N, Iy 1.66 kA   | Bolangir PG: Line did not trip | Y-N FAULT | <100 |   |                                       | NO  | NO  |
| 44 | 220KV-CHUKHA-BIRPARA-2                | 10/10/2020 | 8:56  | Birpara : Y-B ph, Iy-3.14KA, Ib-3.457 KA, 48.13 KM  |                                | Y-B FAULT | <100 |   |                                       | NO  | YES |
| 45 | 220KV-CHANDIL-STPS(WBPDCL)-1          | 10/11/2020 | 10:50 | STPS: Z1, R(ph.)-N, FD: 77.75 KM, FC: 1.668 KA  | Chandil: Z1, RN, 42.33KM       | R-N FAULT | 500  | Delayed clearance seems no carrier based protection.Altogh                                  |                                       | YES | YES |
| 46 | 220KV-CHAIBASA(PG)-CHAIBASA(JUSNL)-1  | 10/12/2020 | 22:05 | Chaibasa (JUSNL):Ia=140.4 A, Ib=388.7 A, Ic=1.32 kA   | Did not trip                   | B-N FAULT |      |   |                                       | NO  | NO  |

|    |                                     |            |       |  |                           |           |      |  |     |     |
|----|-------------------------------------|------------|-------|--|---------------------------|-----------|------|--|-----|-----|
| 47 | 400KV-LAPANGA-OPGC (IB THERMAL)-2   | 10/12/2020 | 11:34 | P444 Main 1 DP: Zone 1 fault, R to G, Distance: 3.494 Km, IL1=18.96KA                              | From Ib end: Z1, R to G , | R-N FAULT | <100 | A/R unsuccessful FROM LAPANGA END .                            | YES | NO  |
| 48 | 400KV-JEERAT-BAKRESWAR-1            | 10/12/2020 | 9:05  | Carrier Aided trip, A/R lockout at BkTPP end.  | Tripp at Jeerat           | NO FAULT  | NA   |  | NO  | NO  |
| 49 | 400KV-RANCHI-ROURKELA-2             | 10/13/2020 | 10:08 | ROURKELA: Y-N, 3.9kA, 105km  | : Y-N, 9kA, 25km          | Y-N FAULT | <100 |  | YES | NO  |
| 50 | 220KV-MAITHON-KALYANESHWARI-2       | 10/13/2020 | 20:30 | Mtn: R-n, z3, 1.13 kA  |                           | R-N FAULT | 1750 | 32 kv Maithonn HEP (3*20) became zero and 132 kv A/R reclosure | YES | NO  |
| 51 | 400KV-LAPANGA-OPGC (IB THERMAL)-2   | 10/13/2020 | 11:54 | IB: RN, Z1, 15.4 KA, 6.85KM  | GA: Z1, RN, 8.8KA,        | R-N FAULT | <100 | operated at lapanga end ,after unsuccessful A/R of             | YES | NO  |
| 52 | 220KV-JSPL-JAMSHEDPUR(DVC)-1        | 10/14/2020 | 10:49 | tripped at both ends w.r.i at Jamshedpur end dist prot operated, B ph, Z2, 193.106 km, IB=930.48   | PHASE Z2 86 YB 186        | B-N FAULT | <160 |  | NO  | NO  |
| 53 | 220KV-JODA-JINDAL-JAMSHEDPUR-1      | 10/14/2020 | 9:40  | B ph, Z2, 193.106 km, IB=742.64 A at dvc end   | 367.2 A Ib - 265.1 A      | B-N FAULT | <160 |  | NO  | NO  |
| 54 | 400KV-MUZAFFARPUR-GORAKHPUR-2       | 10/15/2020 | 13:36 | DT received at Muzaffarpur   | DT at Gorakhpur           | NO FAULT  | NA   | AFTER OPENING OF ALL BREAKERS HIGH VOLTAGS UPTO 650 KV         | YES | NO  |
| 55 | 220KV-MUZAFFARPUR-HAJIPUR-1         | 10/15/2020 | 10:45 | B_N, 28.5 KM, 4.48 kA  | B_N, 22.73 KM, 3.064 kA   | B-N FAULT | <160 |  | NO  | NO  |
| 56 | 220KV-JSPL-JAMSHEDPUR(DVC)-1        | 10/15/2020 | 10:48 | Y_N, 1.12 kA, 107.4 KM (JSPL)  |                           | Y-N FAULT | <160 |  | NO  | NO  |
| 57 | 400KV-JAMSHEDPUR-MAITHON-1          | 10/15/2020 | 9:39  | Line tripped while switching tie bay at Jamshedpur for scheduled shutdown activity. LBB at Maithon |                           | NO FAULT  | NA   | DT RECEIVED  | YES | YES |
| 58 | 220KV-FSTPP-LALMATIA-1              | 10/16/2020 | 11:52 | JUSNL-Master trip relay 86, B-ph fault.  |                           | B-N FAULT | 500  | High resistive fault in B phase tripped after 500 ms           | YES | NO  |
| 59 | 220KV-MALDA(PG)-GAZOLE-2            | 10/16/2020 | 11:45 | Malda-B-N FC-7.446kA   | Gazol- B-N Z1 FC- 4.7kA   | B-N FAULT | <160 | Auto reclose attempted and unsuccessful.                       | YES | YES |
| 60 | 220KV-DARBHANGA (DMTCL)-DARBHANGA-2 | 10/16/2020 | 10:46 | DMTCL-Back up protection operated B-N FC-2.37kA FD-20km  | BSPTCL end not tripped    | B-N FAULT | 400  |  | NO  | NO  |



|    |                                    |            |       |  |                                  |           |      |   |  |     |     |
|----|------------------------------------|------------|-------|--|----------------------------------|-----------|------|---|--|-----|-----|
| 61 | 400KV-BINAGURI-RANGPO-1            | 10/17/2020 | 22:45 | Y-N fault Zone-2 , 2.1 KA , FD 85 km from RANGPO end                                   | RI end: Y-N, Zone 1, 24.4 Km,    | Y-N FAULT | <100 | A/R UNSUCCESSFUL.   |  | YES | YES |
| 62 | 400KV-MAITHON-GAYA-2               | 10/18/2020 | 14:34 | Maithon Y-N, FC-2.729 KA, FD-164.46 Km   | N, 120.49                        | Y-N FAULT | <100 | Auto reclose attempted and unsuccessful   |  | YES | YES |
| 63 | 400KV-TEESTA-III-DIKCHU-1          | 10/18/2020 | 13:11 | Teesta3-Z2 B-N FD-18.97km FC-3.441kA,  | Dikchu-Z1 B-N FD-8km             | B-N FAULT | 500  | A/R disabled at Teesta - 3 end , 3 phase tripping occurred at the                     |  | YES | YES |
| 64 | 220KV-KHAGARIA-NEW PURNEA-2        | 10/18/2020 | 12:25 | Khagaria-Z1 R-N FC-1.57ka FD-32.9kM  | PG- Not tripped                  | R-N FAULT | <160 | Transient fault, A/R successful from New Purnea                                       |  | NO  | NO  |
| 65 | 220KV-NEW MELLI-JORETHANG-1        | 10/18/2020 | 4:13  | Y-B,IY=6.645 KA ,IB= 6.85 KA ,1.476 KM FROM NEWMELLI                                   | 9.2 KM Z2,IY=950 A,IB=97         | Y-B FAULT | <160 |   |  | YES | YES |
| 66 | 220KV-NEW MELLI-JORETHANG-1        | 10/19/2020 | 11:01 | NEW MELLI:Z1, Y-B, IY-7.16KA, IB-7.37KA, 1.47KM FROM NEW MELLI                         | ANG: Z2, Y-B, 9KM                | Y-B FAULT | <160 | touching Line 1 at Location no. 26 & 27   |  | YES | YES |
| 67 | 400KV-JEYPORE-GAJUWAKA-2           | 10/19/2020 | 2:32  | Z1, R_N, 3.1 KA, 70.81 KM  | 128.8 KM,                        | R-N FAULT | <100 |   |  | NO  | NO  |
| 68 | 400KV-RANGPO-DIKCHU-1              | 10/20/2020 | 12:58 | Y-b iy =7.9 ib=7.5 KA 19.1 km from rangpo  | km at dikchu                     | Y-B FAULT | 800  |   |  | NO  | NO  |
| 69 | 400KV-RANGPO-TEESTA-V-2            | 10/20/2020 | 12:12 | at rangpo end: B-N,z2,8.8 KA,13.08 KA(12 km)   | v : 2.4 KA,z1,B-N, a/r successfu | B-N FAULT | <100 | At rangpo end all 3 phase volatge became zero then after 1 second all 3 phase voltage |  | YES | NO  |
| 70 | 220KV-ATRI-PANDIABILI-2            | 10/20/2020 | 11:10 | 86A & 86B Trip Relay Operated, Zone-None, Ia = Ib=Ic = 0 , Dist - NA, at ATRI grid end | Recieved at Pandiabil            | B-N FAULT | <100 |   |  | NO  | NO  |
| 71 | 400KV-ALIPURDUAR (PG)-BINAGURI-4   | 10/20/2020 | 8:51  | B-N 21.2 km,7.964 KA from Binaguri   | kA,71.1 km from                  | B-N FAULT | <100 | Tripped in reclaim time.  |  | YES | YES |
| 72 | 400KV-PPSP-BIDHANNAGAR-1           | 10/20/2020 | 3:49  | PPSP: Z1, R-N, 64.7KM, 2.18KA  | Z1, R-N,130K M,2.76K             | R-N FAULT | <100 |   |  | NO  | YES |
| 73 | 220KV-KATAPALLI-BOLANGIR(PG)-1     | 10/24/2020 | 13:25 | Katapalli: FD 220 KM, Z3, Y-N, Iy 1.11 kA  |                                  | NO FAULT  | NA   |   |  | NO  | NO  |
| 74 | 400KV-ALIPURDUAR (PG)-BONGAIGAON-2 | 10/25/2020 | 11:36 | R_B_N, 55 KM, Ir: 6.07 kA, Ib: 5.9 kA (Alipurduar)                                     | 24 KM, Ir=Ib: 7.15 kA            | R-B FAULT | <100 |   |  | YES | YES |

|    |                                    |            |       |   |                      |             |      |  |                                       |     |     |
|----|------------------------------------|------------|-------|---|----------------------|-------------|------|--|---------------------------------------|-----|-----|
| 75 | 220KV-CHANDIL-STPS(WBPDCL)-1       | 10/25/2020 | 10:44 | R-N , Z-1 , F/D-77KM , F/C-1,63   |                      | R-N FAULT   | 500  | Auto reclose lockout occurred at stps end and 3 phase tripping                                       |                                       | NO  | YES |
| 76 | 400KV-BINAGURI-RANGPO-1            | 10/25/2020 | 7:13  | Contact multiplication relay burnt at rangpo end  |                      | NO FAULT    | NA   |  |                                       | YES | YES |
| 77 | 400KV-MEERAMUNDALI-MENDHASAL-1     | 10/26/2020 | 11:15 | Mendhasal: B-N, Z1,Iy 3.26 kA, Dist- 44.7km   | dali: Successf       | B-N FAULT   | <100 |  | DR needs to be configured as per ERPC | YES | NO  |
| 78 | 220KV-DARBHANGA (DMTCL)-MOTIPUR-2  | 10/26/2020 | 10:11 | Darbhang: Z2, B-N, Ib 946 A, 94.75 kM   | B-N, Ib 189 A,       | B-N FAULT   | <160 | auto reclose ,B phase Breaker  |                                       | NO  | YES |
| 79 | 220KV-DARBHANGA (DMTCL)-MOTIPUR-1  | 10/26/2020 | 10:11 | Motipur: B-N, Ib 189.7 A, FD 12.39 kM   |                      | B-N FAULT   | <160 | Auto reclose on temporary overvoltage as per information received at 247                             |                                       | NO  | NO  |
| 80 | 220 KV BUDIPADAR - KORBA-II        | 10/27/2020 | 11:15 | B-N , Z-1 , F/D-18.9 KM , F/C -6.18KA   |                      | B-N FAULT   | <160 |  |                                       | NO  | NO  |
| 81 | 400KV-ALIPURDUAR (PG)-BONGAIGAON-2 | 10/30/2020 | 10:22 | 38.5 km Z1 RB fault, Ir 7.86 KA Ib8.98 KA   |                      | R-B FAULT   | <100 |  |                                       | YES | YES |
| 82 | 400KV-RANGPO-TEESTA-V-1            | 10/30/2020 | 13:15 | SOE: 13:15:15:724 R-B Z1 1.9 Km AT TEESTA   | B-N, Ib 9.7 Km R_B r | R-B-N FAULT | 500  | Fault was in this line ,intially R phase high resistive fault  |                                       | YES | NO  |
| 83 | 220KV-JORETHANG-NEW MELLI-2        | 10/30/2020 | 13:15 | O/C E/F R PHASE AT JORETHANG 110 KM CLOSE SOE:13:35:03:235  | NO TRIP AT NEW MELLI | NO FAULT    | 500  | At jorethang end o/c e/f in R phase operated for the fault in Rangpo teesta -5 , setting needs to be |                                       | YES | NO  |
| 84 | 220KV-JORETHANG-NEW MELLI-1        | 10/30/2020 | 13:15 | O/C E/F R PHASE AT JORETHANG END 110 KM UNIT 1 ALSO TRIPPED 13:15:17:613 LINE SOE 13:15:17:613 13:24:15:675 |                      | NO FAULT    | 500  | At jorethang end o/c e/f in R phase operated for the fault in Rangpo teesta -5 , setting             |                                       | YES | NO  |
| 85 | 400KV-BIDHANNAGAR-NEW CHANDITALA-1 | 10/30/2020 | 11:57 | N.CHANDITALA-- Z1, R-Y, 24.27KM, 8.64/8.89 KA.  | R-Y , 4.17KA/        | R-Y FAULT   | <100 |  |                                       | NO  | NO  |
| 86 | 400 KV BINAGURI - KISHANGANJ - II  | 10/31/2020 | 10:07 | Tripped from Kishanganj end only  |                      | NO FAULT    | NA   |  |                                       | NO  | NO  |