



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
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NO. ERPC/PROTECTION/2016-17/

DATE: 06.06.2017

FAX MESSAGE NO. -

To,

As per list enclosed.

Sub: Notice for 56th Protection Coordination sub-Committee (PCC) meeting of ERPC

Notice is hereby given that **56th PCC meeting** of ERPC will be held on **22nd June 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 55th 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 May, 2017:
 - Disturbance at 220 kV Balasore S/s (OPTCL) on 03-05-17 at 17:15 hrs.
 - Disturbance at 220 kV Chuka and Birpara S/s on 06-05-17 at 15:39 hrs
 - Disturbance at 220 kV Hazipur, Begusarai and Madhepura S/s on 09-05-17 at 04:30 hrs
 - Tripping of 400kV Teesta III – Rangpo line on 11-05-17 at 08:28 hrs and 15-05-17 at 16:09 hrs
 - Disturbance at DSTPS (DVC) on 12-05-17 at 13:00 hrs.
 - Tripping of 132kV Arrah(PG)-Arrah(BSPTCL) on 13-05-17 at 09:20 hrs.
 - Disturbance at 132 kV Chandil and Adityapur S/s (JUSNL) on 13-05-17 at 13:37 hrs
 - Tripping of 220 kV Biharshariff - Fatuah D/C line on 03-05-17 at 11:45 hrs
 - Tripping of 400 kV HEL – Subhasgram D/C line on 13-05-17 at 16:29 hrs
 - Disturbance at 220 kV Joda and Ramchandrapur S/s on 13-05-17 at 22:08 hrs
 - Disturbance at 220 kV Subashgram S/s (WB) on 17-05-17 at 06:28 hrs
 - Disturbance at 220 kV Katapalli, Bolangir and Lapanga S/s on 18-05-17 at 23:48 hrs
 - Disturbance at 220 kV Lalmatia S/s(JUSNL) on 21-05-17 at 16:39 hrs
 - Disturbance at 132 kV CTPS (DVC) S/s on 23-05-17 at 14:50 hrs
 - Disturbance at 132 kV Jamui (BSPTCL) on 25-05-17 at 13:28 hrs
 - Disturbance at 220 kV Chandil S/s on 26-05-17 at 15:34 hrs
 - Disturbance at 132 kV NBU S/s on 29-05-17 at 17:12 hrs
 - Disturbance at 132 kV Kasba S/s (CESC) on 31-05-17 at 15:53 hrs
- 4) Multiple elements tripping without load loss:
 - Disturbance at 400 kV Meramundali S/s on 12-05-17 at 12:07 hrs
 - Disturbance at 400 kV Darbanga S/s on 21-05-17 at 11:23 hrs
 - Disturbance at 220 kV Birpara on 22-05-17 at 16:32 hrs

- Disturbance at 400 kV New Dubri S/s on 26-05-17 at 10:20 hrs
- Disturbance at 400 kV Sasaram S/s on 29-05-17 at 13:38 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
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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)
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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
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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
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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
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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	400 KV SUBHASHGRAM - SAGARDIGHI S/C	05.05.17	05:22	05.05.17	06:09	Y-N FAULT	360 ms approx.	Y-N, Z-I, F/C 7.16 KA, 20.5 km from Subhasgram, A/R successful at Subhasgram end	Y-N, Z-II, F/C 2.12 kA, 222.8 km from Sagardighi	No autoreclose operation observed in PMU data	Yes	No	
2	220 KV TENUGHAT - BIHARSHARIFF	05.05.17	13:02	05.05.17	13:47	R-N FAULT	1200 ms approx.	R-N, Z-I, 137.1 km from Tenughat	R-N, Master trip	--	Yes	No	
3	220KV TALCHER-RENGALI	05.05.17	15:32	05.05.17	17:38	R-N FAULT	500 ms approx.	R-B, Z-I, 21 km from Talcher	Information yet to be received	No autoreclose operation observed in PMU data	Yes	No	
4	220KV CHUKHA-BIRPARA- I & II	05.05.17	16:59	05.05.17	17:29	R-Y FAULT	1100 ms approx.	Information yet to be received	Y-N, Z-II, F/C 0.669 KA, 104 km from Birpara	--	No	Yes	
5	400 KV LAKHISARAI-KAHALGAON II	15.05.17	20:41	15.05.17	21:06	R-N FAULT	400 ms approx.	Information yet to be received	Information yet to be received	No autoreclose operation observed in PMU data	No	No	
6	220 KV PATNA - KHAGUL	17.05.17	14:16	17.05.17	14:33	Y-N FAULT	350 ms approx.	Information yet to be received	Did not trip	No autoreclose operation observed in PMU data	No	--	
7	400 KV JAMSHEDPUR-DSTPS - II	22.05.17	16:24	22.05.17	16:48	B-N FAULT	500 ms approx.	Information yet to be received	Information yet to be received	No autoreclose operation observed in PMU data	No	No	OPGW snapped
8	220KV THERUBALI-INDRAVATI-II	29.05.17	00:04	29.05.17	00:22	EARTH FAULT	350 ms approx.	Information yet to be received	Information yet to be received	No autoreclose operation observed in PMU data	No	No	
Multiple tripping at same time													
1	220 KV MUZZAFFARPUR - HAZIPUR -II	17.05.17	13:50	17.05.17	14:55	B-N FAULT	<100	Information yet to be received	Information yet to be received	Unsuccessful auto-reclose operation observed in PMU data	No	No	
2	220 KV MUZZAFFARPUR - HAZIPUR -I			17.05.17	19:05	B-N FAULT	<100	Information yet to be received	Information yet to be received	Unsuccessful auto-reclose operation observed in PMU data	No	No	
3	400 KV JEERAT - BEHRAMPUR	17.05.17	18:24	17.05.17	18:44	Y-N FAULT	<100	Y-N, Z-II, 149 km from Jeerat, F/C 2.5 kA	Y-N, F/C 15.268 kA, Z-I	Unsuccessful auto-reclose operation observed in PMU data	No	Yes	
4	400 KV FARAKKA - BEHRAMPUR			17.05.17	19:01	Y-N FAULT	<100	Y-N, Z-III	Information yet to be received	Unsuccessful auto-reclose operation observed in PMU data	Yes	No	
5	400KV MERAMUNDALI - SEL - I	20.05.17	14:54	20.05.17	18:12	R-N FAULT	<100	R-N , Z-I, F/D - 186 Km, F/C - 2.2 KA	R-N , Z-I, F/D - 2.2 KM from SEL, F/C - 21 KA	No autoreclose operation observed in PMU data	No	Yes	
6	400KV MERAMUNDALI - SEL - II			20.05.17	15:29	R-N FAULT	<100	R-N , Z-II, F/D - 237 Km from MMND, F/C - 1.3 KA	R-N , Z-I, F/D - 7.2 KM from SEL, F/C - 2 KA	No autoreclose operation observed in PMU data	No	Yes	

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	400KV.MERAMUNDALI - ANGUL - I	20.05.17	14:54	20.05.17	15:13	DUE TO TRIPPING OF 400 KV MERAMUNDALI - SEL - II THROUGH WHICH LINE WAS CHARGED	--	--	--	--	--	--	
8	400 FARAKKA-GOKARNO-I	23.05.17	17:35	23.05.17	18:17	VT FUSE FAIL AT FARAKKA END	<100	VT Fuse fail	Information yet to be received	A/R successful at both end but line tripped due to fault in reclaim time	No	No	
9	400 FARAKKA-GOKARNO-II			23.05.17	18:23	TRIPPED ALONG WITH CIRCUIT I AS MAIN BAY IS NOT AVAILABLE AT FARAKKA	--	--	--	--	--	--	--
10	400 KV ROURKELA - RAIGARH	30.05.17	07:02	30.05.17	17:36	R-N FAULT	<100	R Phase TEED Protection, DT sent	Information yet to be received	--	No	No	400/220 kV ICT - II at Rourkela also tripped at same time due to operation of R phase back up O/C. As fault was in 400 kV side ICT should not trip from 400 kV side on O/C.

Fault Not observed in PMU data

1	220KV BALASORE - BARIPADA - II	04.05.17	11:45	04.05.17	12:20	SPURIOUS TRIPPING	--	Information yet to be received	Information yet to be received	--	No	No	
2	220KV BIDHANNAGAR-WARIA-I	04.05.17	20:30	04.05.17	21:22	SPURIOUS TRIPPING	--	Did not trip	DPO, Z-III	--	--	No	
3	220KV RENGALI (GR) - RENGALI (PG)	09.05.17	22:27	09.05.17	00:04	SPURIOUS TRIPPING	--	Information yet to be received	DT Received	--	No	No	
4	132 KV RIHAND-GARWA	10.05.17	13:49	10.05.17	14:07	PROBLEM AT RIHAND END	--	Information yet to be received	Information yet to be received	--	No	No	
5	400KV ANDAL- JAMSHEDPUR - I	13.05.17	04:35	13.05.17	05:24	SPURIOUS TRIPPING	--	Information yet to be received	DT received	--	No	No	
6	220 KV PATNA - KHAGUL	17.05.17	16:48	17.05.17	17:30	SPURIOUS TRIPPING	--	Information yet to be received	Did not trip	--	No	--	
7	400 KV SAGARDIGHI - BEHRAMPUR - II	18.05.17	07:39	18.05.17	08:04	SPURIOUS TRIPPING	--	B-N, Z-III, 42.32 km from Sagardighi, F/C 5.469 kA	Did not trip	--	Yes	--	DR data is not matching with relay indication
8	400 KV NEW RACHIS - PPSP	23.05.17	15:37	23.05.17	16:05	SPURIOUS TRIPPING	--	Master trip relay operated	Did not trip	--	No	--	
9	400 KV NEW RANCHI - ARAMBAG	23.05.17	15:37	23.05.17	16:07	SPURIOUS TRIPPING	--	Master trip relay operated	Did not trip	--	No	--	
10	400 KV NEW RANCHI-PPSP	25.05.17	12:42	25.05.17	13:39	SPURIOUS TRIPPING	--	Information yet to be received	Did not trip	--	No	--	
11	400 KV NEW RANCHI-ARAMBAG	25.05.17	12:42	25.05.17	13:38	SPURIOUS TRIPPING	--	Information yet to be received	Did not trip	--	No	--	
12	400KV GAYA-KODARMA-II	28.05.17	14:59	28.05.17	15:17	SPURIOUS TRIPPING	--	DT Received	Information yet to be received	--	No	No	
13	400KV MALDA-PURNEA-II	29.05.17	19:51	29.05.17	20:55	SPURIOUS TRIPPING	--	DT Received	Information yet to be received	--	No	No	
14	400KV RANCHI-MPL	30.05.17	10:57	30.05.17	11:14	SPURIOUS TRIPPING	--	DT Received	Information yet to be received	--	No	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
No autorecloser operation observed in PMU data													
1	400 KV BARIPADA - KEONJHAR	01.05.17	14:31	01.05.17	15:03	Y-N FAULT	<100	Y-N, Z-I, 147.4 km from Baripada, F/C 2.9 kA, DT received from Keonjhar end	Information yet to be received	No autoreclose operation observed in PMU data	Yes	No	Three phase breaker opened at Baripada end due to DT received from Keonjhar end
2	400 KV FARAKKA - MALDA - II	01.05.17	16:24	01.05.17	18:12	B-N FAULT	<100	B-N, Z-I, F/C 23 kA	B-N, 28.5 km from Malda, F/C 3.8 kA, A/R unsuccessful at Malda end	No autoreclose operation observed in PMU data	Yes	Yes	A/R unsuccessful at Malda end
3	400KV KHARAGPUR-BARIPADA	05.05.17	16:30	05.05.17	16:52	R-N FAULT	<100	R-N, Z-II, F/C 2.6 kA, 67 km from KGP, SOTF, A/R lock out	Did not trip	No autoreclose operation observed in PMU data	Yes	--	Reason for no-alarm at Baripada may be analysed
4	400KV JEYPORE-INDRAVATI	06.05.17	17:01	06.05.17	17:39	R-N FAULT	<100	R-N, 1.75 km from Jeypore, F/C 4kA, A/R successful at Jeypore end	R-N, 71 km from Indravati, F/C 1.7kA	No autoreclose operation observed in PMU data	No	No	
5	400KV FARAKKA-GOKARNO-II	08.05.17	14:59	08.05.17	15:34	R-N FAULT	<100	DT received	Information yet to be received	No autoreclose operation observed in PMU data	No	No	
6	400KV JAMSHEDPUR-ADHUNIK-II	08.05.17	16:01	08.05.17	19:06	R-N FAULT	<100	B-N, F/C 18 kA, Differential protection operated	Information yet to be received	No autoreclose operation observed in PMU data	No	No	
7	400KV KHARAGPUR - CHAIBASA - I	08.05.18	16:34	08.05.17	16:56	B-N FAULT	<100	B-N, F/C: 2.6 kA, 96.8 KM from Kharagpur	B-N, F/C: 2.46 kA, 59.46 KM from Chaibasa	No autoreclose operation observed in PMU data	No	No	
8	400 KV BARIPADA-KHARAGPUR	09.05.17	10:25	09.05.17	10:44	B-N FAULT	<100	Information yet to be received	SOTF, Z-III, Fault duration < 100 ms	No autoreclose operation observed in PMU data	No	Yes	
9	400KV FSTPP - GOKORNA-I	11.05.17	17:08	11.05.17	17:37	R-N FAULT	<100	R-N , Z-I, F/D - 106 Km , F/c - 8.1 kA	Information yet to be received	No autoreclose operation observed in PMU data	No	No	Inclement weather condition
10	400KV FSTPP - GOKORNA-II	11.05.17	17:08	11.05.17	19:58	R-N FAULT	<100	R-N , Z-I, F/D - 106 Km , F/c - 8.1 kA	Information yet to be received	No autoreclose operation observed in PMU data	No	No	Inclement weather condition
11	400 KV TALCHER-MERAMUNDALI	11.05.17	21:44	11.05.17	22:08	R-N FAULT	<100	R-N, Z-I, 24.58 km from Talcher, A/R successful at Talcher end	R-N, Z-I, F/D - 28.3 KM, F/C - 10.2 KM	No autoreclose operation observed in PMU data	Yes	No	
12	400KV KODARMA-BOKARO-I	13.05.17	12:39	31.05.17	12:20	R-N FAULT	<100	R-N , Z-I, 45.298 KM from Koderma, F/C 2.4 KA	Information yet to be received	No autoreclose operation observed in PMU data	No	No	Tower collapsed between tower location 172 & 173
13	400KV KODARMA-BOKARO-II	13.05.17	12:39	31.05.17	12:21	Y-N FAULT	<100	Y-N, Z-I,F/C 0.944 KA	Information yet to be received	No autoreclose operation observed in PMU data	No	No	Tower collapsed between tower location 172 & 174
14	400 KV JHARSUGUDA - IBEUL S/C	15.05.17	13:13			R-N FAULT	<100	R-N, 28.4 km from JHG	Information yet to be received	No autoreclose operation observed in PMU data	No	No	
15	400 KV CHAIBASA-KHARAGPUR-II	15.05.17	14:22	15.05.17	15:06	Y-N FAULT	<100	Y-N, Z-I, 3.8 km from Chaibasa, F/C 12.28 kA, A/R successful at KGP end	Y-N, Z-I, 127.1KM from KGP, F/C 1.415KA	No autoreclose operation observed in PMU data	No	Yes	A/R successful at KGP end

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
16	400 KV BARIPADA-KEONJHAR	15.05.17	15:29	15.05.17	16:42	B-N FAULT	<100	B-N, Z-I, 84 km from BPD, F/C 3.6 kA, DT received	B-N, Z-I, F/C-1.85KA, Dist-99.9KM,63.9%	No autoreclose operation observed in PMU data	Yes	No	Reason for DT receipt at Baripada may be explained. Y phase breaker at Baripada opened before DT receipt.
17	400 KV CHAIBASA-KHARAGPUR-I	15.05.17	15:30	15.05.17	15:52	B-N FAULT	<100	B-N, Z-I, 58.7 km from Chaibasa, F/C 2.5 kA	B-N, Z-III, F/C 2.4 kA, 129.7 km from KGP	No autoreclose operation observed in PMU data	No	Yes	A/R successful at KGP end, Only Z III picked up at Kharagpur end.
18	400 KV BARH - KAHALGAON - II	17.05.17	16:20	17.05.17	16:39	B-N FAULT	<100	Information yet to be received	Did not trip	No autoreclose operation observed in PMU data	No	--	
19	400 KV KAHALGAON - MAITHON - I	17.05.17	17:09	17.05.17	17:21	Y-N FAULT	<100	A/R successful at Kahalgaon end	Y-N, 65.5 km from Maithon, F/C 3.3 kA	No autoreclose operation observed in PMU data	No	No	
20	400 KV BARIPADA - KEONJHAR	18.05.17	17:26	18.05.17	18:00	Y-N FAULT	<100	Information yet to be received	Y-N, 70.4 km from Keonjhar, 1.94 kA	No autoreclose operation observed in PMU data	No	No	
21	400 KV ARAMBAG - NEW RANCHI S/C	19.05.17	17:44	19.05.17	18:10	B-N FAULT	<100	B-N, Z-I F/D- 60 KM from Arambag, F/C-4KA	B-N, Z-I F/D- 201 KM from New Ranchi, F/C-1.5KA	No autoreclose operation observed in PMU data	No	No	
22	400KV MERAMUNDALI - MENDHASAL	20.05.17	17:26	20.05.17	18:42	R-N FAULT	<100	R-N, Z-I, F/D - 1.5 KM from Meramundali, F/C - 31.8 KA	R-N, Z-II, F/D - 99 KM from Mendasal, F/C - 2.3 KA	No autoreclose operation observed in PMU data	No	No	
23	400 KV DURGAPUR-SAGARDIGHI - II	23.05.17	17:32	23.05.17	18:00	Y-N FAULT	<100	A/R successful at Durgapur end	Information yet to be received	No autoreclose operation observed in PMU data	Yes	No	A/R successful at Durgapur end
24	400 KV JHARSUGUDA - IBEUL - II	24.05.17	12:57	24.05.17	18:54	R-N FAULT	<100	R-N, Z-II, 48 km from Jharsuguda, F/C 5.6 kA	Information yet to be received	No autoreclose operation observed in PMU data	No	No	
25	400 KV RANCHI - ROURKELA - II	26.05.17	16:34	26.05.17	17:07	Y-N FAULT	<100	Y-N, 94.21 km from Ranchi, F/C 3.3 kA	Y-N, 49.35 km from RKL, F/C 5.722 kA, A/R successful at RKL	No autoreclose operation observed in PMU data	No	Yes	
26	400 KV RANCHI - ROURKELA - I	26.05.17	17:08	26.05.17	18:36	R-N FAULT	<100	R-N, 105 km from Ranchi, 2.09 kA	R-N, 2.65 km from RKL, F/C 17.02 kA, A/R started but within 30 ms A/R lock out operated	No autoreclose operation observed in PMU data	No	Yes	Reason for A/R L/O at Rourkela may be explained
27	400 KV JHARSUGUDA - IBEUL - II	26.05.17	19:50	27.05.17	21:46	Y-N FAULT	<100	Y-N, Z-II, 21 km from Jharsuguda, F/C 10.5 kA, A/R not attempted	R-Y-B	No autoreclose operation observed in PMU data	Yes	Yes	Z-II is instantaneous at Jharsuguda end. Even fault at Z-I will be cleared in Z-II with Zero time delay.
28	400 KV MERAMUNDALI-STERLITE - I	31.05.17	19:56	31.05.17	21:29	Y-N FAULT	<100	Information yet to be received	Information yet to be received	No autoreclose operation observed in PMU data	No	No	