

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

Eastern Regional Power Committee

14, गोल्फ क्लब रोड, टालीगंज, कोलकाता-700033 14 Golf Club Road, Tollygunj, Kolkata-700033

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NO. ERPC/PROTECTION/2021/8816

DATE: 03.03.2021

To,

As per list enclosed,

Sub: Notice for 100th Protection Coordination sub-Committee (PCC) meeting of ERPC

Sir,

Notice is hereby given that 100th PCC meeting of ERPC will be held on 12th March 2021 (Friday) from 10:30hrs 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:

Kumar Satyam, Asst. Director-II, ERPC, Mob: 7355225072, E-mail: satyam24365@gmail.com

The tentative agenda items for discussion will be as follows:

- 1) Confirmation of the minutes of 99th Protection sub-Committee Meeting of ERPC.
- 2) Analysis of following grid disturbances of February 2021:

Sr. No	GD/ GI	On 15-02-2021, S/C was under Tashiding HI overhauling. Tash of the grid v S/C. At 14:30 hr S/C tripped or		Summary	Load loss (MW)	Gen loss (MW)	
1	GD-1			THEP	On 15-02-2021, 220 kV THEP – New Melli S/C was under shutdown and unit 1 at Tashiding HEP was under annual overhauling. Tashiding was connected to rest of the grid via 220 kV THEP – Rangpo S/C. At 14:30 hrs, 220 kV THEP – Rangpo S/C tripped on B phase to earth fault resulting in grid disturbance at THEP.	0	34
2	GD-1	17-02-2021	19:56	THEP	On 17-02-2021 at 19:56 hrs, 220 kV THEP – New Melli S/C and 220 kV THEP – Rangpo S/C tripped on R and B phase fault resulting in total generation loss and blackout at 220kV THEP	0	48

- 3) Single line tripping incidences of transmission lines for month of February 2021 is enclosed at Annexure -1.
- 4) Islanding Schemes of Eastern Region

- 5) Analysis of following Grid Events of February 2021-
 - I. Grid event at 220/132 kV Chandrapura A TPS on 10-02-2021 at 08:09 hrs
 - II. Grid event at Meramundali on 21-02-2021 at 07:23 hrs
 - III. Bus tripping occurred in Eastern Region
 - a) Tripping of 400 kV Bus 1 and 2 at 400/220 kV Jeerat S/s on 17-02-2021 at 13:52 hrs
 - b) Tripping of 400 kV Bus 2 at 400/220 kV Baripada S/s on 23-02-2021 at 15:39 hrs
 - c) Tripping of 220 kV Bus 2 at 220/132 kV Budipadar S/S on 27-02-2021 at 17:27 hrs
 - Repeated pole block of HVDC Talcher Kolar
 - V. Repeated Tripping of GMR TPS unit 2

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.

Your participation in the meeting is highly solicited.

Yours faithfully,

(D. K. Bauri)

Superintending Engineer(O& PS)

LIST OF ADDRESSES:

Chief Engineer, Trans (O&M) Bihar State Power Transmission Limited, Vidyut Bhawan, Bailey Road, Patna-800021	Electrical Superintending Engineer (CRITL) Bihar State Power Transmission Limited, Vidyut Bhawan, Bailey Road, Patna-800021
Chief Engineer (SLDC) Damodar Valley Corporation, GOMD-I Premises, P.O DaneshSeikh Lane, Howrah- 711109	Chief Engineer (CTC) Damodar Valley Corporation, P.O. Maithon Dam, Dist. Dhanbad, Jharkhand-828207
Chief Engineer, (CRITL)	Electrical Superintending Engineer (CLD)
Jharkhand UrjaSancharan Nigam Limited	Jharkhand UrjaSancharan Nigam Limited,
Kusai Colony, Doranda, Ranchi-834002	Kusai Colony,Doranda, Ranchi-834002
Chief General Manager (O&M),	Sr. General Manager (PPA), Technical Wing,
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Dy. Chief Engineer (Testing)/ Sr. Manager (Testing) CESC Ltd.,4, SasiSekhar Bose Road,	General Manager (O&M) KhSTPS, NTPC Ltd., P.O. Deepti Nagar,
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General Manager(O&M) FSTPS, NTPC Ltd., P.O. Nabarun, Dist. Murshidabad, West Bengal-742236	Dy. General Manager (Engineering), WBPDCL, 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., LoknayakJaiprakashBhawan, (2 nd Floor), DakBunglowChawk, Patna-800001	Manager (Electrical), Adhunik Power & Natural Resources Ltd. "Lansdowne Towers, Kolkata-700020 (Fax No. 033-2289 0285)
Executive Director (O&M) NHPC Ltd., NHPC Office Complex, Sector-33, Faridabad, Haryana-121003 (Fax-01292272413)	Electrical Superintending Engineer, TTPS, TenughatVidyut 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
Executive Director, ERLDC, POSOCO, Tollygunge, Kolkata-700033	Head Construction, ENCIL, Siliguri-7340051
General Manager (OS), ER-II Power Grid Corporation of India Ltd., J-I-15, Block-EP, Sector-V,Salt Lake,Kolkata-91	ShriA.K.Nayak/ShriSumit S Ghosh Maithon Power Limited, Maithon Office, MA 5 Gogna, Dist. Dhanbad, Jhankand State, PIN-828207
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New Delhi-110001 Managing Director, Bhutan Power Corporation Post Box no. 580, Thimpu, Bhutan.	Managing Director, Druk Green Power Corprn. P.O. Box-1351, Thimpu, Bhutan.
General Manager, Darbhanga (Bihar), DarbhangaMotihari Transmission Company Limited (DMTCL)	ShriBrajesh Kumar Pande, Plant Head, JITPL. (FAX:011-26139256-65)
Shri D. P. Bhagava, Chief Consultant (O&M), TeestaUrja Limited, New Delhi (FAX:011- 46529744)	Director (GM Division), Central Electricity Authority SewaBhawan, R. K. Puram, New Delhi-110066
Director (NPC), CEA, NRPC Building, KatwariaSarai, New Delhi- 110016	President, Dans Energy Pvt. Ltd, 5th Floor, DLF Building No. 8, Tower-C, Gurgaon - 722OO2
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President, TPTL, Bhikaji Cama Place, New Delhi, 110066	

	List	t of imp	orta	nt transmission lines i	n ER wh	ich tr	ippe	d in February-2021			
S.NO	LINE NAME	TRIP DATE	TRI P TI ME	Relay Indication LOCAL END	Relay Indicati on REMOT E END	Reas on	Fault Clear ance time in msec	Remarks	DR CONFIGUR ATION DESCREPA NCY	DR/EL RECEI VED FROM LOCA L END	FR OM RE
1	400KV-MEERAMUNDALI- BOLANGIR-1	02-02-2021	15:06	Meeramundali: B-N, 7.56kA, 65.9km	BN, Z2, 1.16KA, 196km	B-Earth	<100	B-phase Fault, A/R operated unsuccessful.		YES	NO
2	220KV-FSTPP-LALMATIA-1	04-02-2021	16:17	Line tripped from Farakka end, no fault observed in PMU. Details awaited		NO FAULT	N/A	No fault in line reason for tripping may be expalined .		NO	NO
3	400KV-MEERAMUNDALI- BOLANGIR-1	04-02-2021	01:29	BOLANGIR-B-N ,2.09 KA, 58KM ,OVERVOLTAGE STAGE-2,	MEERAUM INDALI : DT RECEIVED	B-Earth	<100	Fault in b phase and ,B pole breaker tripped but during dead time high voltage in B phase oberved at bolangir due to secondar arcing which lead to o/v stg-2 operation and line tripping. Reactor tripping scheme implemented.		YES	NO
4	400KV-MEERAMUNDALI-TSTPP-2	05-02-2021	15:07	Meramundali-B-N, Ib- 20.6 KA, 12 KM		B-Earth	<100	B phase fault ,but ALL three phase voltage increased to a very high value upto 900 kv at the instant of fault .A/R was unsuccessful .	DR time frame very less at meramundali end ,only of 100 ms .Needs to be configured properly.	YES	NO
5	220KV-CHANDIL-STPS(WBPDCL)-1	05-02-2021	19:23	STPS-Z1 R-N FD-12.72km FC-6.64kA		R-Earth.	500	No A/R observed FROM STPS tripped immediately but from Chandil end although Z-1 started still delayed clearance of 500 ms observed .Why?	CB status at Chandil not configured.	YES	NO
6	400KV-MEERAMUNDALI-TSTPP-1	05-02-2021		Meramundali-B-N FC-7.4kA FD-26km		B-Earth	<100		DR time frame very less at meramundali end ,only of 100 ms .Needs to be configured	YES	NO
7	400KV-BINAGURI-TALA-2	06-02-2021	10:59	DT received at Binaguri,	Tala-Z2 , Y- N Fault , I y=1.26kA FD-146.7km	Y-Earth	<100	A/R was successful but after 200 ms line tripped due to fault.		NO	NO

8	400KV-DSTPS(ANDAL)- RAGHUNATHPUR-1	06-02-2021	16:17	RTPS-Z1, Y-N, FC(IL1) : 760A IL2 4264A IL3 1162A FD-70.50KM		Y-Earth	<100	Multiple Y-earth faults observed .A/R unsuccessful from RTPS end.At DSTPS end seems TCB not opened at the instant of fault and at the instance of A/R unsuccessful also TCB not opened then after 2 seconds again Y fault observed and TCB opened.		YES	YE S
9	400KV-NEW PPSP-ARAMBAGH-2	06-02-2021	22:41	nPPSP y-N;Z1.2.513 ka 134.4 kM ,BAD WEATHER REPORTED	Arambag-Y- N, Z-1, 68.5kM, 5kA, NPPSP- Y-N, 135km, 2.5kA	Y-Earth	<100			NO	NO
10	400KV-RANGPO-TEESTA-V-1	06-02-2021	22:27	TRIPPED WHILE ATTEMPTING RANGPO KISHANGANJ OVERVOLTAGE STAGE 1		O/V - STG-1	N/A	While charging the line Rangpo -Kishanganj from Rangpo end ,Voltage of Rangpo became high as L/R was not pre-closed and Fault level of Rangpo was also very low due to nill hydro generation and outage ofMultiple lines from Rangpo .Reason for not pre -closing Reactor may be shared?		NO	NO
11	220KV-TASHIDING-RANGPO-1	06-02-2021	22:27	86 RELAY AT TASHIDING	O/V at Rangpo operated.	O/V - STG-1	N/A	While charging the line Rangpo -Kishanganj from Rangpo end ,Voltage of Rangpo became high as L/R was not pre-closed and Fault level of Rangpo was also very low due to nill hydro generation and outage ofMultiple lines from Rangpo .Reason for keeping O/V protection at 220 Kv may be shared		NO	NO
12	400KV-KISHANGANJ(PG)-RANGPO-1	06-02-2021	21:57	189 KM FROM KISHANGANJ ,2.347 KA,B-N; 2.06 k dir e/f b-n from rangpo		B-Earth	1500	B -Earth high resisitive fault .		NO	NO
13	400KV-NEW DUBURI- MEERAMUNDALI-1	06-02-2021	12:24	Tripped from Meeramundali only during A/r of 400 KV Meeramundali-Mendhasal II which is in same dia.		NO FAULT	N/A		DR time frame very less at meramundali end ,only of 100 ms .Needs to be	NO	NO
14	400KV-KHARAGPUR-KOLAGHAT-1	11-02-2021	04:32	9.204KA. KTPP end: Z1, Y-N, 43.68KM, 4.751 KA.		Y-Earth	<100	A/R unsuccessful.		NO	YE S
15	400KV-MEERAMUNDALI- MENDHASAL-II	13-02-2021	14:09	Meeramundali: R_N, 30.5 KM, 6.62 kA; A/r successful from Mendhasal end		R-Earth	<100	A/R successful from Mendhasal end only ,Why not from Meramundali?	DR time frame very less at meramundali end only of 100	YES	YE S
16	400KV-KHSTPP-BARH-2	13-02-2021	01:19	O/v stage-1		O/V	NA	At the instant of charging of line tripped on O/V-Stg-1 .O/V setting may be shared.		YES	YE S
17	400KV-KHSTPP-BARH-2	13-02-2021	00:02	Barh: R-E fault, Zone-1/KHSTPP- R-E, ZOne- 1,fault distance 56%,fault current-4.01		R-earth	<100	A/R unsuccessful.		YES	YE S

18	400KV-KOLAGHAT-KHARAGPUR-2	14-02-2021		Z1 R PHASE FAULT DISTANCE:7.95 KM fAULT_CURRENT 7.435KA;A/R LOCKOUT AT KTPP END(Z1)	ZZ R PHASE FAULT DISTANCE: 86.3 KM fAULT_CU RRENT	R-earth	<100			YES	NO
19	220KV-JAMSHEDPUR-JINDAL-1	14-02-2021		R-N,Z1,128.365 KM ,1.1729 KA FROM JAMSHEDPUR DVC F/C 1.865KA I		R-earth	<100			NO	NO
20	220KV-TASHIDING-RANGPO-1	15-02-2021		B-N FAULT, 30.7KM FROM RANGPO END, FAULT CURRENT 1.7 KA		B-Earth	1500	High resistive fault observed at Tashding end.		YES	NO
21	400KV-TSTPP-MEERAMUNDALI-1	16-02-2021		INITIALLY B-ERATH FAULT THEN AT THE INSTANT OF A/R GOT CONVERTED TO Y-B PHASE FAULT AT 42KM FROM MERAMUNDLAI WITH F/C-14.6KA . AT TALCHER ,Y-B , Z-1 , F/C-12.6KA		Y-B	<100	INITIALLY B-ERATH FAULT THEN AT THE INSTANT OF A/R GOT CONVERTED TO Y-B PHASE FAULT	DR time frame very less at meramundali end ,only of 100 ms .Needs to be		YE S
22	400KV-RANCHI-RAGHUNATHPUR- 3	16-02-2021		B-N , F/D-5.9KM , F/C-14.9KA (RANCHI) ,RTPS END :B-N , F/C-2.1 KM , F/D- 155.5KM		B-Earth	<100			NO	NO
	765KV-DHARAMJAIGARH- JHARSUGUDA-2	16-02-2021		Y-N ,Z-1, F/D-100KM FROM JHARSUGUDA,F/C-5.18KA		Y-Earth	<100			NO	NO
24	220KV-NEW MELLI-TASHIDING-1	17-02-2021		R-B,IB=4.459 KA,18 KM FROM NEW MELLI Z1, -8.217 KM,46.76 A		R-B	<100	From new melli end seems A/R was successful but at tashding end Phase to phase fault detected.		NO	YE S
25	220KV-TASHIDING-RANGPO-1	17-02-2021		R-B FAULT 12 A IN IR ,4.3 KA IN IB,75 KM ,ZONE 2 AT RANGPO 32.49 KM FROM TASHIDING,Z1,B- N,IB=94.62A		R-B	<100	For the fault in one circuit both lines tripped , actual Fault location and reason may be shared?Seems fault was in Tashding -rangpo section		YES	NO
	400KV-JEERAT-NEW CHANDITALA-1	17-02-2021	13:52	dt receipt zat remote end		NO FAULT	N/A	Tripped due to jeerat bus tripping.		NO	NO
27	400KV-RAJARHAT-JEERAT-1	17-02-2021	13:52	dt receipt zat remote end		NO FAULT	N/A	Tripped due to jeerat bus tripping.		NO	NO

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28	400KV-JEERAT-SAGARDIGHI-1	17-02-2021	13:52	dt receipt zat remote end		NO FAULT	N/A	Tripped due to jeerat bus tripping.	NO	0	NO
29	400KV-JEERAT-BAKRESWAR-1	18-02-2021		Jeerat end: C-N, SOTF-TOR, fault current=2.608kA, dist=118.7km BkTPP end: Z1, 33.9 KM, B phase, 86 2C, 186A, 186 B, 79/152X		B-Earth	<100	Conductor snapping	N	0	YE S
30	220KV-TSTPP-MEERAMUNDALI-2	21-02-2021	07:24	Talcher: B phase, Z1		B-Earth	<100		NO	0	YE S
31	400KV-BARIPADA(PG)-NEW DUBURI-1	22-02-2021	13:45	Baripada-Z1 R-N FC-12.74kA FD-6.9km		R-Earth	<100	At the instant of fault all 3 phase tripping from n dubri end .No A/R from new dubri as A/R was under s/d.	NO	0	YE S
32	400KV-FSTPP-MALDA(PG)-1			DT received at FSTPP		NO FAULT	N/A		NO	0	NO
33	400KV-FSTPP-MALDA(PG)-1			Master relay operated at FSTPP		NO FAULT	N/A		N	0	NO
34	220KV-RENGALI(PH)-TSTPP-1	24-02-2021	14:20	Rengali end : Zone-1, R phase-earth, 19.24 km,3.303 kA;	TSTPP: zone- 1, 15 kM, 5.42 kA ,R Phase	R-Earth	<100	No A/R observed.	N	0	NO
35	220KV-KATAPALLI-BOLANGIR(PG)- 1	24-02-2021	14:16	Katapalli: Zone-1, YB phase fault, Current-09.7 kA	PG end: No tripping,	NO FAULT	N/A	Tripped on external fault.Which protection operated? As no zone pickedup in DR.	YI	ES	NO
36	220KV-BOLANGIR(PG)- BOLANGIR(GRIDCO)-2	24-02-2021	14:16	Bolangir PG : YB ph, IY- 1.6 KA IB-1.49 KA, Dist 2.9 Km;	Sadaipalli: Zone-4, 84.3 kM , 1.433 KA, YB phase	Y-B	350		NO	0	NO

37	400KV-MEERAMUNDALI- MENDHASAL-II	24-02-2021	13:17	Mendhasal:R-N,Z1,FD 36.3km,Ir-5.49 kA		R-Earth	<100	At the instance of charging tripped after 300 ms ,delayed .Distance protection picked up,still why SOTF caused delayed tripping needs to be checked as it is not fulfilling the purpouse of SOTF protection.	DR time frame very less at meramundali end ,only of 100 ms .Needs to be configured		NO
38	400KV-DURGAPUR-JAMSHEDPUR-1	25-02-2021	15:00	DGP: B-N,37.9 KM,6.39 kA ZI WEATHER NORMAL j	AMSHEDP UR B-N 2.736 KA,141 KM(AFAS)	B-Earth	<100			NO	YE S
39	220KV-KHAGARIA-NEW PURNEA-2	25-02-2021	13:07	5.8 km B-N,IB=1.469 KA FROM KHAGARIA ,WEATHER NORMAL	PROM PURNEA END A/R SUCCESSF ULL 30.8 KM,2.60 KA,b-N	B-Earth	<100	From Purnea A/R was successful but no A/R from Khagaria.		NO	YE S
40	220KV-DURGAPUR-WARIA-1	25-02-2021	12:24	Z1 BN FAULT 4.46KA 14.25KM Waria END	At DIPS:- Distance Protection ,Zone #1, B- Phase, F/distance:- Dvc end Y-B	B-Earth	<100			NO	NO
41	220KV-MAITHON-DHANBAD-1	25-02-2021	11:30	MAITHON END : YB FAULT, 25.79KM Iy=6.8KA, Ib=6.3KA weather normal	phase, Zone-I with distance 23.87 km in M1 & 24.15	Y-B	<100			NO	NO
42	220KV-ARRAH (PG)-Dumraon New-1	25-02-2021	10:00	Dt receipt at bseb end	PG:no trip	NO FAULT	N/A			NO	NO
43	220KV-MUZAFFARPUR(PG)-HAZIPUR-2	26 02 2024	14:20	B-N fault, 26 km from Mz'fr end, 4.8 KA		B-Earth	<100			NO	NO

44	400KV-ROURKELA-CHAIBASA-2	26-02-2021	12:59	CHAIBASA: B-N, FD-13.5KM, FC-17.55KA; ROURKELA: B-N, 2.11KA, 100% DISTANCE		B-Earth	<100		NO	NO
45	400KV-JAMSHEDPUR-CHAIBASA(PG)-2	26-02-2021	12:50	CHAIBASA: B-N, FD-0.366KM, FC-4.359KA		B-Earth	<100		NO	NO
46	400KV-MERAMUNDALI-LAPANGA-1	27-02-2021		MERAMUNDALI END :- YB FAULT 2.44KA 191 KM	END :- YB FAULT 3.4KA, 1 KM	Y-B	<100	TCB at Lapanga end opened instantly but MCB opened after 200 ms delay which caused fault feeding till 250 ms ,although fault was in z-1 .This may please be checked .	YES	YE S
47	220KV-BUDHIPADAR-KORBA-2	27-02-2021	17:27	220KV MAIN BUS-2 AT BUDHIPADAR TRIPPED LEADING TO TRIPPING OF ALL FEEDERS CONNECTED TO IT.		Y-B	<100		NO	NO
48	220KV-CHANDIL-STPS(WBPDCL)-1	27-02-2021	13:45	Chandil-A/R succesful	STPS-Z1, B- Phase, 90.11km, 1.722kA	B-Earth	<100	A/R successful from only chandil end .	YES	NO
49	220KV-MUZAFFARPUR(PG)-HAZIPUR-2	26-02-2021	14:29	B-N fault, 26 km from Mz'fr end, 4.8 KA		B-Earth	<100		NO	NO
50	400KV-GMR-ANGUL-2	28-02-2021	15:59	tracking was observed at tower no 85 from PGCIL end		Y-Earth	<100	A/R unsuccessful.	NO	NO
51	400KV-BARIPADA-KHARAGPUR-1	28-02-2021	12:13	KGP: Z1, Y-N, 45.56Km, 4.24kA		Y-Earth	<100		NO	NO
52	220KV-TSTPP-MEERAMUNDALI-2	28-02-2021	12:02	TSTPP: R_N, 35.9 KM, 4 kA		R-Earth		From DR it is clear that auto reclsoe was successful but after 800 ms of successful A/R, line tripped but no fault was noticed .Reason for tripping may be shared.	NO	YE S
53	400KV-PPSP-BIDHANNAGAR-2	28-02-2021	11:47	PPSP: B_N, 39.8 KM	Bidhannagar :B_N, 114 KM, 1.94 kA	B-Earth	<100	No A/R at PPSP end .	NO	NO
54	400KV-NEW PPSP-ARAMBAGH-1	28-02-2021	11:32	arambagh end - Y-N fault , fc-3,28 ka , FD-112.4 km Z1 ,	end - Y-N fault , FC- 3.48 KA , FD - 90.8 KM Z1	Y-Earth	<100	A/R unsuccessful .	NO	NO