



सत्यमेव जयते

भारतसरकार

Government of India

विद्युतमंत्रालय

Ministry of Power

उत्तरक्षेत्रीयविद्युतसमिति

Northern Regional Power Committee

NRPC/OPR/105/09/ 2018/ 11681 - 11698

Dated: 05/10/2018

As per list attached.

**Subject: - Replacement and Cleaning of Insulators of lines in Northern Region - Reg.**

Sir/Madam,

Northern Regional power transmission lines are exposed to the high pollution levels along their routes. Such pollution levels with the onset of the winter season, lead to the frequent trippings and finally to breakdown and long outages of the transmission lines. These outages make the grid weak, thereby endangering the grid reliability and security.

Therefore, in order to avoid/mitigate trippings of lines during foggy (smog) weather in winter season, preventive actions like cleaning/washing of insulators, replacement to conventional insulators with polymer insulators has been recommended and are being taken every year. This being a regular activity, all the transmission licensees in the Northern Region are being requested in monthly OCCM to update line wise data for insulator replacement and cleaning in the format available on NRPC website.

The data as available with NRPC is attached at Annexure-I. The concerned transmission licensees are requested to kindly verify and update the same. Further, the transmission licenses are requested to kindly identify the lines for insulator replacements and insulator cleaning for the year 2018-19 and submit the action plan in formats attached herewith at Annexure-II by 12.10.2018.

A review meeting to discuss the action plan vis-a-vis progress of replacement of conventional insulators with polymer insulators and cleaning of insulators in Northern Region is proposed to be held at 10:30 hrs on 15.10.2018 at NRPC, New Delhi.

It is requested to kindly depute concerned officer(s) to attend the meeting along with the complete details as requested above.

Sincerely,

SE (Operations)

Copy to: ED, NRLDC, New Delhi-with a request to kindly depute the concerned to attend the meeting.

## LIST

1. Director (Operation), Power Grid, Gurugram.
2. Member, Power, BBMB, Chandigarh.
3. Director (Operation), DTL, New Delhi.
4. Director (Technical), PSTCL, Patiala.
5. Director (Operation), UPPTCL, Lucknow.
6. Director (Technical), HVPNL, Panchkula.
7. Director (Technical), RRPVNL, Jaipur.
8. Director (Electrical Engineering-PS), Railway Board, Rail Bhavan, New Delhi.
9. CED, North Central Railway, Allahabad.
10. CED, Northern Railways, New Delhi.
11. CEO, POWERLINKS Transmission Limited, New Delhi.
12. ED, POWERGRID, NR-I, New Delhi.
13. ED, POWERGRID, NR-II, Jammu.
14. ED, POWERGRID, NR-III, Lucknow.
15. Senior VP (O&M), Adani Transmission Limited, Ahmedabad.
16. CEO Aravali Power Company Private Limited.
17. CEO ,PKTCL, Gurugram.
18. CEO, Sterlite Power Transmission Limited, New Delhi.

ANNEXURE-1

Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
<b>1. HVDC lines</b>										
<b>A. POWERGRID</b>										
<b>± 800kV HVDC</b>										
1	Agra-Bishwanath Chariali Pole-I	1	Bi-pole	1728	Hexagon Lapwing	POWERGRID	POWERGRID	POWERGRID	Partial (11%)	Interconnection between North East region & Northern Region
2	Agra-Bishwanath Chariali Pole-II	2	Bi-pole	1728	Hexagon Lapwing	POWERGRID	POWERGRID	POWERGRID	Partial (11%)	
3	Kurukshetra-Champa Pole-I	1	Bi-pole	1305	Hexagon Lapwing	POWERGRID	POWERGRID	POWERGRID	Partial (11%)	
4	Kurukshetra-Champa Pole-II	2	Bi-pole	1305	Hexagon Lapwing	POWERGRID	POWERGRID	POWERGRID	Partial (11%)	
<b>± 500kV HVDC</b>										
1	Balia-Bhiwadi Pole-I	1	Bi-pole	790	ACSR Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Partial (15%)	
2	Balia-Bhiwadi Pole-II	2	Bi-pole	790		POWERGRID	POWERGRID	POWERGRID	Partial (15%)	
3	Rihand-Dadri Pole-I	1	Bi-pole	815	ACSR Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Partial (62%)	
4	Rihand-Dadri Pole-II	2	Bi-pole	815		POWERGRID	POWERGRID	POWERGRID	Partial (43%)	
<b>B. Adani Power Ltd (Adani Transmission India Ltd.)</b>										
1	Adani Mundra - Mahindergarh Pole-I	1	Bi-pole	990	ACSR Quad Bersimis	ATIL	APL Mundra	APL	Partial (7%)	Interconnection between Western region & Northern Region
2	Adani Mundra - Mahindergarh Pole-II	2	Bi-pole	990		ATIL	APL Mundra	APL	Partial (7%)	
<b>2. 765kV Transmission Line</b>										
<b>A. POWERGRID</b>										
1	Agra-Fatehpur	1	S/C	335	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Conventional	Check the status of LILO portion??
2	Agra-Fatehpur	2	S/C	334	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Conventional	
3	Agra-Aligarh	1	D/C	123	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
4	Aligarh-Gr.Noida	2	D/C	51	Quad Bersimis	POWERGRID	POWERGRID	WUPPTCL	Polymer Insulator	
5	Agra-Jhatikara	1	S/C	252	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
6	Ajmer-Chittorgarh	1	D/C	211	Hexa Zebra	POWERGRID	POWERGRID	POWERGRID	Not Available	
7	Ajmer-Chittorgarh	2	D/C	211	Hexa Zebra	POWERGRID	POWERGRID	POWERGRID	Not Available	
8	Balia - Lucknow765 (N)	1	S/C	319	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Conventional	
9	Jhatikara-Bhiwani (PG)	1	S/C	85	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
10	Jhatikara-Aligarh	1	D/C	158	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
11	Kanpur(GIS)-Aligarh	1	D/C	322	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
12	Lucknow-Bareilly	1	S/C	252	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Conventional	
13	Meerut-Bhiwani(PG)	1	S/C	174	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Partial (99%)	
14	Meerut-Gr.Noida	1	S/C	119	Quad Bersimis	POWERGRID	POWERGRID	WUPPTCL	Polymer Insulator	LILO of Agra-Meerut (267 KM) line at Gr. Noida
15	Moga- Bhiwani (PG)	1	S/C	273	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Partial (96%)	
16	Moga-Meerut	1	S/C	338	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
17	Orai-Aligarh	1	D/C	331	Hexa Zebra	POWERGRID	POWERGRID	POWERGRID	Not Available	
18	Orai-Aligarh	2	D/C	331	Hexa Zebra	POWERGRID	POWERGRID	POWERGRID	Not Available	
19	Phagi-Bhiwani(PG)	1	S/C	272	Quad Bersimis	POWERGRID	RRVNL	POWERGRID	Partial (18%)	
20	Phagi-Bhiwani(PG)	2	S/C	277	Quad Bersimis	POWERGRID	RRVNL	POWERGRID	Partial (16%)	
21	Varanasi-Balia	1	S/C	166	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Conventional	
22	Varanasi-Fatehpur	1	S/C	223	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Gaya (ER)-Fatehpur at Varanasi
23	Varanasi-Kanpur(GIS)	1	S/C	326	Hexa Zebra	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
24	Varanasi-Kanpur(GIS)	2	S/C	326	Hexa Zebra	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks	
							End-I	End-II			
<b>B. UPPTCL</b>											
1	AnparaC-Unnao	1	S/C	409	Quad Bersimis	UPPTCL	LANCO	UPPTCL	Conventional	AnparaB-Unnao shifted to AnparaC and charged at 765kV	
2	AnparaC-AnparaD	1	S/C	3	Quad Bersimis	UPPTCL	LANCO	UPRVUNL	Not Available		
3	Agra(Fatehbad)-Lalitpur	1	S/C	337	Quad Bersimis	UPPTCL	UPPTCL	LPGL	Not Available		
4	Agra(Fatehbad)-Lalitpur	2	S/C	335	Quad Bersimis	UPPTCL	UPPTCL	LPGL	Not Available		
5	Bara-Mainpuri	1	S/C	377	Quad Bersimis	UPPTCL	UPPTCL	UPPTCL	Not Available		
6	Gr. Noida-Hapur	1	S/C	65	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available		
7	Gr. Noida-Mainpuri	1	S/C	181	Quad Bersimis	UPPTCL	UPPTCL	UPPTCL	Not Available		
<b>C. RRVPNL</b>											
1	Anta-Phagi	1	S/C	214	Quad Bersimis	RRVPNL	RRVPNL	RRVPNL	Not Available		
2	Anta-Phagi	2	S/C	212	Quad Bersimis	RRVPNL	RRVPNL	RRVPNL	Not Available		
<b>3. 765kV Transmission Line charged at 400kV</b>											
<b>A. POWERGRID</b>											
1	Kishenpur-Moga	1	S/C	275	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Partial (1%)		
2	Kishenpur-Moga	2	S/C	287	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Partial (1%)		
3	Tehri-Tehri pooling	1	S/C	15	Quad Bersimis	POWERGRID	POWERGRID	THDC	Conventional	LILoed at Tehri Pooing, Tehri Pooling-Meerut is 50% series compensated line	
4	Tehri-Tehri pooling	2	S/C	17	Quad Bersimis	POWERGRID	POWERGRID	THDC	Conventional		
5	Tehri Pooling-Meerut	1	S/C	176	Quad Bersimis	POWERGRID	THDC	POWERGRID	Conventional		
6	Tehri Pooling-Meerut	2	S/C	179	Quad Bersimis	POWERGRID	THDC	POWERGRID	Conventional		
7	Rihand-Vindhyachal Pool	1	S/C	31	Quad Bersimis	POWERGRID	NTPC	POWERGRID	Not Available		
8	Rihand-Vindhyachal Pool	2	S/C	31	Quad Bersimis	POWERGRID	NTPC	POWERGRID	Not Available		
<b>4. 400kV HVAC Transmission Line</b>											
<b>A. POWERGRID</b>											
1	Abdullapur- Bawana	1	D/C	167	Triple Snowbird	POWERGRID	POWERGRID	DTL	Partial (99%)		
2	Abdullapur- Deepalpur	1	D/C	141	Triple Snowbird	POWERGRID	POWERGRID	KT Jhajar	Partial (99%)	LILo of Abdullapur-Bawana one ckt at Deepalpur	
3	Abdullapur-Kurukshetra	1	D/C	52	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILo of Abdullapur-Sonepat ckts at Kurukshetra	
4	Abdullapur-Kurukshetra	2	D/C	52	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator		
5	Agra-Agra(Fatehbad)	1	S/C	45	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Polymer Insulator		
6	Agra(UP)-Agra(Fatehbad)	1	S/C	56	Twin Moose	POWERGRID	UPPTCL	UPPTCL	Polymer Insulator		
7	Agra-Agra(UP)	1	D/C	30	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Polymer Insulator		
8	Agra-Ballabgarh	1	S/C	181	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator		
9	Agra-Bassi	1	S/C	211	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	Planned for insulator replacement in 321nos towers under NR3	
10	Agra-Bhiwadi	1	D/C	209	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator		
11	Agra-Bhiwadi	2	D/C	209	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator		
12	Agra-Jaipur South	1	D/C	254	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (4%)	LILo of Agra-Bassi D/C at Jaipur South	
13	Agra-Jaipur South	2	D/C	254	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (4%)		
14	Agra-Sikar	1	D/C	386	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (3%)		
15	Agra-Sikar	2	D/C	386	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (3%)		
16	Ajmer-Ajmer(PG)	1	D/C	66	Quad Moose	POWERGRID	RRVPNL	POWERGRID	Not Available		
17	Ajmer-Ajmer(PG)	2	D/C	66	Quad Moose	POWERGRID	RRVPNL	POWERGRID	Not Available		
18	Allahabad-Fatehpur	3	S/C	154	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILo of Allahabad-Kanpur one ckt at Fatehpur	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
19	Allahabad-Fatehpur	1	D/C	140	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Allahabad-Mainpuri (363 KM) D/C at Fatehpur
20	Allahabad-Fatehpur	2	D/C	140	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Allahabad-Mainpuri (363 KM) D/C at Fatehpur
21	Allahabad-Varanasi	1	D/C	99	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Sarnath-Allahabad (144 KM) at 765/400kV Varanasi
22	Allahabad-Kanpur	1	S/C	225	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
23	Allahabad-Kanpur(New 765)	1	D/C	240	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
24	Allahabad-Kanpur(New 765)	2	D/C	240	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
25	Allahabad-Meja(NTPC)	1	D/C	28	Twin Moose	POWERGRID	POWERGRID	MUNPL	Polymer Insulator	MUNPL is joint venture between NTPC and UPRVUN
26	Allahabad-Meja(NTPC)	2	D/C	28	Twin Moose	POWERGRID	POWERGRID	MUNPL	Polymer Insulator	
27	Amritsar-Jalandhar	1	S/C	60	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
28	Amritsar-Jalandhar	2	D/C	71	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of 400kV Amritsar-Hamirpur at Jalandhar
29	Amritsar-Parbati Pooling (Banala)	1	D/C	251	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (49%)	
30	Auraiya-Agra	1	D/C	166	Twin Moose	POWERGRID	NTPC	POWERGRID	Partial (86%)	
31	Auraiya-Agra	2	D/C	166	Twin Moose	POWERGRID	NTPC	POWERGRID	Partial (90%)	
32	Bagpat-Kaithal	1	D/C	154	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
33	Bagpat-Kaithal	2	D/C	154	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
34	Bagpat-Saharanpur	1	D/C	121	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Partial (41%)	
35	Bagpat-Dehradun	1	D/C	165	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Partial (40%)	
36	Bahadurgarh-Kabulpur	1	S/C	42	Twin Moose	POWERGRID	POWERGRID	HVPNL	Polymer Insulator	LILO of Bahadurgarh-Bhiwani at Kabulpur
37	Bahadurgarh-Sonepat	1	D/C	53	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
38	Bahadurgarh-Sonepat	2	D/C	53	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
39	Balia-Mau	1	D/C	9	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Conventional	
40	Balia-Mau	2	D/C	9	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Conventional	
41	Balia-Sohawal	1	D/C	229	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Balia-Lucknow (316 KM) D/C at Sohawal
42	Balia-Sohawal	2	D/C	229	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Balia-Lucknow (316 KM) D/C at Sohawal
43	Ballabgarh-Gurgaon	1	S/C	43	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
44	Ballabgarh-Maharanibagh	1	D/C	61	Quad Bersimis	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
45	Ballabgarh-Nawada	1	D/C	13	Quad Bersimis	POWERGRID	POWERGRID	HVPNL	Polymer Insulator	Ballabgarh-Gnoida LILOed at Nawada (Faridabad,Haryana)
46	Bareilly PG-Moradabad	1	S/C	93	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Partial (3%)	
47	Bareilly PG-Moradabad	2	S/C	92	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Partial (23%)	
48	Bareilly PG-Bareilly (765kV)	1	D/C	2	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
49	Bareilly PG-Bareilly (765kV)	2	D/C	2	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
50	Bareilly PG(765kV)-Kashipur	1	D/C	101	Quad Moose	POWERGRID	POWERGRID	PTCUL	Partial (90%)	
51	Bareilly PG(765kV)-Kashipur	2	D/C	101	Quad Moose	POWERGRID	POWERGRID	PTCUL	Partial (90%)	
52	Bassi-Bhiwadi	2	S/C	220	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
53	Bassi-Heerapura	1	S/C	48	Twin Moose	POWERGRID	POWERGRID	RRVNL	Polymer Insulator	
54	Bassi-Heerapura	2	S/C	49	Twin Moose	POWERGRID	POWERGRID	RRVNL	Polymer Insulator	
55	Bassi-Kotputli	1	S/C	106	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Bassi-Bhiwadi-2 at Kotputli
56	Bassi-Phagi	1	D/C	48	Quad Moose	POWERGRID	POWERGRID	RRVNL	Partial (26%)	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
57	Bassi-Phagi	2	D/C	48	Quad Moose	POWERGRID	POWERGRID	RRVNL	Partial (26%)	
58	Bassi-Sikar	1	D/C	170	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (16%)	
59	Bassi-Sikar	2	D/C	170	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (17%)	
60	Bawana(CCGT)-Bahadurgarh	1	D/C	49	Twin Moose	POWERGRID	DTL/Pragati CCGT	POWERGRID	Polymer Insulator	
61	Bhinmal-Kankroli	1	D/C	202	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
62	Bhiwadi-Gurgaon	1	S/C	83	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
63	Bhiwadi-Hissar	1	S/C	212	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
64	Bhiwadi-Hisar	2	D/C	144	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Bhiwadi-Moga both ckts at Hisar
65	Bhiwadi-Hisar	3	D/C	144	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
66	Bhiwadi-NeemranaPG	1	D/C	48	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
67	Bhiwadi-NeemranaPG	2	D/C	48	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
68	Bhiwani BBMB - Hisar	1	S/C	35	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
69	Bhiwani (PG) - Hisar	1	S/C	64	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Bawana-Hisar (132KM) at Bhiwani PG
70	Bhiwani (PG) - Hisar	2	D/C	57	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
71	Bhiwani (PG) - Hisar	3	D/C	57	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
72	Bhiwani PG - Jind	1	D/C	82	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
73	Bhiwani PG - Jind	2	D/C	82	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
74	Bhiwani PG- BawanaCCGT	1	D/C	97	Twin Moose	POWERGRID	POWERGRID	DTL/Pragati CCGT	Polymer Insulator	LILO of Bawana-Hisar (132KM) at Bhiwani PG
75	Bhiwani PG- Bhiwani BBMB	1	S/C	34	Twin Moose	POWERGRID	POWERGRID	BBMB	Polymer Insulator	LILO of Bhiwani (BBMB)- Bahadurgarh (84km) at Bhiwani (PG)
76	Bhiwani PG-Kabulpur	1	S/C	48	Twin Moose	POWERGRID	POWERGRID	HVPNL	Polymer Insulator	LILO of Bahadurgarh-Bhiwani at Kabulpur
77	Chamba pool - Jalandhar	1	D/C	162	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (48%)	
78	Chamba pool - Jalandhar	2	D/C	162	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (48%)	
79	Chamera-II - Chamba Pool	1	S/C	0.38	Twin Moose	POWERGRID	NHPC	POWERGRID	Conventional	Two tower is S/C and one tower is D/C
80	Chamera-II-Chamera-I	1	S/C	36	Twin Moose	POWERGRID	NHPC	NHPC	Conventional	
81	Chamera-II-Kishenpur	1	S/C	135	Twin Moose	POWERGRID	NHPC	POWERGRID	Conventional	
82	Chamera-I-Jalandhar	1	D/C	152	Twin ACAR	POWERGRID	NHPC	POWERGRID	Partial (43%)	
83	Chamera-I-Jalandhar	2	D/C	152	Twin ACAR	POWERGRID	NHPC	POWERGRID	Partial (43%)	
84	Chittorgarh-Chittorgarh(PG)	1	D/C	49	Quad Moose	POWERGRID	RRVNL	POWERGRID	Not Available	
85	Chittorgarh-Chittorgarh(PG)	2	D/C	49	Quad Moose	POWERGRID	RRVNL	POWERGRID	Not Available	
86	Chittorgarh-Kankroli	1	D/C	71	Twin Moose	POWERGRID	RRVNL	POWERGRID	Polymer Insulator	LILO of 400 kV Rapp C-Kankroli at Chhitorgarh
87	Dadri NCTPP-G. Noida	1	D/C	13	Quad Bersimis	POWERGRID	NTPC	UPPCL	Polymer Insulator	
88	Dadri NCTPP-Maharanibagh	1	D/C	54	Quad Bersimis	POWERGRID	NTPC	POWERGRID	Polymer Insulator	
89	Dadri NCTPP-Kaithal	1	S/C	213	Twin Moose	POWERGRID	NTPC	POWERGRID	Polymer Insulator	
90	Dadri NCTPP-Mandola	1	D/C	46	Quad Bersimis	POWERGRID	NTPC	POWERGRID	Polymer Insulator	
91	Dadri NCTPP-Mandola	2	D/C	46	Quad Bersimis	POWERGRID	NTPC	POWERGRID	Polymer Insulator	
92	Dadri NCTPP-Muradnagar New	1	S/C	33	Twin Moose	POWERGRID	NTPC	UPPTCL	Polymer Insulator	Line shifted from Muradnagar to Muradnagar New (UPPTCL)

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
93	Dadri NCTPP-Panipat	1	S/C	112	Twin Moose	POWERGRID	NTPC	BBMB	Polymer Insulator	
94	Dadri NCTPP-Panipat	2	S/C	117	Twin Moose	POWERGRID	NTPC	BBMB	Polymer Insulator	
95	Deepalpur-Bawana	1	D/C	26	Triple Snowbird	POWERGRID	KT-Jhajjar	DTL	Polymer Insulator	LILO of Abdullapr-Bawana one ckt at Deepalpur
96	Dehradun-Abdullapur	1	D/C	89	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
97	Dehradun-Abdullapur	2	D/C	89	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
98	Dulhasti-Kishenpur	1	S/C	120	Quad Moose	POWERGRID	NHPC	POWERGRID	Conventional	
99	Dulhasti-Kishenpur	2	S/C	120	Quad Moose	POWERGRID	NHPC	POWERGRID	Conventional	
100	Fatehbad PG-Hissar	1	D/C	89	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
101	Fatehpur-Kanpur	1	S/C	100	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Singrauli-Kanpur at Fatehpur
102	Fatehpur-Kanpur	2	S/C	107	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (64%)	LILO of Allahabad-Kanpur one ckt at Fatehpur
103	Fatehpur-Mainpuri	1	D/C	260	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Allahabad-Mainpuri (363 KM)
104	Fatehpur-Mainpuri	2	D/C	260	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	D/C at Fatehpur Series
105	G.Noida-Nawada	1	D/C	30	Quad Bersimis	POWERGRID	UPPTCL	HVPNL	Polymer Insulator	Ballabgarh-Gnoida LILOed at Nawada (Faridabad,Haryana)
106	Gorakhpur PG-Gorakhpur UP	1	D/C	46	Twin Moose	POWERGRID	POWERGRID	UPPCL	Polymer Insulator	Partial Planning has been completed
107	Gorakhpur PG-Gorakhpur UP	2	D/C	46	Twin Moose	POWERGRID	POWERGRID	UPPCL	Polymer Insulator	Partial Planning has been completed
108	Gorakhpur PG-Lucknow PG	1	D/C	264	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (3%)	At crossing
109	Gorakhpur PG-Lucknow PG	2	D/C	264	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (3%)	At crossing
110	Gurgaon-Manesar	1	D/C	18	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
111	Gurgaon-Manesar	2	D/C	18	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
112	Hamirpur-Parbati Pooling (Banala)	1	D/C	77	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Amritsar-Banala-1 at Hamirpur
113	Jaipur South-Bassi	1	D/C	84	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Agra-Bassi D/C at Jaipur South
114	Jaipur South-Bassi	2	D/C	84	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
115	Jalandhar-Nakodar	1	D/C	42	Quad Moose	POWERGRID	POWERGRID	PSTCL	Polymer Insulator	
116	Jalandhar-Hamirpur	1	D/C	135	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (43%)	LILO of 400kV Amritsar-Hamirpur at Jalandhar
117	Kaithal-Hissar	1	D/C	113	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Patiala-Hissar at Kaithal
118	Kaithal-Hissar	2	D/C	113	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Patiala-Hissar at Kaithal
119	Kaithal-Malerkotla	1	S/C	135	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
120	Kankroli-Jodhpur	1	S/C	188	Twin Moose	POWERGRID	POWERGRID	RRVNL	Conventional	
121	Kanpur-Agra	1	S/C	240	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
122	Kanpur-Auraiya	1	D/C	73	Twin Moose	POWERGRID	POWERGRID	NTPC	Conventional	
123	Kanpur-Auraiya	2	D/C	73	Twin Moose	POWERGRID	POWERGRID	NTPC	Conventional	
124	Kanpur-Ballabgarh	1	S/C	386	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	*Series Compensated,Ckt 1- 35%, Ckt-2 & 3-40%
125	Kanpur-Ballabgarh	2	D/C	371	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	*Series Compensated,Ckt 1- 35%, Ckt-2 & 3-40%
126	Kanpur-Ballabgarh	3	D/C	371	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	*Series Compensated,Ckt 1- 35%, Ckt-2 & 3-40%
127	Kanpur-Panki	1	S/C	6	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Polymer Insulator	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
128	Kanpur-Panki	2	S/C	6	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Polymer Insulator	
129	Kanpur-Kanpur(GIS)	1	D/C	21	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
130	Kanpur-Kanpur(GIS)	2	D/C	21	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
131	Kanpur(GIS)-Lucknow(765)	1	D/C	160	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
132	Kanpur(GIS)-Lucknow(765)	2	D/C	160	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
133	Kishenpur-NewWanpoh	1	D/C	130	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
134	Kishenpur-NewWanpoh	2	D/C	130	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
135	Kishenpur-NewWanpoh	3	D/C	135	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
136	Kishenpur-NewWanpoh	4	D/C	135	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
137	Kishenpur-Samba	1	D/C	35	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
138	Kishenpur-Samba	2	D/C	35	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
139	Kota-Merta	1	D/C	256	Twin Moose	POWERGRID	POWERGRID	RRVPL	Polymer Insulator	
140	Kotputli-Bhiwadi	1	S/C	132	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Bassi-Bhiwadi-2 at Kotputli
141	Kurukshetra-Jind	1	D/C	103	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
142	Kurukshetra-Jind	2	D/C	103	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Not Available	
143	Kurukshetra-Sonipat	1	D/C	125	Triple Snowbird (Twin HTLS	POWERGRID	POWERGRID	POWERGRID	Partial (99%)	LILO of Abdullapr-Sonepat ckts at
144	Kurukshetra-Sonipat	2	D/C	125	for LILOportion)	POWERGRID	POWERGRID	POWERGRID	Partial (99%)	Kurukshetra
145	Kurukshetra-Jalandhar	1	D/C	267	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
146	Kurukshetra-Nakodar	1	D/C	234	Quad Moose	POWERGRID	POWERGRID	PSTCL	Polymer Insulator	
147	Lucknow PG-Lucknow UP	1	S/C	63	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Conventional	
148	Lucknow PG-Unnao	1	D/C	74	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Conventional	
149	Lucknow PG-Unnao	2	D/C	74	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Conventional	
150	Lucknow UP-Bareilly PG	1	S/C	279	Twin Moose	POWERGRID	UPPTCL	POWERGRID	Conventional	
151	765 Lucknow (PG) - Lucknow (PG)	1	D/C	3	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
152	765 Lucknow (PG) - Lucknow (PG)	2	D/C	3	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
153	LucknowPG-Sohawal	1	D/C	98	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	LILO of Balia-Lucknow (316 KM) D/C at
154	LucknowPG-Sohawal	2	D/C	98	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	Sohawal
155	Lucknow PG-Shahjahanpur	1	D/C	170	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (10%)	
156	Lucknow PG-Shahjahanpur	2	D/C	170	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (10%)	
157	Ludhiana-Jalandhar	1	S/C	85	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
158	Ludhiana-Malerkotla	1	S/C	36	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
159	Ludhiana-Patiala	1	D/C	76	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
160	Ludhiana-Patiala	2	D/C	76	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
161	Mainpuri-Ballabgarh	1	D/C	236	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
162	Mainpuri-Ballabgarh	2	D/C	236	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
163	Malerkotla-Patiala	1	S/C	62	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
164	Meerut-Bagpat	1	D/C	71	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
165	Meerut-Bagpat	2	D/C	71	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
166	Meerut-Mandola	1	D/C	60	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
167	Meerut-Mandola	2	D/C	60	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
168	Meerut-MuzzaFarnagar	1	S/C	37	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Polymer Insulator	
169	Moga-Fatehabad	1	D/C	179	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
170	Moga-Hissar	1	D/C	209	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
171	Moga-Hissar	2	D/C	206	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Bhiwadi-Moga both ckts at
172	Moga-Hissar	3	D/C	206	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	Hisar



## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
173	Moga-Jalandhar	1	D/C	85	Twin ACAR	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
174	Moga-Jalandhar	2	D/C	85	Twin ACAR	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
175	Moradabad-Muradnagar	1	S/C	133	Twin Moose	POWERGRID	UPPTCL	UPPTCL	Polymer Insulator	
176	Nallagarh-Koldam	1	D/C	46	Quad Moose	POWERGRID	POWERGRID	NTPC	Conventional	Koldam to Parbati pool section is of PKTCL & rest is of POWERGRID
177	Nallagarh-Patiala	1	D/C	94	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
178	Nallagarh-Patiala	2	D/C	94	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Nallagarh-Kaithal at Patiala
179	Nathpa Jhakri-Panchkula	1	D/C	165	Triple Snowbird	POWERGRID	SJVNL	POWERGRID	Partial (17%)	LILO of Jhakri-Abdullapur at Panchkula
180	Nathpa Jhakri-Panchkula	2	D/C	165	Triple Snowbird	POWERGRID	SJVNL	POWERGRID	Partial (17%)	
181	Nathpa Jhakri-RampurHEP	1	D/C	21	Triple Snowbird	POWERGRID	SJVNL	SJVNL	Conventional	LILO of Jhakri-Nallagarh-1 at RampurHEP
182	Nathpa Jhakri-RampurHEP	2	D/C	21	Triple Snowbird	POWERGRID	SJVNL	SJVNL	Conventional	
183	NeemranaPG-Manesar	1	D/C	67	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
184	NeemranaPG-Manesar	2	D/C	67	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
185	NeemranaPG-Babai	1	D/C	85	Twin Moose	POWERGRID	POWERGRID	RRVNL	Not Available	LILO of 400kV Neemrana-Sikar at Babai by NRSSXXXVI (Essel group): Earlier 29% of Neemrana-Sikar PG
186	Sikar-Babai	1	D/C	95	Twin Moose	POWERGRID	POWERGRID	RRVNL	Not Available	
187	NeemranaPG-Sikar	2	D/C	176	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Partial (29%)	
188	NewWanpoh-Wagoora	1	D/C	57	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
189	NewWanpoh-Wagoora	2	D/C	57	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
190	Orai(PG)-Orai	1	D/C	42	Quad Moose	POWERGRID	POWERGRID	UPPTCL	Not Available	
191	Orai(PG)-Orai	2	D/C	42	Quad Moose	POWERGRID	POWERGRID	UPPTCL	Not Available	
192	Panchkula -Abdullapur	1	D/C	63	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Jhakri-Abdullapur at Panchkula
193	Panchkula -Abdullapur	2	D/C	63	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of Jhakri-Abdullapur at Panchkula
194	Patiala-Panchkula	1	D/C	65	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
195	Patiala-Panchkula	2	D/C	65	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
196	Patiala-Patran	1	D/C	79	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	LILO of 400 kV Kaithal-Patiala-D/C at Patran. LILO portion is of Patran Transmission Company Limited
197	Patiala-Patran	2	D/C	79	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
198	Patran-Kaithal	1	D/C	47	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
199	Patran-Kaithal	2	D/C	47	Triple Snowbird	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
200	RampurHEP-Nallagarh	1	D/C	128	Triple Snowbird	POWERGRID	SJVNL	POWERGRID	Conventional	LILO of Jhakri-Nallagarh-1 at RampurHEP
201	RampurHEP-Nallagarh	2	D/C	128	Triple Snowbird	POWERGRID	SJVNL	POWERGRID	Conventional	
202	RAPS-C-Chittorgarh	1	D/C	155	Twin Moose	POWERGRID	NPCIL	RRVNL	Partial (38%)	LILO of 400 kV Raps C-Kankroli at Chhitorgarh
203	RAPS-C-Kankroli	1	D/C	199	Twin Moose	POWERGRID	NPCIL	POWERGRID	Partial (51%)	
204	RAPS-C-Kota	1	S/C	51	Twin Moose	POWERGRID	NPCIL	POWERGRID	Partial (55%)	400kV RAPS-Jaipur line whose work was completed till Kota section is connected with 400kV Raps-Kota#2 (for antitheft purpose) and hence 400kV RapsC-Kota #2 is now two twin moose lines connected in parallel paths
205	RAPS-C-Kota	2	S/C	55	Twin Moose	POWERGRID	NPCIL	POWERGRID	Not Available	
206	Rihand-Allahabad	1	D/C	279	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	
207	Rihand-Allahabad	2	D/C	279	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
208	Roorkee-Kashipur	1	D/C	151	Quad Moose	POWERGRID	POWERGRID	PTCUL	Partial (72%)	
209	Roorkee-Kashipur	2	D/C	151	Quad Moose	POWERGRID	POWERGRID	PTCUL	Partial (72%)	
210	Roorkee-Saharanpur	1	D/C	36	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Polymer Insulator	
211	Roorkee-Dehradun	1	D/C	80	Quad Moose	POWERGRID	POWERGRID	POWERGRID	Partial (50%)	
212	Sarnath-Varanasi	1	D/C	70	Quad Moose	POWERGRID	UPPTCL	POWERGRID	Partial (52%)	LILO of Sarnath-Allahabad (144 KM) at 765/400kV Varanasi
213	Sarnath-Varanasi	2	D/C	107	Quad Moose	POWERGRID	UPPTCL	POWERGRID	Partial (52%)	
214	Shahjahanpur-Bareilly PG	1	D/C	116	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
215	Shahjahanpur-Bareilly PG	2	D/C	116	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
216	Shahjahanpur-Rosa	1	D/C	8	Twin Moose	POWERGRID	POWERGRID	UPPCL	Not Available	
217	Shahjahanpur-Rosa	2	D/C	8	Twin Moose	POWERGRID	POWERGRID	UPPCL	Not Available	
218	Shree Cement-Kota	1	D/C	208	Twin Moose	POWERGRID	Sh. Cement	POWERGRID	Polymer Insulator	LILO portion is of Shree Cement
219	Shree Cement-Merta	2	D/C	103	Twin Moose	POWERGRID	Sh. Cement	RRVPNL	Polymer Insulator	LILO portion is of Shree Cement
220	Sikar-Ratangarh	1	D/C	76	Twin Moose	POWERGRID	POWERGRID	RRVPNL	Conventional	
221	Sikar-Ratangarh	2	D/C	76	Twin Moose	POWERGRID	POWERGRID	RRVPNL	Conventional	
222	Singrauli-Allahabd	1	S/C	224	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	
223	Singrauli-Allahabd	2	S/C	202	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	
224	Singrauli-Anpara	1	S/C	25	Twin Moose	POWERGRID	NTPC	UPPTCL	Partial (91%)	
225	Singrauli-Fatehpur	1	S/C	331	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	LILO of Singrauli-Kanpur at Fatehpur
226	Singrauli-LucknowUP	1	S/C	409	Twin Moose	POWERGRID	NTPC	UPPTCL	Conventional	
227	Singrauli-Rihand	1	S/C	42	Twin Moose	POWERGRID	NTPC	NTPC	Conventional	
228	Singrauli-Rihand	2	S/C	44	Twin Moose	POWERGRID	NTPC	NTPC	Conventional	
229	Singrauli-Vindhyachal	1	S/C	3	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	
230	Singrauli-Vindhyachal	2	S/C	5	Twin Moose	POWERGRID	NTPC	POWERGRID	Conventional	
231	Tehri pooling-Koteswar	1	D/C	3	Twin Moose	POWERGRID	POWERGRID	THDC	Conventional	
232	Tehri pooling-Koteswar	2	D/C	3	Twin Moose	POWERGRID	POWERGRID	THDC	Conventional	
233	Uri-I - Amargarh	1	D/C	62	Twin Moose	POWERGRID	NHPC	POWERGRID	Conventional	
234	Uri-I - Amargarh	2	D/C	62	Twin Moose	POWERGRID	NHPC	POWERGRID	Conventional	LILO of 400kV Uri-I - Wagoora D/C at Amargarh
235	Amargarh - Wagoora	1	D/C	36	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
236	Amargarh - Wagoora	2	D/C	36	Twin Moose	POWERGRID	POWERGRID	POWERGRID	Conventional	
237	Uri-II - Uri-I	1	S/C	10	Twin Moose	POWERGRID	NHPC	NHPC	Conventional	
238	Uri-II - Wagoora	1	S/C	105	Twin Moose	POWERGRID	NHPC	POWERGRID	Conventional	
<b>B. POWERLINK Transmission Ltd</b>										
1	Bareilly PG-Meerut	1	D/C	250	Twin Moose	POWERLINK	POWERGRID	POWERGRID	Conventional	LILO of Bareilly PG-Mandola-1 (241 Km) at Meerut *Series compensated was (30%) at Bareilly
2	Bareilly PG-Meerut	2	D/C	250	Twin Moose	POWERLINK	POWERGRID	POWERGRID	Conventional	
3	Bareilly UP-Bareilly PG	1	D/C	14	Twin Moose	POWERLINK	UPPTCL	POWERGRID	Polymer Insulator	
4	Bareilly UP-Bareilly PG	2	D/C	14	Twin Moose	POWERLINK	UPPTCL	POWERGRID	Polymer Insulator	
5	Gorakhpur PG-Lucknow PG	1	D/C	246	Twin Moose	POWERLINK	POWERGRID	POWERGRID	Conventional	*Series compensated line (30%)
6	Gorakhpur PG-Lucknow PG	2	D/C	246	Twin Moose	POWERLINK	POWERGRID	POWERGRID	Conventional	
7	Meerut-Mandola	3	D/C	102	Twin Moose	POWERLINK	POWERGRID	POWERGRID	Conventional	LILO of Bareilly PG-Mandola-1&2 (241 Km) at Meerut(30%)
8	Meerut-Mandola	4	D/C	102	Twin Moose	POWERLINK	POWERGRID	POWERGRID	Conventional	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
<b>C. Adani Power Ltd (Adani Transmission India Ltd.)</b>										
1	Mahindergarh (APL)-Bhiwani PG	1	D/C	50	Twin Moose	APL/ATIL	APL	POWERGRID	Conventional	ISTS
2	Mahindergarh (APL)-Bhiwani PG	2	D/C	50	Twin Moose	APL/ATIL	APL	POWERGRID	Conventional	
3	MahindergarhHVDC-Dhanoda	1	D/C	5	Quad Moose	APL/ATIL	APL	HVPNL	Conventional	
4	MahindergarhHVDC-Dhanoda	2	D/C	5	Quad Moose	APL/ATIL	APL	HVPNL	Conventional	
<b>D. APCPL (Aravali Power Corporation Pvt Ltd.)</b>										
1	Jhajjar (IGSTPS)-Mundka	1	D/C	66	Twin Moose	APCPL	APCPL	DTL	Conventional	
2	Jhajjar (IGSTPS)-Mundka	2	D/C	66	Twin Moose	APCPL	APCPL	DTL	Conventional	
<b>E. BBMB</b>										
1	Dehar-Rajpura	1	S/C	129	Twin Morkulla in old line & Moose in LILO portion	BBMB	BBMB	PSTCL	Antifog	LILO of Dehar-Bhiwani at Rajpura
2	Bhiwani(BBMB)-Rajpura	1	S/C	213		BBMB	BBMB	PSTCL	Antifog	
3	Dehar-Panchkula	1	S/C	125	Twin Morkulla	BBMB	BBMB	POWERGRID	Antifog	LILO of Dehar-Panipat at Panchkula
4	Panchkula-Panipat	1	S/C	155	Twin Morkulla	BBMB	POWERGRID	BBMB	Antifog	
<b>F. DTL</b>										
1	Ballabgarh-Bamnoli	1	M/C Tower	53	Quad bersimis	DTL	POWERGRID	DTL	Polymer Insulator	Approx 1Km cable section at Bamnoli in each circuit. One ckt. is out and other is in service by means of ERS(Emergency restoration)
2	Ballabgarh-Bamnoli	2	M/C Tower	53	Quad bersimis	DTL	POWERGRID	DTL	Polymer Insulator	
3	Bamnoli-Jhatikara	1	D/C	12	Quad bersimis	DTL	DTL	DTL	Polymer Insulator	
4	Bamnoli-Jhatikara	2	D/C	12	Quad bersimis	DTL	DTL	DTL	Polymer Insulator	
5	Bawana-Mundka	1	D/C	18	Quad bersimis	DTL	DTL	DTL	Polymer Insulator	
6	Bawana-Mundka	2	D/C	18	Quad bersimis	DTL	DTL	DTL	Polymer Insulator	
7	Jhatikara-Mundka	1	D/C	17	Quad bersimis	DTL	DTL	DTL	Polymer Insulator	
8	Jhatikara-Mundka	2	D/C	17	Quad bersimis	DTL	DTL	DTL	Polymer Insulator	
9	Mandola-Bawana	1	D/C	24	Quad bersimis	DTL	POWERGRID	DTL	Polymer Insulator	
10	Mandola-Bawana	2	D/C	24	Quad bersimis	DTL	POWERGRID	DTL	Polymer Insulator	
<b>G. HVPNL</b>										
1	CLP Jhajjar -Dhanonda	1	D/C	20	Twin Moose	KT Jhajjar	CLP Jhajjar	HVPNL	Conventional	
2	CLP Jhajjar -Dhanonda	2	D/C	20	Twin Moose	KT Jhajjar	CLP Jhajjar	HVPNL	Conventional	
3	CLP Jhajjar- Kabulpur	1	D/C	35	Quad Moose	KT Jhajjar	CLP Jhajjar	HVPNL	Conventional	
4	CLP Jhajjar- Kabulpur	2	D/C	35	Quad Moose	KT Jhajjar	CLP Jhajjar	HVPNL	Conventional	
5	Deepalpur-Kabulpur	1	D/C	67	Quad Moose	KT Jhajjar	KT Jhajjar	HVPNL	Conventional	
6	Deepalpur-Kabulpur	2	D/C	67	Quad Moose	KT Jhajjar	KT Jhajjar	HVPNL	Conventional	
7	Dhanoda-Daultabad	1	D/C	73	Quad Moose	HVPNL	HVPNL	HVPNL	Conventional	
8	Dhanoda-Daultabad	2	D/C	73	Quad Moose	HVPNL	HVPNL	HVPNL	Conventional	
9	Gurgaon-Daultabad	1	D/C	21	Quad Moose	HVPNL	POWERGRID	HVPNL	Conventional	Six towers multi-circuit with Bamnoli-Ballabgarh.
10	Gurgaon-Daultabad	2	D/C	21	Quad Moose	HVPNL	POWERGRID	HVPNL	Conventional	
11	Jhajjar-Daulatabad	1	D/C	64	Twin Moose	HVPNL	APCPL	HVPNL	Conventional	
12	Jhajjar-Daulatabad	2	D/C	64	Twin Moose	HVPNL	APCPL	HVPNL	Conventional	
13	Khedar-Fatehabad	1	D/C	40	Twin Moose	HVPNL	HPGCL	POWERGRID	Conventional	
14	Khedar-Kirori	1	D/C	6	Twin Moose	HVPNL	HPGCL	HVPNL	Conventional	
15	Khedar-Kirori	2	D/C	6	Twin Moose	HVPNL	HPGCL	HVPNL	Conventional	
16	Khedar-Nuhiawali	1	D/C	114	Twin Moose	HVPNL	HPGCL	HVPNL	Polymer Insulator	
17	Nuhiawali-Fatehabad	1	D/C	78	Twin Moose	HVPNL	HVPNL	POWERGRID	Antifog	
<b>H. JPVL/JSW (Jaigad Power Transco Limited.)</b>										
1	Abdullapur-Kala Amb	1	D/C	39	Quad Moose	JPVL	POWERGRID	PKATL	Conventional	LILO of 400kV Abdullapur-Karcham Wangtoo D/C at Kala Amb by PKTCL
2	Abdullapur-Kala Amb	2	D/C	39	Quad Moose	JPVL	POWERGRID	PKATL	Conventional	
3	Kala Amb- Karcham Wangtoo	1	D/C	175	Quad Moose	JPVL	PKATL	JSW	Conventional	
4	Kala Amb- Karcham Wangtoo	2	D/C	175	Quad Moose	JPVL	PKATL	JSW	Conventional	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
5	Baspa-Karcham Wangtoo	1	D/C	22	Triple snowbird	JPTL/JSW	JPVL	JSW	Conventional	LILO of Baspa-Jhakri at karcham Wangtoo (LILO Portion is of JPVL)
6	Baspa-Karcham Wangtoo	2	D/C	22	Triple snowbird	JPTL/JSW	JPVL	JSW	Conventional	
7	Karcham Wangtoo-NJPC	1	D/C	34	Triple snowbird	JPTL/JSW	JSW	SJVNL	Conventional	
8	Karcham Wangtoo-NJPC	2	D/C	34	Triple snowbird	JPTL/JSW	JSW	SJVNL	Conventional	
<b>I. PDD (Jammu &amp; Kashmir)</b>										
1	Baglihar(stage 1)-Kishenpur	1	D/C	68	Twin Moose	POWERGRID	JKSPDCL	POWERGRID	Conventional	
2	Baglihar(stage 2)-Kishenpur	2	D/C	68	Twin Moose	POWERGRID	JKSPDCL	POWERGRID	Conventional	
<b>J. PSTCL</b>										
1	Makhu-Amritsar	1	D/C	64	Twin Moose	PSTCL	PSTCL	PSTCL	Partial (10%)	
2	Makhu-Amritsar	2	D/C	64	Twin Moose	PSTCL	PSTCL	PSTCL	Partial (10%)	
3	Muktsar-Makhu	1	D/C	96	Twin Moose	PSTCL	PSTCL	PSTCL	Conventional	
4	Muktsar-Makhu	2	D/C	96	Twin Moose	PSTCL	PSTCL	PSTCL	Conventional	
5	Nakodar-Makhu	1	D/C	52	Twin Moose	PSTCL	PSTCL	PSTCL	Conventional	
6	Nakodar-Makhu	2	D/C	52	Twin Moose	PSTCL	PSTCL	PSTCL	Conventional	
7	Nakodar-Moga	1	S/C	78	Twin Moose	PSTCL	PSPCL	POWERGRID	Not Available	LILO of 400kV Talwandi sabo-Nakodar at Moga
8	Rajpura-Dhuri	1	D/C	86	Twin Moose	PSTCL	PSTCL	PSTCL	Conventional	LILO of Rajpura th-Dhuri 1 at 400kV Rajpura
9	Rajpura TPS- Rajpura	1	D/C	9	Twin Moose	PSTCL	PSPCL	PSTCL	Conventional	
10	Rajpura-Dhuri	2	D/C	86	Twin Moose	PSTCL	PSTCL	PSTCL	Conventional	LILO of Rajpura th-Dhuri 2 at 400kV Rajpura
11	Rajpura TPS- Rajpura	2	D/C	9	Twin Moose	PSTCL	PSPCL	PSTCL	Not Available	
12	Rajpura TPS-Nakodar	1	D/C	139	Twin Moose	PSTCL	PSPCL	PSTCL	Conventional	
13	Rajpura TPS-Nakodar	2	D/C	139	Twin Moose	PSTCL	PSPCL	PSTCL	Conventional	
14	Talwandi Saboo- Dhuri	1	D/C	175	Twin Moose	PSTCL	PSPCL	PSTCL	Partial (22%)	
15	Talwandi Saboo- Dhuri	2	D/C	175	Twin Moose	PSTCL	PSPCL	PSTCL	Partial (22%)	
16	Talwandi Saboo- Moga	1	D/C	102	Twin Moose	PSTCL	PSPCL	PSTCL	Not Available	LILO of 400kV Talwandi sabo-Nakodar at Moga
17	Talwandi Saboo- Nakodar	1	D/C	180	Twin Moose	PSTCL	PSPCL	PSTCL	Conventional	
18	Talwandi Saboo- Muktsar	1	D/C	100	Twin Moose	PSTCL	PSPCL	PSTCL	Conventional	
19	Talwandi Saboo- Muktsar	2	D/C	100	Twin Moose	PSTCL	PSPCL	PSTCL	Conventional	
<b>K. PTCUL</b>										
1	Alaknanda(GVK)-Srinagar(PTCUL)	1	D/C	14	Twin Moose	PTCUL	UPPCL	PTCUL	Conventional	
2	Alaknanda(GVK)-Srinagar(PTCUL)	2	D/C	14	Twin Moose	PTCUL	UPPCL	PTCUL	Conventional	
3	Muradabad-Kashipur	1	S/C	108	Twin Moose	PTCUL	UPPTCL	PTCUL	Conventional	
4	Rishikesh-Nehtaur	1	D/C	124	Twin Moose	PTCUL	PTCUL	UPPTCL	Not Available	LILO of 400kV Rishikesh-Kashipur (LILO portion owned by UPPTCL)
5	Nehtaur-Kashipur	2	D/C	80	Twin Moose	PTCUL	UPPTCL	PTCUL	Not Available	
6	Roorkee-Rishikesh	1	S/C	50	Twin Moose	PTCUL	POWERGRID	PTCUL	Not Available	
<b>L. RRVPNL</b>										
1	Ajmer-Bhilwara	1	D/C	160	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
2	Ajmer-Bhilwara	2	D/C	160	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
3	Akal-Barmer	1	S/C	130	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
4	Akal-Jodhpur	1	S/C	245	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
5	Akal-Ramgarh	1	D/C	99	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
6	Akal-Ramgarh	2	D/C	99	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
7	Anta-Chhabra	1	D/C	90	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
8	Anta-Chhabra	2	D/C	90	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
9	Anta-Kalisindh	1	D/C	80	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
10	Anta-Kalisindh	2	D/C	80	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
11	Anta-Kawai	1	D/C	50	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
12	Anta-Kawai	2	D/C	50	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
13	Barmer-Rajwest	1	D/C	20	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
14	Bhilwara-Chhabra	1	S/C	285	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
15	Bikaner-Merta	1	S/C	172	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
16	Bikaner-Bhadla	1	D/C	180	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
17	Bikaner-Bhadla	2	D/C	180	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
18	Bikaner-Sikar	1	D/C	171	Twin Moose	RRVPNL	RRVPNL	POWERGRID	Not Available	
19	Bikaner-Sikar	2	D/C	171	Twin Moose	RRVPNL	RRVPNL	POWERGRID	Not Available	
20	Chhabra - Kawai SCTPS	1	S/C	45	Twin Moose	RRVPNL	RVUNL	APRL	Conventional	
21	Heerapura-Hindaun	1	S/C	192	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
22	Hindaun-Chhabra	1	S/C	305	Twin Moose	RRVPNL	RRVPNL	RVUNL	Conventional	
23	Merta-Heerapura	1	S/C	180	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
24	Merta-Ratangarh	1	S/C	180	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
25	Merta-Jodhpur	1	S/C	119	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
26	Merta-Jodhpur	2	S/C	120	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Conventional	
27	Phagi-Ajmer(RRVPNL)	1	D/C	109	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
28	Phagi-Ajmer(RRVPNL)	2	D/C	109	Twin Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
29	Phagi-Heerapura	1	D/C	52	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
30	Phagi-Heerapura	2	D/C	52	Quad Moose	RRVPNL	RRVPNL	RRVPNL	Not Available	
31	Rajwest-Jodhpur	1	D/C	220	Twin Moose	RRVPNL	RWPL	RRVPNL	Conventional	
32	Rajwest-Jodhpur	2	D/C	220	Twin Moose	RRVPNL	RWPL	RRVPNL	Conventional	
33	Suratgarh-Bikaner	1	S/C	162	Twin Moose	RRVPNL	RVUNL	RRVPNL	Conventional	
34	Suratgarh-Ratangarh	1	S/C	144	Twin Moose	RRVPNL	RVUNL	RRVPNL	Conventional	
35	Suratgarh-Ratangarh	2	S/C	144	Twin Moose	RRVPNL	RVUNL	RRVPNL	Conventional	
<b>M. UPPTCL</b>										
1	Agra (Fatehabad)-Agra South	1	D/C	70	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
2	Agra (Fatehabad)-Agra South	2	D/C	70	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
3	Agra (UP)-Agra(Fatehabad)	1	S/C	104	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	LILO of 400 kV Agra(UP)-Muradnagar(N) at Fatehabad(UP)
4	Agra UP-Unnao	1	S/C	279	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (25%)	
5	Agra(Fatehabad)-Mathura	1	S/C	142	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
6	Agra(Fatehabad)-Mathura	2	D/C	151	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	LILO of 400 kV Fatehabad(UP)-Muradnagar at Mathura
7	Aligarh-Mainpuri	1	D/C	93	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
8	Aligarh-Mainpuri	2	D/C	93	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
9	Aligarh-Muradnagar	1	S/C	177	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	*Series Compensated line (40%). It would be shifted
10	Aligarh-Sikandrabad	1	D/C	95	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
11	Aligarh-Sikandrabad	2	D/C	95	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
12	AnparaB-AnparaC	1	D/C	0.05	Quad Moose	UPPTCL	UPRVUNL	LANCO	Conventional	
13	AnparaB-AnparaC	2	D/C	0.05	Quad Moose	UPPTCL	UPRVUNL	LANCO	Conventional	
14	AnparaB-AnparaD	1	D/C	5	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Not Available	
15	AnparaB-AnparaD	2	D/C	5	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Not Available	
16	AnparaB-Mau	1	S/C	262	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Partial (13%)	
17	AnparaB-Obra	1	S/C	40	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Partial	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
18	AnparaB-Sarnath	1	D/C	158	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Partial	
19	AnparaB-Sarnath	2	D/C	158	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Conventional	
20	Ataur-Hapur	1	D/C	52	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
21	Ataur-Hapur	2	D/C	52	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
22	Ataur-Indirapuram	1	D/C	15	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
23	Ataur-Indirapuram	2	D/C	15	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
24	Azamgarh-Mau	1	S/C	48	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (79%)	
25	Azamgarh-Sultanpur	1	S/C	126	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Conventional	
26	Banda-Rewa road	1	D/C	177	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
27	Banda-Rewa road	2	D/C	177	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
28	Bara-Meja	1	D/C	32	Quad Moose	UPPTCL	UPPTCL	MUNPL	Not Available	LILO of 400kV Bara-Rewa road D/C at Meja
29	Bara-Meja	2	D/C	32	Quad Moose	UPPTCL	UPPTCL	MUNPL	Not Available	
30	Bareilly UP-Unnao	1	D/C	271	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (15%)	*Series Compensated line (45%)
31	Bareilly UP-Unnao	2	D/C	271	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (15%)	*Series Compensated line (45%)
32	Gorakhpur UP-Azamgarh	1	S/C	90	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (76%)	
33	Gr. Noida(765)-Sector 148	1	D/C	47	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
34	Gr. Noida(765)-Sector 148	2	D/C	47	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
35	Gr. Noida-Gr. Noida (765)	1	D/C	45	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
36	Gr. Noida-Gr. Noida (765)	2	D/C	45	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
37	Gr.Noida-Sikandrabad	1	D/C	17	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
38	Gr.Noida-Sikandrabad	2	D/C	17	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
39	Hapur-Dasna	1	D/C	14	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
40	Hapur-Dasna	2	D/C	14	Quad Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
41	Mainpuri(UP)-Mainpuri(PG)	1	D/C	25	Twin Moose	UPPTCL	UPPTCL	POWERGRID	Not Available	LILO of 400kV Orai-Mainpuri(PG) at Mainpuri(UP)
42	Mainpuri(UP)-Mainpuri(PG)	2	D/C	26	Twin Moose	UPPTCL	UPPTCL	POWERGRID	Not Available	LILO of 400kV Paricha-Mainpuri(PG) at Mainpuri(UP)
43	Meja-Rewa road	1	D/C	34	Quad Moose	UPPTCL	MUNPL	UPPTCL	Not Available	LILO of 400kV Bara-Rewa road D/C at Meja
44	Meja-Rewa road	2	D/C	34	Quad Moose	UPPTCL	MUNPL	UPPTCL	Not Available	
45	Muradnagar New- Mathura	1	D/C	246	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	LILO of 400 kV Fatehabad(UP)-Muradnagar at Mathura
46	Muradnagar-Ataur	2	D/C	18	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	LILO of 400kV Muzaffarnagar-Muradnagar at Ataur (Earlier 95%)
47	Muzaffarnagar-Ataur	1	D/C	121	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
48	Muzaffarnagar-Srinagar	1	D/C	189	Twin Moose	UPPTCL	UPPTCL	GVKPII	Conventional	
49	Muzaffarnagar-Vishnuprayag	1	D/C	280	Twin Moose	UPPTCL	UPPTCL	JPVL	Conventional	
50	Obra-Rewa road	1	S/C	179	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	
51	Obra-Sultanpur	1	S/C	230	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Conventional	
52	Orai-Mainpuri(UP)	1	D/C	176	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	LILO of 400kV Orai-Mainpuri(PG) at Mainpuri(UP)
53	Orai-Paricha	1	D/C	111	Twin Moose	UPPTCL	UPPTCL	UPRVUNL	Not Available	
54	Panki-Aligarh	1	S/C	285	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (24%)	
55	Paricha-Mainpuri(UP)	1	D/C	240	Twin Moose	UPPTCL	UPRVUNL	UPPTCL	Conventional	LILO of 400kV Paricha-Mainpuri(PG) at Mainpuri(UP)
56	Rewa road -Panki	1	S/C	210	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Not Available	LILO of Bara-Panki at 400kV Rewa Road
57	Roorkee-Muzaffarnagar	1	S/C	71	Twin Moose	PTCUL	POWERGRID	UPPTCL	Not Available	

## Annexure-5

S.No.	Name of Line	Circuit ID	Tower Configuration (S/C or D/C)	Line Length (in km)	Type of conductor	O&M by	Agency at		Replaced with Polymer Insulator (As a % of Total Line Length)	Remarks
							End-I	End-II		
58	Sarnath-Azamgarh	1	S/C	97	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Conventional	
59	Srinagar-Vishnuprayag	1	D/C	109	Twin Moose	UPPTCL	GVKPIL	JPVL	Conventional	
60	Sultanpur-Lucknow PG	1	S/C	164	Twin Moose	UPPTCL	UPPTCL	POWERGRID	Conventional	
61	Unnao-Lucknow UP	1	S/C	39	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (13%)	
62	Unnao-Panki	1	S/C	49	Twin Moose	UPPTCL	UPPTCL	UPPTCL	Partial (41%)	
<b>N. NTPC JV</b>										
1	Dadri-Loni (Harsh Vihar)	1	D/C	54	Twin Moose	NTPC	NTPC	DTL	Polymer	
2	Dadri-Loni (Harsh Vihar)	2	D/C	54	Twin Moose	NTPC	NTPC	DTL	Polymer	
<b>O. PKTCL (Parbati-Koldam Transmission)</b>										
1	Koldam-Ludhiana	1	D/C	151	Triple Snowbird	PKTCL	NTPC	POWERGRID	Not Available	
2	Koldam-Ludhiana	2	D/C	151	Triple Snowbird	PKTCL	NTPC	POWERGRID	Not Available	
3	Koldam-Banala	1	D/C	62	Quad Moose	PKTCL	NTPC	POWERGRID	Not Available	
4	Nallagarh-Banala	1	D/C	121	Quad Moose	PKTCL	POWERGRID	POWERGRID	Not Available	Powergrid owned 46.38km
5	Parbati-II- Parbati Pooling (Banala)	1	D/C	13	Quad Moose	PKTCL	NHPC	POWERGRID	Not Available	Some portion is of Powergrid
6	Parbati-III- Parbati Pooling (Banala)	2	S/C	4	Quad Moose	PKTCL	NHPC	POWERGRID	Not Available	
7	Parbati II- Sainj	1	D/C	1	Quad Moose	PKTCL	NHPC	HPPCL	Not Available	LILO of 400kV Parbati II-Parbati III at Sainj
8	Parbati III- Sainj	1	D/C	12	Quad Moose	PKTCL	NHPC	HPPCL	Not Available	
<b>P. Adani Transmission India Ltd.(partly with MTACL)</b>										
1	Ajmer-Deedwana	1	S/C	110	Twin Moose	MTACL/ATIL	RRVUNL	MTACL	Not Available	
2	Bikaner-Deedwana	1	S/C	129	Twin Moose	MTACL/ATIL	RRVUNL	MTACL	Conventional	
3	Alwar-Hindaun	1	S/C	96	Twin Moose	ATSL/ATIL	ATSL	RRVUNL	Not Available	Partly owned by Aravali Transmission Services ILtd.
<b>Q. SPTL (Sterlite Power Transmission Limited):NRSS-29 Transmission Company Limited</b>										
1	Jalandhar-Samba	1	D/C	135	Twin Moose	SPTL	POWERGRID	POWERGRID	Not Available	
2	Jalandhar-Samba	2	D/C	135	Twin Moose	SPTL	POWERGRID	POWERGRID	Not Available	
<b>R. Powergrid Unchahar Transmission Ltd.</b>										
1	Fatehpur-Unchahar	1	D/C	54	Twin Moose	PUTL	POWERGRID	NBPPL	Not Available	
2	Fatehpur-Unchahar	2	D/C	54	Twin Moose	PUTL	POWERGRID	NBPPL	Not Available	
<b>S. NRSSXXXI(B)</b>										
1	Amritsar-Malerkotla	1	D/C	149	Twin Moose	NRSSXXXI(B)	POWERGRID	POWERGRID	Not Available	
2	Amritsar-Malerkotla	2	D/C	149	Twin Moose	NRSSXXXI(B)	POWERGRID	POWERGRID	Not Available	
3	Kurukshetra-Malerkotla	1	D/C	139	Twin Moose	NRSSXXXI(B)	POWERGRID	POWERGRID	Not Available	
4	Kurukshetra-Malerkotla	2	D/C	139	Twin Moose	NRSSXXXI(B)	POWERGRID	POWERGRID	Not Available	
<b>5. 400kV Transmission Line charged at 220kV</b>										
<b>A. POWERGRID</b>										
1	Dhauliganga-Bareilly(UP)	1	D/C	235	Twin Moose	POWERGRID	NHPC	UPPTCL	Conventional	
2	Dhauliganga-Pithoragarh	1	D/C	59	Twin Moose	POWERGRID	NHPC	POWERGRID	Conventional	
3	Pithoragarh-Bareilly(UP)	1	D/C	178	Twin Moose	POWERGRID	POWERGRID	UPPTCL	Conventional	
<b>B. RRVUNL</b>										
1	Dholpur-Hindaun	1	S/C	100	Twin Moose	RRVUNL	RRVUNL	RRVUNL	Conventional	
2	Kota-KTPS	1	D/C	7	Twin Moose	RRVUNL	POWERGRID	RRVUNL	Conventional	
3	Kota-KTPS	2	D/C	7	Twin Moose	RRVUNL	POWERGRID	RRVUNL	Conventional	

\* - Fixed series capacitor (FSC) is owned by POWERGRID

Status of replacement of Porcelain insulators with Polymer insulators																As on	
S.No.	Name of Line/voltage/ S/C or D/C	Voltage Level (in kV)	Line details				Insulators to be replaced by Polymer (Total target for replacement despite completion in any year)		Insulators to be replaced by Polymer (Target for Present year)		Progress (Work already completed wrt present year target)		Progress (Work already completed wrt total line)		Schedule for completion of Replacement		Remarks  <i>(If only partial location of the line has planned then may please indicate the location numbers or part kMs of line which have been planned)</i>
			Total Length of line (in km)	Total Towers location (Nos)		Total Towers location (Nos)		Total Towers Locations (Nos)		Total Towers Locations (Nos)		Total Towers Locations (Nos)		Start Date	End Date		
				Suspension Tower (Nos)	Tension Tower (Nos)	Suspension Tower (Nos)	Tension Tower (Nos)	Suspension Tower (Nos)	Tension Tower (Nos)	Suspension Tower (Nos)	Tension Tower (Nos)	Suspension Tower (Nos)	Tension Tower (Nos)				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1																	
2																	
3																	
4																	
5																	
6																	
7																	

Note:1. Line constructed with Polymer Insulator may please also be indicated in the table

2. Similar separate table shall be formulated for Antifog insulators line as well for line which would be cleaned

3. Lines for whom there is no planning of cleaning or replacement may please also be given in the table but with '-' in planning as well as progress columns



