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भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, शहीद जीत सिंह मार्ग, कटवारिया सराय नई दिल्ली - 110016
Government of India
Northern Regional Power Committee
18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016
Fax Message

No. NRPC/SE(O)/insulator/2009-10 **Date: 21-12-2009**

To

- CMD, POWERGRID, Gurgaon,
- CMD, DTL, New Delhi Fax No 011 23234640
- CED, North Central Railway, Allahabad, 0532-2223211, 2230204
- Director (Electrical), Railway Board, New Delhi, 011- 23387045,
- MD, HVPNL, Panchkula Fax No 0172-2560640
- CMD, RRPVNL, Jaipur Fax No 0141- 2740168
- MD, UPPTCL, Lucknow Fax No 0522- 2287880/ED UPPTCL, Lucknow
- Chairman, BBMB, Chandigarh, Fax No 0172- 2549186, 2652820
- Chief Engineer (SO&C), PSEB, Ablowal, Patiala
- Executive Director & CEO, Powerlinks Transmission Limited, New Delhi, Fax-011-66306377/66306375
- GM (O&M), POWERGRID, NR-I/ NR-II, fax-
- GM (OS), NTPC, NCR, Noida; AGM (OS), NTPC NR, Lucknow,

Sub:- Minutes of the Special meeting held on 16-12-2009 to review the progress of replacement/cleaning of porcelain insulators in Northern Region.

Sir,

A meeting was held on 16-12-2009 with the constituents to review the progress of replacement of porcelain insulators by polymer/antifog insulators in high pollution areas of Northern Region.

Minutes of the meeting are available on website of NRPC (www.nrpc.gov.in).

Yours faithfully,

अशोक कुमार राजपूत **(A K Rajput)**
SE (O)

Copy for information to:

- SA to Chairperson, CEA, New Delhi
- SA to Member (GO&D), CEA, New Delhi
- Director (O&M), MoP, New Delhi
- General Manager, NRLDC, New Delhi

Minutes of the special meeting taken by Member Secretary, NRPC on 16Th December, 2009 regarding replacement of porcelain insulators by polymer/antifog insulators of transmission lines

List of participants is enclosed at Annexure-I.

Member Secretary (MS), NRPC welcomed the participants in the meeting to review the progress of replacement of porcelain insulators by polymer/antifog insulators in the Northern Region. He stated that Transmission Utilities must ensure the completion of replacement work of porcelain insulators by polymer/antifog insulators at all critical locations of transmission lines and also the cleaning of porcelain insulators of lines. He mentioned that foggy weather can occur any time now. The field staff needs to be sensitized specifically in foggy weather during winter nights. After deliberations, a brief on the progress of various transmission utilities is given as under.

POWERLINK had completed the work of replacement of porcelain insulators by polymer insulators on their lines.

Sixty lines of POWERGRID were identified under phase-I, II and III for replacement of porcelain insulators of transmission lines by polymer insulators. The work for replacement of insulators has been completed on 24 lines. Whereas on 12 lines, the replacement work has been completed in the range of 50-90%. A representative of POWERGRID stated that the replacement work on the balance 24 lines identified in phase-II and III would be taken up on getting the delivery of polymer insulators. He informed that the replacement work of porcelain insulators by polymer/antifog insulators at all critical locations of transmission lines had been completed.

Representative of NRLDC informed that during the winter peak season shutdown of lines may not be possible.

Representative of POWERGRID NR- I stated that in respect of HVDC Rihand-Dadri line all the critical locations have been covered by them. 39 lines were planned by them for cleaning of porcelain insulators out of which 32 have been completed. The remaining 7 lines would be completed by 28-12-2009. Cleaning of porcelain insulators by use of helicopters in Kanpur, Mainpuri and Allahabad areas is expected to commence in the last week of December, 2009.

Representative of POWERGRID NR-II stated that the work of replacement of porcelain insulators by polymer insulators identified under phase-I on all the 12 lines had been completed. Under phase-II, 13 lines have been identified for replacement of insulators the work of cleaning of insulators has been completed on 7 of these lines.

Representative of DTL stated that they had received 500 polymer insulator strings on loan basis from POWERGRID and 240 strings had been replaced by them on 400 kV Bamnauli-Ballabgarh line.

Representative of Haryana stated that out of their 25 nos 220 kV lines they had replaced the porcelain insulators by antifog insulators on 7 lines.

Representative of BBMB could not attend the meeting. However, based on the information submitted BBMB has completed replacement of porcelain insulators by antifog insulators on 7 nos 220 kV lines out of 21 identified lines.

BBMB had informed that as regard to polymer insulators on 12 nos 220 kV lines, the price bid for procurement of insulators has been opened and delivery of material is expected in April 2010. Replacement work would be completed by June 2010.

Regarding replacement of porcelain insulators by polymer insulators on 400 kV Dehar-Panipat and Dehar-Bhiwani lines BBMB informed that the matter regarding obtaining statutory clearance with greater length of polymer insulator string was referred to CEA, CPRI and POWERGRID. CEA has opined that the matter may be taken up with the manufacturers for getting insulator strings of required smaller length.

Representative of UPPTCL could not attend the meeting. Based on the information submitted, the percentage completion of the lines planned for replacement of porcelain insulators by polymer insulators is 19 %.

Representative of RVPNL stated that on 220 kV Badarpur-Alwar line, the percentage of completion of insulator strings replacement is 45% and the balance work would be completed by 30th Dec, 2009.

Representative of PSEB stated that out of 3888 discs of antifog insulators planned in their system they had replaced 2336 discs.

MS NRPC requested all the concerned utilities to complete the replacement work of porcelain insulators by polymer/antifog insulators on all lines and carry out periodic cleaning of porcelain insulators in polluted areas. He suggested that the utilities should strategically plan the shutdown requirement for replacement work of porcelain insulators by polymer/antifog insulators on all lines and for other construction activities so as to avail the shut down during lean period.

He also requested the utilities to regularly submit the progress to NRPC secretariat on every Friday as per the Performa available at NRPC website

The summary of status of replacement of porcelain insulators by polymer/antifog insulators of transmission lines by the constituent States and POWERGRID is given at Annexure-II. Line wise status in respect of the constituents is at Annexure-III.

Meeting ended with thanks to the chair.

Annexure-I

List of Participants for Special Meeting on Replacement of Porcelain Insulators by Ploymer/Antifog Insulators 10-11-2009: In Chair Sh A.K. AGGARWAL, MS, NRPC		
Name (S/Sh)	Designation	Contract No.
NRPC		
A.K. Aggarwal	MS	26868681
A.K. Rajput	SE	26868681
Vikram Singh	EE	26868681
NRLDC		
V K Agrawal	GM	
D.K. Jain	DGM	9910344127
Rajiv Porwal	Chief Manager	999903932
PGCIL		
Mithilesh Kumar	DGM	9873637111
R K Singh	Ch. Mgr, CPCC	9873918545
S Rasool	Ch. Mgr, NR-I	9873549223
Ranjan Bhola	Manager(OS), NR-II	9419173968
RVPNL		
M L Hissaria	Ex Er	9414061036
HVPNL		
Sanjay Arora	Power Controller	935273746
PSEB		
Rajbir Singh	Sr Ex Er	9646118223
DTL		
B C Mathur	GM, SLDC	011-23366462

Annexure-II

Status of Replacement of Porcelain Insulators with Polymer/Antifog Insulators (As reported by constituents)						
Name of the constituent	Voltage level	Lines where insulators to be replaced			Type of insulator (polymer/antifog)	Remarks
		Total Insulator Strings (Nos)	Insulator Strings replaced (Nos)	Scheduled completion date for replacement of balance insulators $		
DTL	400kV	2595	240	NA	Polymer	Procurement for 400 kV in process through PGCIL, ordered in 04/09. Delivery of material is awaited. 500 insulators strings taken on loan from POWERGRID and 240 insulators strings have been replaced.
	220kV	8231	nil	NA	Antifog	Taking action for procurement of Antifog insulators
HVPNL	220kV	11834	4453	March/April 2010.	Antifog	Work on seven lines completed. Balance 11 would be completed by March/April, 2010.
UPPTCL	400kV	546	116	NA	Polymer	1027 insulator strings replaced,
	220kV	2241	911	NA	Polymer	
PGCIL NR-I	400kV	28850	23988	12/09	Polymer	
	220kV	831	-	12/09	Polymer	Would be completed by Dec, 09
	HVDC Rihand-Dadri	4608	1498	_	Polymer	Insulators not available. Would be completed in 3rd phase, i.e. in Feb, 2010.
	HVDC Balia-Bhiwadi	2080	0	-	Polymer	HVDC Balia-Bhiwadi line would be provided with polymer insulators. Pole-I expected in May, 2010. Replacement work shall be taken up in third pahse commencing from Feb, 2010.
PGCIL NR-II	400kV	19620	7132	-	Polymer	Procurement order for insulator strings required for phase-II (12,615 No.) and phase-III (10,000 No.) had been placed. Delivery of material expected in Dec/Jan'2010. 400 kV Moga-Bhiwadi line (expected in Dec 2009) would also be provided with polymer insulators.
	220kV	380	380	Completed	Polymer	
BBMB	400kV	2016		June, 2010	Polymer	Regarding replacement of porcelain insulators by polymer insulators on 400 kV Dehar-Panipat

						and Dehar-Bhiwani lines BBMB informed that the matter regarding obtaining statutory clearance with greater length of polymer insulator string was referred to CEA, CPRI and POWERGRID. CEA has opined that the matter may be taken up with the manufacturers for getting insulator strings of required smaller length.
	220kV	3599		06/10	Polymer	Delivery of insulators expected in April, 2010.
	400kV	264	264	Completed	Antifog	
	220kV	3392	2481	12/09	Antifog	Completion by Dec, 2009
POWERLINKS	400kV	1956	1956	04/09	Polymer	Work Completed
PSEB	220 & 132 kV	3888 discs	2336 discs	Dec 09	Antifog	2336 discs replaced so far
RVPNL	220 kV	390	174	Dec 09	polymer	Out of 390 strings of polymer insulators required 174 strings had been completed. Balance completion expected by 1st Dec, 2009.
Note: $ The original schedule was 31-03-2009 as per decision of 10th NRPC meeting held on 30-09-2008.						

Status of Replacement of Porcelain Insulators with Polymer/Antifog Insulators in Northern Region

	POWERGRID (Polymer Insulators)							**As on**	**14-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
	Phase-I							Date of start	Date of Completion
1	400 KV Dadri Mandola-I	100	124	1338	124	1338	100		
2	400 KV Dadri Mandola-II	100	124	1338	124	1338	100		
3	400 kV DADRI-Maharanibagh	100	68	730	68	730	100		
4	400 kV Maharanibagh-Ballabhgarh	100	89	1122	89	1122	100		
5	400 kV Dadri-G'NOIDA	100	37	429	37	429	100		
6	400 kV G'NOIDA-Ballabhgarh	100	108	1270	108	1270	100		
7	400 KV Meerut-Mandola-I	100	166	1284	166	1284	100		
8	400 KV Meerut-Mandola-II	100	166	1284	166	1284	100		
9	400 KV Dadri-Panipat-I	100	301	1515	301	1515	100		
10	400 KV Dadri-Panipat-II	100	328	1731	328	1731	100		
11	400 KV Dadri-M'Kotla (NRI)	100	282	1374	282	1374	100		
12	400 KV Dadri-M'Kotla (NRII)			716		716	100		
13	400 KV Mainpuri-Ballabgarh-I	60	354	1377	283	1146	83	Feb, 2010	Feb, 2010
14	400 KV Mainpuri-Ballabgarh-II	60	354	1473	265	1187	81	Feb, 2010	Feb, 2010
15	400 KV Kanpur-Ballabgarh	60	579	2259	260	1155	51	Feb, 2010	Feb, 2010
16	400 KV Hissar-Bhiwadi (NRI)	60	293	2418	293	1842	76		
17	400 kV Bhiwadi-Bassi (NRI)		353	1374	205	678	49	Feb, 2010	Feb, 2010
18	500 KV HVDC Rh-Dadri P-I	44	885	2304	569	1518	66	insulators not available shall be taken up in 3rd phase	
19	500 KV HVDC Rh-Dadri P-II	44	885	2304	589	1592	69		
20	400 KV Hisar- Bawana			1295		1295	100		
21	400 KV Bahadurgarh- Bhiwani line			839		839	100		
22	400 KV Hisar- Bhiwani Line			387		387	100		
23	400 KV Abdullapur- Bawana-I			636		636	100		
24	400 KV Abdullapur- Bawana-II			635		635	100		
25	400 kV Moga-Fatehabad			615		615	100		
26	400 kV Moga-Hisar			655		655	100		
27	220 kV Hisar-Hisar Link line -I			193		193	100		
28	220 kV Hisar-Hisar Link line -II			187		187	100		
29	400 kV Bawana-Bahadurgarh			500		500	100		
				33582		29191	87		

S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
	Phase-II							Date of start	Date of Completion
1	400 KV Dadri-Muradnagar	100	90	540	54	318	59	Feb, 2010	Feb, 2010
2	400 KV Moradabad- Muradnagar	60	201	798	174	717	90	Feb, 2010	Feb, 2010
3	400 KV Meerut-Muzaffarnagar	100	106	534	0	0	0	Jan, 2010	Jan, 2010
4	400 KV Agra-Ballabgarh	60	272	1304	219	1092	84	Feb, 2010	Feb, 2010
5	400 KV Ballabgarh-Bhiwadi	100	132	508	132	508	100		
6	400 KV Bhiwadi-Bassi-II (LILO of Old Bassi-Hissar)	60	35	240	35	240	100		
7	220 KV FGPP-Palla-I&II	100	64	480	0	0	0	Dec, 2009	Dec, 2009
8	220 KV FGPP-Samaypur-I&II	100	54	351	0	0	0	Dec, 2009	Dec, 2009
9	400 kV Moga-Hisar			761		0	0		
10	400 kV Moga-Fatehabad			528		0	0		
11	400 KV Abdullapur- Bawana-I			202		0	0		
12	400 KV Abdullapur- Bawana-II			202		0	0		
13	400 KV Nathpa Jhakri- Abdullapur-I			346		0	0		
14	400 KV Nathpa Jhakri- Abdullapur-II			347		0	0		
15	400 KV Dadri-M'Kotla (NRII)			264		0	0		
16	400 kV Hisar-Patiala			650		13	2		
17	400 kV Hisar-Kaithal			480		13	3		
18	400 kV Kaithal-Nalagarh			880		0	0		
19	400 kV Nalagarh-Patiala			460		0	0		
20	400 KV Jallandhar-Ludhiana			436		0	0		
21	400 KV Ludhiana-Malerkotla			220		0	0		
				10531		2901	28		

S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
	Phase-III							Date of start	Date of Completion
1	400 KV Agra-Bhiwadi-I	100	198	702	0	0	0	Shall be taken up in Feb, 2010 after arrival of isulators in Mid January, 2010	
2	400 KV Agra-Bhiwadi-II	100	205	786	0	0	0		
3	LILO of 400 KV Bly-Mandola at Meerut	100	22	102	0	0	0		
4	LILO of 400 KV Ballabgarh-Bhiwadi at G'Gaon	100	175	678	0	0	0		
5	LILO of 400 KV Lko-Mbd at Bly.	100	22	84	0	0	0		
6	400 KV Bly-Mbd	100	108	756	0	0	0		
7	± 500 KV HVDC Ballia-Bhiwadi Pole-I	20	400	1040	0	0	0	Feb, 2010	Feb, 2010
8	± 500 KV HVDC Ballia-Bhiwadi Pole-II	20	400	1040	0	0	0	Feb, 2010	Feb, 2010
9	400 KV Moga - Bhiwadi-I			3369		0	0		
10	400 KV Moga - Bhiwadi-II			3369		0	0		
				11926		0	0		

	DTL (Polymer/Antifog Insulators)							**As on**	**14-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
	400 kV Lines (Polymer)							Date of start	Date of Completion
1	Bamnauli-Ballabhgarh I&II	100	149	1214	16	234	19		
2	Mandaula-Bawana	100	68	620			0		
3	Bawana-Bamnauli	100	103	761			0		
	220 kV D/C lines(Antifog)								
1	Mandaula-Narela		73	561			0		
2	Narela-Bawana		41	348			0		
3	Bawana-Shalimarbagh		55	522			0		
4	Shalimarbagh-Rohini		27	312			0		
5	Bawana-Rohini		54	456			0		
6	Bawana-Najafgarh		77	540			0		
7	Bamnauli-Najafgarh		29	210			0		
8	Bamnauli-Pappankalan-I		51	534			0		
9	Bamnauli-Pappankalan-II		62	636			0		
10	Bamnauli-Naraina		99	1098			0		
11	Bamnauli-Mehrauli		52	462			0		
12	Mehrauli-Vasant Kunj		37	471			0		
13	Mandaula-SOW I&II		54	591			0		
14	Mandaula-SOW III&IV		54	591			0		
15	SOW-Kashmere Gate		24	389			0		
16	Maharanibagh-Lodhi Road		30	486			0		
17	BTPS-Okhla		36	516			0		
18	Mandaula-Goplalpur		82	1038			0		
19	BTPS-Mehrauli		68	951			0		
20	IP Station-Patparganj		12	114			0		
				10826		234	2		

	HVPNL (Antifog Insulators)							**As on**	**14-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
								Date of start	Date of Completion
1	220KV Sewah-PTPS Ckt-I	100		198		198	100		
2	220KV Sewah-PTPS Ckt-II	100		198		198	100		
3	220KV Sewah-PTPS Ckt-III	100		213		213	100		
4	220KV Sewah-PTPS Ckt-IV	100		213		213	100		
5	220KV PTPS -Sonepat Ckt-I	100		634		477	75	10.11.09	15.12.09
6	220KV PTPS -Sonepat Ckt-II	100		634		477	75	10.11.09	15.12.09
7	220KV Nuna-Majra-B/garh(400KV) Ckt-I	100		42		42	100		
8	220KV Nuna-Majra-B/garh(400KV) Ckt-II	100		42		42	100		
9	220KV Rohtak-B/garh Ckt-I	100		576		555	96	01.12.09	15.12.09
10	220KV Rohtak-B/garh Ckt-II	100		576		555	96	01.12.09	15.12.09
11	220KV Rohtak-PTPS Ckt-I	100		726		0	0	15.12.09	31.01.10
12	220KV Rohtak-PTPS Ckt-II	100		726		0	0	15.12.09	31.01.10
13	220KV Pali-Samaypur Ckt-I	100		342		48	14	10.12.09	31.01.10
14	220KV Pali-Samaypur Ckt-II	100		342		51	15	10.12.09	31.01.10
15	220KV Pali-Palla Ckt-I	100		414		39	9	16.12.09	30.12.09
16	220KV Pali-Palla Ckt-II	100		414		30	7	16.12.09	30.12.09
17	220KV Samaypur-Palwal Ckt-I	100		288		252	88	16.12.09	30.12.09
18	220KV Samaypur-Palwal Ckt-II	100		288		156	54	16.12.09	30.12.09
19	220KV Badshahpur-Rewari D/C line	100		1410		88	6	15.12.09	31.01.10
20	220KV D/C Sec- 52-A-Pali line	100		690		0	0	20.12.09	31.01.10
21	220KVBadshahpur-Samaypur D/C	100		642		0	0	18.12.09	31.01.10
22	220KV Badshahpur-Pali D/C	100		726		0	0	01.02.2010	30.04.10
23	220KV S/C Badshahpur--IMT Manesar	100		240		9	4	01.02.2010	10.02.10
24	220KV D/C Daultabad-IMT Manesar	100		594		144	24	11.02.10	20.04.2010
25	220KV D/C Nuna-Majra-Daultabad	100		666		666	100		
				11834		4453	38		

	BBMB (Polymer Insulator)							**As on**	**14-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
								Date of start	Date of Completion
1	400KV S/C Dehar-Panipat Line		206	771			0	Polymor insulators under procurment with Director P&D (TS) BBMB Chandigarh. Replacement work	
2	400KV S/C Dehar-Bhiwani Line		331	1245			0		
3	220KV Rohtak Road-Narela ckt-I		81	426			0	Price bid opened and delivery of material is expected in April-2010 and replacement will be completed by June-2010.	
4	220KV Rohtak Road-Narela ckt-II		81	426			0		
5	220KV Panipat-Narela ckt-I		73	263			0		
6	220KV Panipat-Narela ckt-II		73	263			0		
7	220KV Panipat-Narela ckt-III		81	273			0		
8	220KV Ballabhgarh-BTPS-I	100	90	321			0		
9	220KV Ballabhgarh-BTPS-II	100	90	321			0		
10	220KV Samaypur-Ch. Dadri S/C	100	154	518			0		
11	220KV Ballabhgarh-Ch. Dadri S/C	100	169	569			0		
12	220KV Ballabhgarh-Samaypur-I	100	20	84			0		
13	220KV Ballabhgarh-Samaypur-II	100	20	84			0		
14	220KV Ballabhgarh-Samaypur-III	100	15	51			0		
				5615		0	0		
	Note:	The matter regarding obtaining statuary clearance with greater length of insulators in respect of 400KV Polymer insulators was reffered to CEA, CPRI & POWERGRID to seek the expert opinion. CEA has opinioned that matter may be taken up with the manufactures for procuring insulators strings with smaller length. Design directorate of BBMB will take up the matter accordingly. Although they had taken up the matter with the manufactures earlier also but manufatures did not come forward for providing strings of lesser length.							

	BBMB (Antifog Insulator)							**As on**	**14-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
								Date of start	Date of Completion
1	220KV Dhulkot-Panipat ckt-I		29	117	29	117	100	..	…
2	220KV Dhulkot-Panipat ckt-II		29	117	29	117	100	..	…
3	220KV S/C Panipat-Ch. Dadri Line		21	81	21	81	100	..	..
4	220KV S/C Kurukshetra-Panipat Line		28	105	28	105	100		
5	220KV BUSES at 400KV S/S Panipat		…	240	…	240	100	25.11.09	31.12.09
6	220KV Bhakra-Jamalpur ckt -I	13	32	204	29	174	85	16.12.09	17.12.09
7	220KV Bhakra-Jamalpur ckt - II	13	32	204	29	174	85	18.12.09	19.12.09
8	220KV Jamalpur-Jallandhar ckt-I	14	27	87	87	27	31	..	…
9	220KV Jamalpur-Jallandhar ckt- II	14	27	87	87	27	31	..	..
10	220KV Pong-Jalandhar ckt- I	4	12	36	36	12	33		
11	220KV Pong-Jalandhar ckt- II	4	12	36	36	12	33		
12	220KV Jamalpur-Sangrur ckt- I	18	40	313	35	270	86	09.12.09	11.12.09
13	220KV Jamalpur-Sangrur ckt- II	18	40	313	30	276	88	09.12.09	15.12.09
14	220KV Hisar-Sangrur-I	100	62	186	44	132	71	21 to 23 Dec 09	
15	220KV Hisar-Sangrur-II	100	62	186	44	132	71	16.& 28 to 30 Dec 09	
16	220KV Bhiwani-Hisar-I	52	102	345	36	108	31	14, 19 & 26 Dec 09	
17	220KV Bhiwani-Hisar-II	52	102	345	33	99	29	15, 24 to 25 Dec 09	
18	220KV Bhiwani-Ch. Dadri-I	21	26	81	25	75	93	07 & 08 Dec 09	
19	220KV Bhiwani-Ch. Dadri-II	21	26	81	25	75	93	09 & 10 Dec 09	
20	220KV Bhiwani-Ch. Dadri-III	27	35	114	35	114	100		
21	220KV Bhiwani-Ch. Dadri-IV	27	35	114	35	114	100		
				3392		2481	73		

	UPPTCL (Polymer Insulators)							**As on**	**08-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
								Date of start	Date of Completion
1	400 kV Muradnagar-Muzaffarnagar			105	12	36	34	Expected to be completed on 15.11.2009	
2	400 kV Muradnagar-Panki			441	NA	80	18	Shut down has been requested.	
3	220 kV Muradnagar-Shamli			345	78	234	68	Area selected where brick kilns are there.	
4	220 kV Muradnagar-Khurja			210	31	102	49	Started from 220 kV Muradnagar end due to vicinity of Gang Nahar.	
5	220 kV Muradnagar-Sahibabad			210	31	102	49		
6	220 kV Muradnagar-Interconnector I&II			24	7	24	100		
7	220 kV Sahibabad-Muradnagar Ckt-II			600	37	215	36	To be completed by Nov, 09 end.	
8	220 kV Modipuram-Matore Ckt-I			33	11	33	100		
9	220 kV Modipuram-Matore Ckt-II			9			0		
10	220 kV NAPP-Khurja			285	12	69	24	Total 69 Nos are to be replaced. Work in progress.	
11	220 kV Muradnagar-Modipuram			135			0		
12	220 kV Baraut-Muradnagar			105			0		
13	220 kV Baraut-Shamli								
14	220 kV Shatabdinagar-Matore			153			0		
15	220 kV Shatabdinagar-Modipuram								
16	220 kV Greater Noida-Noida Ckt-II			132	44	132	100		
				2787		1027			

	RVPNL (Polymer Insulators)							**As on**	**15-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
								Date of start	Date of Completion
1	220 kV S/C Badarpur-Alwar	51	130	390	58	174	45	22.12.09	30.12.09

	PSEB (Antifog Insulators)							**As on**	**15-12-2009**
					Progress of work				
S.No.	Name of the Line	% of total length of line planned for polymer Insulators	No. of locations on which insulators were to be replaced	No. of Insulator strings Required to be Replaced	No. of locations on which insulators replaced	No. of Insulator strings Replaced	Percentage of completion (on insulator strings)	Schedule for replacement of balance	
								Date of start	Date of Completion
1	**P&M Circle Ludhiana**								
	220kV RTP-Gobindgarh-II			126					
	220kV RTP-Gobindgarh-IV			126					
	220kV RTP-Gobindgarh-I			84					
	220kV RTP-Gobindgarh-II			84					
	220kV Gobindgarh-I- Gobindgarh-II			126					
	220kV Gobindgarh-I- Gobindgarh-II			126					
	132kV Jamalpur-Ghulal ckt-I			157					
	132kV Jamalpur-Ghulal ckt-II			135					
	132kV Jamalpur-Phillaur			54					
	132kV Jamalpur-Goraya			54					
	Total			**1072**					
	P&M Circle Jallandhar								
	220 kV Dasuya-Jallandhar			42					
	220 kV Dasuya-Jallandhar			45					
	220 kV Dasuya-Jallandhar			42					
	220 kV Dasuya-Jallandhar			42					
	220 kV Dasuya-Jallandhar			42					
	220 kV Jamsher-Sultanpur			24					
	132kV Kapurthala-Khera Mandir			8					
	Total			**245**					
	P&M Circle Patiala								
	220kV Ablowal-fagan Majra			100					
	220kV Ablowal-fagan Majra			404		2336 No. of discs replaced (i.e. 60%)			
	Total			**504**					
	P&M Circle Amritsar								
	132kV Verka-Jandiala			48					

	132 kV Jandiala-Tangra			48					
	220kV C/Lines-Khassa-I			45					
	132 kV Verka-Kathunangal-I			96					
	132 kV Verka-Pakharpura-II			96					
	Total			**333**					
	P&M Circle Bathinda								
	220kV Lehra-Bathinda			200					
	220kV Lehra-Bathinda			200					
	132kV Bathinda-Balluna			100					
	132 kV Bathinda-Gidderbaha-Malaut			250					
	132 kV Sadiq-Ferozepure			48					
	132 kV Kotkarore-Ferozeshah			48					
	132kV Ferozpur-Mana Singh Wala			18					
	220 kV Botianwala-Ferozepur			168					
	220 kV Moga-Ferozepur			168					
	220kV Bathinda-Muktsar-I			126					
	220kV Bathinda-Muktsar-I			126					
	220kV Bathinda-Muktsar-II			126					
	220kV Bathinda-Muktsar-II			126					
	Total			**1734**					
	G. Total			**3888 (No of discs)**					

Lines of POWERGRID where Insulators to be Cleaned Using Helicopter

Under Kanpur jurisdiction.				
		LOCATION NO		
SL. No.	NAME OF LINE	FROM	TO	No. OF TOWERS
1	500 kV HVDC Rihand-Dadri	1103	1261	159
2	400 kV S/C Allahabad-Kanpur	1098	G-1184	87
3	400 kV S/C Allahabad-Kanpur-II	1044	G-1128	85
4	400 kV S/C Singrauli-Kanpur	1078	G-1158	81
5	400 kV S/C Kanpur-Agra	G-001	99	83
6	400 kV S/C Kanpur-Ballabgarh	G-001	83	83
7	400 kV D/C Allahabad-Mainpuri	526	690	165
8	400 kV D/C Kanpur-Auraiya	122	G-211	90
9	400 kV S/C Kanpur-Panki-I	G-1	21-G	21
10	400 kV S/C Kanpur-Panki-II	G-1	18	18
11	220 kV D/C Unchahar-Kanpur Ckt-I and II	249	G-445	97
12	220 kV D/C Unchahar-Kanpur Ckt-III and IV	354	G-449	96
13	220 kV D/C Kanpur-Panki-Mainpuri LILO	1	G-48	48
14	220 kV D/C Kanpur-Panki-Naubasta LILO	G-01	78	78
			TOTAL	**1191**
Under Mainpuri jurisdiction.				
1	500 kV HVDV Rihand-Dadri	1483	1491	9
		1569	1576	8
		1700	1743	44
		1777	1786	10
		1826	1840	15
			TOTAL	**86**
Under Allahabad jurisdiction				
1	500 kV HVDV Rihand-Dadri, Pole-I & II	425	452	31
		465	469	5
		516	555	40
		633	660	28
		665	688	24
		701	766	66
		784	798	15
		833	841	9
		849	874	26
			TOTAL	**244**

Note: Schedule is yet to be submitted by POWERGRID