

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

उ. क्षे. वि. स./अधीक्षण अभियंता (प्रचालन)/insulators/2010

दिनांक 18.11.2010

To

1. CMD, POWERGRID, Gurgaon
2. Chairman, BBMB, Chandigarh, Fax No 0172- 2549186, 2652820
3. CMD, DTL, New Delhi Fax No 011 23234640
4. CMD, PSTCL, Ablawal, Patiala
5. MD, HVPNL, Panchkula Fax No 0172-2560640
6. CMD, RRPVNL, Jaipur Fax No 0141- 2740168
7. MD, UPPTCL, Lucknow Fax No 0522- 2287880/ED UPPTCL, Lucknow
8. Director (Electrical), Railway Board, New Delhi, 011- 23387045,
9. CED, North Central Railway, Allahabad, 0532-2223211, 2230204
10. CEO, Powerlinks Transmission Limited, New Delhi, Fax-01166306375
11. GM (O&M), POWERGRID, NR-I
12. GM (O&M), POWERGRID, NR-II
13. GM (OS), NTPC, NCR, Noida;
14. AGM (OS), NTPC NR, Lucknow,

Subject: Minutes of the meeting on replacement of insulators in Northern Region

Sir,

A meeting was held with the utilities of Northern Region on 20-10-2010 to review the progress replacement of porcelain insulators with polymer/antifog insulators and cleaning of insulators in high pollution areas of Northern Region.

Minutes of the aforesaid meeting are enclosed. Copy of the same is also available on website of NRPC (www.nrpc.gov.in).

Encl: As above

Yours faithfully

for Shri
18/11/2010
(Ajay Talegaonkar)

SE (Operations)

Copy to : GM, NRLDC, New Delhi

Minutes of the meeting taken by Member Secretary, NRPC on 20th October, 2010 regarding replacement of Porcelain Insulators with Polymer / Antifog Insulators on Transmission Lines in NR.

List of participants is enclosed at Annex-I.

1. MS, NRPC, welcomed the participants in the meeting to review the progress of replacement of porcelain insulators with polymer/antifog insulators and cleaning of porcelain insulators in Northern Region. He recalled the recommendations of the enquiry committee that porcelain insulators should be replaced with polymer insulators in high pollution area and by antifog insulators in area having medium level of pollution. In case of area with moderate pollution, it was recommended that porcelain insulators should be cleaned before onset of winter. He requested utilities to take shutdown and carry out replacement/cleaning work on war footing as it would be extremely difficult to get shutdown as demand picks up after onset of winter. He reiterated that for the sake of clarity, the work of replacement of porcelain insulators with polymer/antifog insulators has been classified in two categories – stage-I, consisting of lines which were identified consequent to grid disturbance in March 2008 and stage-II, which will contain lines which have been identified or will be identified subsequent to grid disturbance in January 2010. He requested utilities to give details of progress made so far.

2. Summary of Progress for various utilities as updated in the meeting is enclosed as Annex-II. The utility-wise status as updated during the meeting is as under:

3. POWERGRID

3.1 Representative of POWERGRID stated that all efforts shall be made to complete replacement work on transmission lines under Phase-I of Stage-I by mid-November. He further informed that replacement work on transmission lines under Phase-II of Stage-I is about 90% complete and balance work would be completed by end of November 2010. Representative of POWERGRID informed that work on three 220 kV transmission lines namely Faridabad-Samaypur-II and Faridabad-Palla I and II would be undertaken after winter as very few insulator flashovers have been observed on these lines. He stated that pace of work has been affected due to non-availability of polymer insulators. MS, NRPC requested POWERGRID to take up replacement in NCR area on priority basis. He advised POWERGRID that in stretches where replacement work cannot be completed before onset of winter, cleaning of

insulator should be done. Representative of POWERGRID stated that cleaning work would be undertaken close to 15th December so that pollutants do not get deposited again before onset of winter. The status of replacement work of POWERGRID is attached as **Annex-III (A, B and C)**.

4. Railways

4.1 Status of insulator replacement and cleaning on transmission lines owned by North-Central Railways is enclosed as **Annex-IV**. It was noted that North-Central Railways are planning to complete cleaning work by end of December 2010. MS, NRPC advised Railways to complete the cleaning work by 15th December 2010.

4.2 No representative of Northern Railways was present in the meeting.

5. Delhi

5.1 Status of insulator replacement and cleaning on transmission lines owned by Railways is enclosed as **Annex-V**. Representative of DTL informed that they are proposing to carry out hot line cleaning, which is likely to be completed by 15th December 2010. In response to a query, representative of DTL stated that 90% of the replacement work on 400 kV lines would be completed by end of November 2010. He added that since no smog related tripping have been observed on 220 kV lines so no replacement is proposed in case of 220 kV lines. However, cleaning work would be carried out on these lines.

6. Haryana

6.1 Representative of HVPNL stated that out of the 25 transmission lines identified for replacement of porcelain insulators, work has been completed on 13 transmission lines. He stated that contract for insulator replacement for remaining lines under Stage-I have been awarded but work could not be started due to contractual dispute and therefore work of insulator cleaning would be undertaken for these lines. He also informed that some locations are submerged in water and therefore neither replacement nor cleaning work would be possible at such locations. Progress of work in Haryana under stage-I and list of additional lines identified for stage-II as furnished in the meeting are attached as **Annex-VI**

7. Punjab

7.1 Representative of Punjab State Transmission Co. Ltd. (PSTCL) submitted status of cleaning of porcelain insulators and schedule of replacement of porcelain insulators with polymer/antifog insulators, which is enclosed at **Annex-VII (A, B, C and D)**. MS, NRPC advised PSTCL that priority should be given for carrying out work in the pollution zone such as Ludhiana, Gobindgarh, Bhatinda and Ropar Area.

8. POWERLINKS

8.1 Representative of POWERLINK stated that they have completed the entire work identified under stage-I. No new lines have been identified for replacement of insulators under stage-II. He stated that they have identified 111 nos of towers in light pollution zone (400 kV D/C Twin Moose Bareilly-Mandola line) for pre-winter cleaning scheduled during November, 2010. The details of lines are placed at **Annex- VIII**.

9. UP and BBMB

9.1 No representative from BBMB and UPPTCL attended the meeting. However, status of work as submitted by BBMB is attached as **Annex-IX (A, B and C)**.

Meeting ended with vote of thanks to the Chair.

Annexure - I

List of Participants of the Meeting on Polymer Insulator

In chair- Shri A K Aggarwal, MS, NRPC

Name (Shri)	Designation	Organization	Mobile No.	Email id
<u>POWERGRID</u>				
B. Sharma	GM	POWERGIRD NR-I	9958555761	bsharma@powergridindia.com
R. K. Singh	Manager	POWERGIRD NR-I	9873918545	raviksin@yahoo.com
<u>DTL</u>				
Loveleen Singh	DGM (T)	DTL	9540040659	loveleen.singh@dtl.gov.in
P. P. Singh	Mgr.(T)	DTL	9540040643	
<u>NRLDC</u>				
D. K. Jain	DGM	NRLDC	9910344127	dkj2009@yahoo.co.in
<u>PSTCL</u>				
P. J. Alok	Dy CE	PSTCL	9646118203	pjalok.pseb@gmail.com
<u>HVPN</u>				
Sanjay Arora	PR	HVPN	9356273746	pchvph1@gmail.com
<u>POWERLINKS</u>				
Anupam Gupta	Manager (Engg & QA)	POWERLINKS	9871371628	agupta@powerlinks.co.in
<u>North-Central Railway</u>				
Om Prakash	Chief Electrical Distribution Engineer	North-Central Railway	9794835301	cede@ncr.railnet.gov.in
<u>NRPC</u>				
Ajay Talegaonkar	SE(O)	NRPC		nrebops@yahoo.com
Ashwini Kumar	Chief Manager	POWERGRID	9910378064	ashwinikr@powergridindia.com

Annexure - II				
Summary of Replacement of Porcelain Insulators by Polymer / Antifog Insulators				
Utility	Stage-I (Lines identified after grid incidence on 8th March 2008)		Stage-II (Lines identified after grid incidence on 2nd January 2010)	
	Lines Identified (Nos)	Progress of Replacement of Insulator String (%)	Lines Identified (Nos)	Progress of Replacement of Insulator String (%)
HVPNL	25	50	13	Nil
POWERGRID	54	59	39	Nil
BBMB	35	37	4	-
DTL	20	40	*	-
UPPTCL	16	37	*	-
PSTCL	20	8	35	Nil
POWERLINK	1	100	-	-

* Lines are yet to be identified in Stage-II

Status of Erection of Polymer Insulators (Phase-I, PHASE-II & Phase-III) as on 27.09.2010.

Sl. No	Name of line	Total line length	Identified length of line for insulators replacement	No. of locations	Suspension	Tension	Insulator String required					No. of locations on which Insulators replaced	Suspension	Tension	Insulator String replaced						Balance to be replaced						Schedule for replacement of balance		Remarks
		Kms	Kms	No.	No.	No.	70 KN	90 KN	120 KN	160 KN	210 KN	No.	No.	No.	70 KN	90 KN	120 KN	160 KN	210 KN	Total	70 KN	90 KN	120 KN	160 KN	210 KN	Total	Date of commencement	Date of completion	
1	400 KV Meerut-Mandola-I	60	60	166	118	48		708		576		166	118	48		708		576		1284	0	0	0	0		0	Completed in Phase-I		
2	400 KV Meerut-Mandola-II	60	60	166	118	48		708		576		166	118	48		708		576		1284	0	0	0	0		0			
3	400 KV Dadri-Mandola-I	46	46	124	92	32				1338		124	92	32				1338		1338	0	0	0	0		0			
4	400 KV Dadri-Mandola-II	46	46	124	92	32				1338		124	92	32				1338		1338	0	0	0	0		0			
5	400 KV Dadri-Panipat-I	112	112	301	233	68			699	816		301	233	68			699	816		1515	0	0	0	0		0			
6	400 KV Dadri-Panipat-II	117	117	328	245	83		0	735	996		328	245	83			735	996		1731	0	0	0	0		0			
7	400 KV Dadri-M'Kotla	105	105	282	224	58			672	702		282	224	58			672	702		1374	0	0	0	0		0			
8	400 KV Dadri-G. NOIDA	13.1	13.1	37	26	11				429		37	26	11				429		429	0	0	0	0		0	Completed in Phase-II		
9	400 KV G.NOIDA-Ballabgarh	42.7	42.7	107.5	73	34.5				1270		107.5	73	34.5				1270		1270	0	0	0	0		0			
10	400 KV Dadri - Maharanibagh	58	58	67.5	50	17.5				730		67.5	50	17.5				730		730	0	0	0	0		0			
11	400 KV Maharanibagh-Ballabgarh	31	31	109	83	26				1122		109	83	26				1122		1122	0	0	0	0		0			
12	400 KV S/C Ballabgarh-Bhiwadi	60.887	50	132	119	13			358	150		132	118	14			358	150		508	0	0	0	0		0			
13	400 KV M'nagar-Muradabad	132.961	132.961	357	284	73			895	876		357	284	73			895	876		1771	0	0	0	0		0			
14	400 KV S/C Kanpur-Ballabgarh	386	232	628	513	115			1563	1380		628	513	115			1563	1380		2943	0	0	0	0		0			
15	400 KV S/C Agra-Ballabgarh	181.137	100	283	256	27		512	512	324		283	256	27		512	512	324		1348	0	0	0	0		0			
16	400 KV S/C Meerut-Muzaffarnagar	37.38	37	107	82	25			256	300		107	82	25			256	300		556	0	0	0	0		0			
17	400 KV S/C Bhiwadi-Bassi -I	235	120	350	317	33			951	396		350	317	33			951	396		1347	0	0	0	0		0			
18	400 KV S/C Bhiwadi -Bassi-II (LILO of Old Bassi-Hissar)	220	15	55	40	15		240		180		55	40	15		240		180		420	0	0	0	0		0			
19	220 KV FGPP-Samaypur I	18	16	64	32	32	102	6	192			64	32	32	102	6	192			300	0	0	0	0		0			
20	400 KV S/C Allahabad-Kanpur-I		4	13	13	0			39			13	13	0			39		0	39			0			0	Replacement carried out due to emergency	0	
21	400 KV S/C Allahabad-Kanpur-II		4	13	13	0			39			13	13	0			39		0	39			0			0			
22	400 KV Mainpuri-Ballabgarh-I	236	142	358	325	33			975	396		358	325	33			975	396		1371	0	0	0	0		0			
23	400 KV Dadri-Muradnagar	24	24	90	61	30			182	366		87.5	61	26.5			182	318		500	0	0	0	48		48	In Opportunity S/D	91%	complete
24	400 KV Mainpuri-Ballabgarh-II	236	142	362	319	43			957	516		354	311	43			933	516		1449	0	0	24	0		24	In Opportunity S/D	98%	complete
25	400 KV S/C Hissar-Bhiwadi (up to LILO point)	277	166	360	294	66		1764		792		305	290	15		1740		180		1920	0	24	0	612		636	DEC 10	DEC 10	85% complete
26	220 KV FGPP-Palla I	16	16	54	33	21	99		126			38	19	19	57		114			171	42	0	12	0		54	Shall be taken up after receiving 70 KN Insulators .	76% complete	
27	220 KV FGPP-Palla II	16	16	54	33	21	112		126			32	14	18	55		108			163	57	0	18	0		75		64% complete	
28	220 KV FGPP-Samaypur II	18	16	64	32	32	94	6	192			33	1	32	1	6	192			199	93	0	0	0		93		66% complete	
29	LILO of 400 KV Ballabgarh-Bhiwadi at G'Gaon (D/C)	35	35	109	50	59			300	1416		60	47	13			282	300		582	0	0	18	1116		1134		27% complete	
30	400 KV Agra-Bhiwadi-I	208	100	198	186	12			558	144										0	0	0	558	144		702	Shall be taken up after receiving Insulators under PCK-C	NIL	
31	400 KV Agra-Bhiwadi-II	209	100	205	186	19			558	228										0	0	0	558	228		786		NIL	
32	LILO of 400 KV Bly-Mandola at Meerut			22	18	4			54	48										0	0	0	54	48		102		NIL	
33	LILO of 400 KV Lko-Mbd at Bly.			22	20	2			60	24										0	0	0	60	24		84		NIL	
34	400 KV Bly-Mbd-II			108	60	48			180	576										0	0	0	180	576		756		NIL	
	TOTAL FOR AC LINES			5820	4640	791	407	3944	11179	18005	0	5081	4090	991	215	3920	9697	15209	0		192	24	1482	2796	0				
	TOTAL OF INSULATOR STRINGS								33535								29041					4494							
35	± 500 KV HVDC Rh-Dadri P-I	815	354	885	796	89				2304		621	552	69				1664				0	0	640		640	20.11.10-26.11.10	72% complete	
36	± 500 KV HVDC Rh-Dadri P-II	815	354	885	796	89				2304		645	583	62				1662				0	0	642		642	28.11.10-04.12.10	72% complete	
37	± 500 KV HVDC Ballia-Bhiwadi Pole-I	789.96	150	400	360	40					1040	148	137	11					362						678	678	DURING THE COMMISSIONING OF POLE-II	35 % complete	
38	± 500 KV HVDC Ballia-Bhiwadi Pole-II	789.96	150	400	360	40					1040	148	137	11					362						678	678		35 % complete	
	TOTAL FOR DC LINES:			2570	2312	258	0	0	0	4608	2080	1562	1409	153	0	0	0	3326	724		0	0	0	1282	1356	2638			

TOTAL OF INSULATOR STRINGS						6688						4050						2638									
TOTAL FOR AC & DC LINES						8390	6952	1049	407	3944	11179	22613	2080	6643	5499	1144	215	3920	9697	18535	724	192	24	1482	4078	1356	7132
TOTAL OF INSULATOR STRINGS						40223						33091						7132									

Status of Erection of Polymer Insulators										
Sl. No	Name of line	Total Location s (No)	Total Polymer Strings Required (No)	Location Replaced (No)	Polymer Insulator strings replaced	Balance strings (To be replaced)	% Complete	Remarks	Schedule for replacement of balance	
In Phase- I									Date of commencement	Date of completion
1	400 KV Meerut-Mandola-I	166	1284	166	1284	0	100%			
2	400 KV Meerut-Mandola-II	166	1284	166	1284	0				
3	400 KV Dadri Mandola-I	124	1338	124	1338	0				
4	400 KV Dadri Mandola-II	124	1338	124	1338	0				
5	400 KV Dadri-Panipat-I	301	1515	301	1515	0				
6	400 KV Dadri-Panipat-II	328	1731	328	1731	0				
7	400 KV Dadri-M'Kotla	282	1374	282	1374	0				
8	400 KV Dadri-G. NOIDA	37	429	37	429	0				
9	400 KV G.NOIDA-Ballabgarh	107.5	1270	107.5	1270	0				
10	400 KV Dadri - Maharanibagh	67.5	730	67.5	730	0				
11	400 KV Maharanibagh-Ballabgarh	109	1122	109	1122	0				
12	400 KV Mainpuri-Ballabgarh-I	358	1371	358	1371	0				
13	400 KV S/C Hissar-Bhiwadi (up to LILO point)	360	2556	305	1920	636	85% complete	55 Tension locations left to be completed after receipt of 160 KN Insulators	'DEC 10	'DEC 10
14	400 KV Mainpuri-Ballabgarh-II	362	1473	354	1449	24	98 % complete			
15	400 KV S/C Kanpur-Ballabgarh	628	2943	628	2943	0	100% complete			
16	± 500 KV HVDC Rh-Dadri P-I	885	2304	621	1664	640	72% complete			
17	± 500 KV HVDC Rh-Dadri P-II	885	2304	645	1662	642	72% complete			
In Phase- II										
18	400 KV S/C Ballabgarh-Bhiwadi	132	508	132	508	0	100%			
19	400 KV S/C Agra-Ballabgarh	283	1348	283	1348	0				
20	400 KV Dadri-Muradnagar	90	548	87.5	500	48	91% complete		In Opportunity S/D	
21	400 KV S/C Bhiwadi-Bassi -I	350	1347	350	1347	0	100%			
22	400 KV M'nagar-Muradabad	356.5	1771	356.5	1771	0				
23	400 KV S/C Meerut-Muzaffarnagar	107	556	107	556	0				
24	220 KV FGPP-Palla I	54	225	38	171	54	76% complete		Work will be taken up in March 2011 after receipt of Polymer Insulators in next phase of Insulator replacement work.	
25	220 KV FGPP-Palla II	54	238	32	163	75	64% complete			
26	220 KV FGPP-Samaypur I	64	300	64	300	0	100%			
27	220 KV FGPP-Samaypur II	64	292	33	199	93	66% complete		Work will be taken up in March 2011 after receipt of Polymer Insulators in next phase of Insulator replacement work.	
In Phase-III										
28	400 KV S/C Bhiwadi -Bassi-II (LILO of Old Bassi-Hissar)	55	420	55	420	0	100%			
29	400 KV Agra-Bhiwadi-I	198	702	0	0	702	NIL		Shall be taken up after receiving Insulators under PCK-C	
30	400 KV Agra-Bhiwadi-II	205	786	0	0	786	NIL			
31	LILO of 400 KV Bly-Mandola at Meerut	22	102	0	0	102	NIL			
32	LILO of 400 KV Ballabgarh-Bhiwadi at G'Gaon	109	1716	59.5	582	1134	27% complete			
33	LILO of 400 KV Lko-Mbd at Bly	22	84	0	0	84	NIL			
34	400 KV Bly-Mbd-II	108	756	0	0	756	NIL			
35	± 500 KV HVDC Ballia-Bhiwadi Pole-I	400	1040	148	362	678	35 % complete		DURING THE COMMISSIONING OF POLE-II	
36	± 500 KV HVDC Ballia-Bhiwadi Pole-II	400	1040	148	362	678	35 % complete			
Other than Phase										
1	400 KV S/C Allahabad-Kanpur-I	13	39	13	39	0	100%			
2	400 KV S/C Allahabad-Kanpur-II	13	39	13	39	0				

	TOTAL FOR AC LINES:	5819.5	33535	5081	29041	4494				
	TOTAL FOR DC LINES	2570	6688	1562	4050	2638				
	TOTAL FOR AC & DC LINES	8390	40223	6643	33091	7132				

Annexure - III C

Status of Supply of Polymer Insulators as on 27.09.2010											
For AC Lines											
Type of Insulator	Supplied										
	Procured by NR-I	Quantities received under Pkg A2	Quantities received under Pkg A1	Quantities received under Pkg B	Total supplied	Quantity installed	Issued for 400 KV D/C KNP-BLB(Under Cons)	Balance available	Quantities to be supplied under Pkg-C	Scheduled date of arrival	Status
	No	No	No.	No	No	No	No	No	No	Pkg-C	
70 KN (220 KV)				215	215	215	0	0	0		LOT 2 allocated to NR-I is likely to be shipped by 25 Oct 2010
120 KN (220 KV)				700	700	606	0	94	0		
90 KN (400 KV)		2013	2013	539	4565	3920	0	645	0		
120 KN (400 KV)	700	3206	3206	3044	10156	9091	469	596	2445	30.01.2010	
160 KN (400 KV)		7036	7036	1968	16040	15209	792	39	1524	30.01.2010	
TOTAL	700	12255	12255	6466	31676	29041	1261	1374	3969		
For HVDC Rihand-Dadri line											
Type of Insulator	Quantities already supplied							Quantities to be supplied			
	Received under developmental order	Received	Quantity installed			Diverted to SR-I	Balance available	Scheduled date of arrival of balance quantity		Status	
	No	No	No			No	No	NIL		Material arrived	
160 KN (Pkg D1)	40	5069	3326			0	1783				
For HVDC Ballia -Bhiwadi line											
210 KN (Pkg D2)	0	2288	724			80	1484	NIL		Material arrived	
TOTAL		7357	4050				3267				

Progress of Cleaning / Replacement of Insulators						Annexure - IV
North Central Railways					Status as on 01.10.201	
1.0 PROGRESS OF CLEANING OF INSULATORS						
1.1 66kV TR line:						
SN	Section	No. of TT	No. of ST	No. of TS	No. of SS	Progress of Cleaning
1	Ballabgarh TSS-Hodal TSS	30	117	369	819	7 TT (90 Strings) & 72 ST (435 String cleaned and work in progress.) PDC: 15.11.10
1.2 132kV TR line:						
SN	Section					
1	Naurangabad GSS-Mathura TSS	10	13	64	76	All insulators have been cleaned.
2	Sikandara GSS-Bhandai TSS	23	61	216	257	All insulators have been cleaned.
3	Narayanpur PuVVNL to Jeonathpur TSS	12	10	40	92	Agency for cleaninig of 450 Strings fixed. Work in Progress. PDC 15.12.2010.
4	Patharia PuVVNL to Mirzapur TSS	7	2	8	68	
5	Naini Complex PuVVNL to Bhirpur TSS	21	42	168	169	
6	Manauri PuVVNL to Manauri TSS	10	2	8	108	
7	Radhanagar PuVVNL to Rasulabad TSS	18	51	204	160	
8	Sarsaul-Panki	47	77	703	537	Agency for cleaninig of 140 Strings fixed. Work in Progress.
9	Panki-Phaphoond	50	186	718	723	Cleaning being done departmentally. PDC 15.12.2010.
10	Phaphond-Mitawali	130	397	1914	3050	
11	Mitawali-Dadri	146	428	2025	2946	Agency for Cleaning of 2421 suspension strings between Dadri-
12	Dadri-Sahibabad	27	50	348	229	Sahibabad fixed & LOA issued on 12.10.10 PDC 15.12.2010.
1.3 220kV TR line:						
SN	Section					
1	NTPC Switch Yard-Dadri GSS	30	27	492	234+24 at DER/GSS	LOA issued on 12.10.10 for cleaning of 258 suspension string between DER/NTPC to DER/GSS. Cleaning of Tension strings will start from 1.12.10 & will be completed up to 31.12.10.
2	Auraiya-Phaphoond GSS	24	12	372		
2.0 PROGRESS OF REPLACEMENT OF INSULATORS						
2.1 66kV TR line						
SN	Section	No. of TT	No. of ST	No. of TS	No. of SS	Progress of replacement
1	Ballabhagarh TSS-Hodal TSS	NIL	NIL	NIL	NIL	There is no flash/broken insulator.
2.2 132kV TR line:						
SN	Section					
1	Naurangabad GSS Mathura TSS	NIL	5	NIL	5	06 flashed & 5 broken disc replaced. Work completed
2	Sikandara Agra GSS-Bhandai TSS	NIL	17	NIL	17	33 flashed & 8 broken disc replaced. Work completed
3	Dadri-Sahibabad Ckt-I	27	50	159	117	Long Rod Polymer composite insulator LRPCI)-117 suspension and 33 in tension string.
4	Dadri-Sahibabad Ckt-II	27	50	159	117	NIL
5	Dadri-Dankaur Ckt-I	27	46	204	156	(LRPCI)-156 suspension and 119 in tension string.
6	Dadri-Dankaur Ckt-II	27	46	204	174	(LRPCI)-174 suspension and 114 in tension Long Rod string.
7	Dankaur-Khurja Ckt.I	18	76	126	243	(LRPCI)-180 suspension string.
8	Dankaur-Khurja Ckt.II	18	76	126	249	NIL
9	Aligarh Jn-Mandrak Ckt.I	12	50	87	171	(LRPCI) 57 suspension string.
10	Panki-Shikohabad					3000 porcelain type suspension insulator strings have been replaced in 2008-09
684 suspension and 266 tension type (total 950) BHEL make long rod composite polymer insulators as per PGCIL specification have been provided in 132kV TR line between Mitawali-Sahibabad as indicated above.						
2.3 220kV TR line:						
SN	Section	No. of TT	No. of ST	No. of TS	No. of SS	Progress of replacement
1	NTPC Dadri-Dadri GSS	30	27	492	234+24 at DER/GSS	Procurement of long rod composite insulator-260 suspension and 486 tension type is held up for want of RDSO specification.
2	Auraiya Switch Yard-Phaphoond GSS	24	12	372	120	Non Pollution area, therefore not planned for replacement.
3.0 PROGRESS OF PROVISION OF ADDITIONAL DISC INSULATORS						
3.1 66kV TR line:						
SN	Section	No. of TT	No. of ST	No. of TS	No. of SS	Progress of replacement
1	Ballabhagarh TSS-Hodal TSS	30	117	369	819	Not yet Planned.
At present 5 in suspension and 6 disc insulator in tension strings have been provided and no additional disc insulator provided in TR line.						
3.2 132kV TR line:						
SN	Section					
1	Naurangabad GSS-Mathura TSS	10	13	64	76	At present 9 in suspension and 10 disc insulators in tension provided in TR line. No additional disc insulator provided in TR
2	Sikandara GSS-Bhandai TSS	23	61	216	257	
3	Sarsaul-Panki-Mitawali-Dadri-Sahibabad					
3.3 220kV TR line:						
SN	Section					
1	Dadri/GSS-Dadri/NTPC	30	27	492	234+24 at Dadri GSS	Additional disc provided on Ckt-I 105 strings (in 27 towers)
Legend: Tention tower (TT), Suspension Tower (ST),						
Tension String (TS), Suspension String (SS)						

Annexure - V			
Delhi Transco Limited			
Status of Polymer work		As on dated: 20-10-2010	
1. BWN-MDL D/C			
	Complete	Balance	Total
A) Tower	10	58	68
B) String	454	1455	1909
2 BWN-BML D/C			
	Complete	Balance	Total
A) Tower	38	65	103
B) String	718	1328	2046
2 BML-BLB D/C			
	Complete	Balance	Total
A) Tower	113	36	149
B) String	2965	465	3430
Total			
	Complete	Balance	Total
A) Tower	161	159	320
B) String	4137	3248	7385
Remarks:			
1. Tower scheduled during existing shut-down b/w 18.10.2010 to 28.10.2010 on 400kV Bawana-Bamnauli line-40 Nos.			
2. Hot line washing on critical towers-30 Nos.			
3. Shut-down for replacement of polymer insulators shall also be taken in November 2010 for balance work.			

Status of Replacement of Porcelain Insulators with Polymer / Antifog Insulators

Name of the Organization: HVPN													Status as on: 31.09.10
Priority No.	Name of line	Line Length		Length where Insulators to be Replaced						Insulator Strings replaced per day per gang	Other maintenance work	Line shut-down (no. of days)	Remarks
		Kms/ Towers	Total Insulator Strings (No.s)	Kms/ Towers	Total Insulator Strings (No.s)	Insulator Strings replaced (No.s)	Schedule for replacement of balance	Start Date	End Date				
1	220KV Sewah-PTPS Ckt-I	12	198	12	198	198		Completed					
2	220KV Sewah-PTPS Ckt-II	12	198	12	198	198		Completed					
3	220KV Sewah-PTPS Ckt-III	12.5	213	12.5	213	213		Completed					
4	220KV Sewah-PTPS Ckt-IV	12.5	213	12.5	213	213		Completed					
5	220KV PTPS-Sonepat Ckt-I	51.5	634	51.5	634	600		Completed					
	220KV PTPS-Sonepat Ckt-II	51.5	634	51.5	634	600		Completed					
6	220KV Nuna-Majra-B/garh(400KV) Ckt-I	2.9	42	2.9	42	42		Completed					
	220KV Nuna-Majra-B/garh(400KV) Ckt-II	2.9	42	2.9	42	42		Completed					
7	220KV Rohtak-B/garh Ckt-I	46	576	46	576	576		Completed					
	220KV Rohtak-B/garh Ckt-II	46	576	46	576	576		Completed					
8	220KV Rohtak-PTPS Ckt-I	63	726	63	726	NIL							
	220KV Rohtak-PTPS Ckt-II	63	726	63	726	NIL							
9	220KV Pali-Samaypur Ckt-I	10.5	342	10.5	342	81							
	220KV Pali-Samaypur Ckt-II	10.5	342	10.5	342	66							
10	220KV Pali-Palla Ckt-I	13.9	414	13.9	414	72							
	220KV Pali-Palla Ckt-II	13.9	414	13.9	414	74							
11	220KV Samaypur-Palwal Ckt-I	18.91	288	18.91	288	288		Completed					
	220KV Samaypur-Palwal Ckt-II	18.91	288	18.91	288	156							
12	220KV Badshahpur-Rewari D/C line	70.3	1410	70.3	1410	12							Planned for phase II
13	220KV D/C Sec-52-A-Pali line	23/89	690	23/89	690	NIL							
14	220KV Badshahpur-Samaypur D/C	24/86	642	24/86	642	309							
15	220KV Badshahpur-Pali D/C	24/86	726	24/86	726	322							
16	220KV S/C Badshahpur-IMT Manesar	11.772	240	11.772	240	24							
17	220KV D/C Daultabad-IMT Manesar	17.996	594	17.996	594	594		Completed					
18	220KV D/C Nuna-Majra-Daultabad	29.898	666	29.898	666	666		Completed					
	Total		11834		11834	5922							

Planned for phase II

Stage -II Additional lines identified by HVPNL

Priority No.	Name of line	Line Length		Length where insulators to be replaced						Insulator Strings replaced per day per gang	Other maintenance work	Line shut-down (no. of days)	Remarks
		Kms/Towers	Total Insulator Strings (No.s)	Kms/Towers	Total Insulator Strings (No.s)	Insulator Strings replaced (No.s)	Schedule for replacement of balance	Start Date	End Date				
1	220 kV PTPS-Safedon-Jind-I												
2	220 kV PTPS-Safedon-Jind-II												
3	220 kV PTPS-Safedon-Narwana-I												
4	220 kV PTPS-Safedon-Narwana-II												
5	220 kV PTPS- Jind D/C												
6	220 Abdullapur-RailwayI & II												
7	132 kV PTPS- Deewan I & II												
8	220 kV PTPS- Nissing - I & II												
9	220 kV PTPS- Karnal												
10	220 kV PTPS - Bastara				411								
11	220 kV - Bastara - Safidon				411								
12	220 kV Bastara- Kaul Ckt- I & II		1044		1044	1044							

XEN/PC

Annexure - VII A

Status of Cleaning of Insulators Manually	
1	2
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97	98
99	100

P&M Organization	(PSTCL)
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[illegible]

Annexure - VII B**Schedule for replacement of Ordinary Disc insulators with Antilog/Polymer Insulators (PSTCL)**

Sr. No.	Name of Line	Tentative date of replacement
1	220kV Ganguwal Gobindgarh Ckt.I	01.10.10 to 09.10.10
2	do- Ckt. II	11.10.10 to 18.01.10
3	220kV RTP-Gobindgarh-I Ckt.I	19.10.10 to 08.11.10
4	do--Ckt.II	29.10.10 to 08.11.10
5	do-Ckt.III	09.11.10 to 17.11.10
6	do--Ckt.IV	18.11.10 to 26.11.10
7	220kV Link G-I to G-III	27.11.10 to 04.12.10
8	do-- G-I to G-II	06.12.10 to 13.12.10
9	220kV Jamalpur- Ganguwal Ckt.I	15.10.10 to 20.10.10
10	do -Ckt-II	21.01.10 to 28.10.10
11	220kV Jamalpur Dhandari Ckt.I	29.10.10 to 03.11.10
12	do-Ckt-II	04.11.10 to 11.11.10
13	220kV RTP-Sahnewal Ckt.I &II	01.10.10 to 15.10.10
14	220kV Sahnewal-Lalton Ckt I & II	19.10.10 to 02.11.10
15	220kV Dhandari Lalton Ckt I	03.11.10 to 20.11.10
16	do-Ckt II	23.11.10 to 10.12.10

Annexure - VII C

Sub:- Schedule for replacement of ordinary discs with Antifog/Polymer discs for the year 2010-10 (linewise). (PSTCL)

SCHEDULE FOR REPLACEMENT OF ANTIFOG DISCS:

Sr. No.	Name of Line	Date/Month	No. of discs
1	220 kV Ablowal-Faggan Majra (DC)	01.10.10 to 02.10.10	336
2	220kV Faggan Majra-Rajpura-Bhaterl	04.10.10 to 07.10.10	560
3	-do-	11.10.10 to 16.10.10	700
4	-do-	18.10.10 to 21.10.10	896

SCHEDULE FOR REPLACEMENT OF POLYMER INSULATORS:

Sr. No.	Name of Line	Date/Month	No. of Insulators
1	66kV Lalru-Alamglr	03.11.10	25
2	do	10.11.10	25
3	66kV Derabassi-Lalru	04.11.10	35
4	do	11.11.10	35
5	220kV Ablowal-Gobindgarh-I&II	02.11.10	30
6	-do-	06.11.10	30
7	-do-	11.11.10	30
8	-do-	15.11.10	30
9	-do-	18.11.10	30
10	-do-	20.11.10	30
11	-do-	23.11.10	20

Annexure - VII D**Schedule of replacement of ordinary discs with Antifog/Polymer discs for the year 2010-11.
(PSTCL)**

Sr. No.	Name of Line	S/C or D/C	Total Insulators (Nos.)	Schedule for replacement of Discs
1	220kV Jamsher-Mahilpur	D/C	720	5.7.10 to 30.10.10
2	220kV Jamsher-Kona Janga	D/C	420	9.7.10 to 30.10.10
3	220kV Jamsher-BBMB	D/C	252	5.7.10 to 30.10.10
4	220kV Jamsher-RTP	S/C	84	5.7.10 to 30.10.10
5	220kV Jamsher-Goraya	S/C	84	5.7.10 to 30.10.10
6	220kV PGCIL-Katarpur	S/C	51	5.7.10 to 30.10.10
7	220kV PGCIL-Kotla Jaga	S/C	51	5.7.10 to 30.10.10
8	132kV BBMB Jal.-Rhagwara	S/C	16	5.7.10 to 30.10.10
9	132kV PIMS Jal.-Sciencecity	S/C	16	5.7.10 to 30.10.10
10	132kV Urban Estate Jal.-Nakodar	S/C	16	5.7.10 to 30.10.10
11	220kV Dasuya-Jalandhar Ckt.3	S/C	213	5.7.10 to 30.10.10
12	132kV Mukerian Tande-Bhogpur	S/C	48	5.7.10 to 30.10.10
13	132kV Mukerian - Bhogpur	S/C	48	5.7.10 to 30.10.10
14	132kV Jalandhar-Kanpur	S/C	72	5.7.10 to 30.10.10
15	132kV Kanpur-Bhogpur	S/C	24	5.7.10 to 30.10.10
16	132kV Jalandhar-Alawalpur	S/C	96	5.7.10 to 30.10.10

Annexure - VIII**POWERLINK****Status of Polymer work****As on 20-10-2010**

Sl. No.

	Requisite Information	Status	Remarks
1	Status of replacement of insulators identified prior to January 2010 (Stage-I)	Work Completed	120 kN-747 Nos. 160kN-1248 Nos. (400kV D/C Twin Moose Bareilly-Mandola line)
2	List of new lines/locations identified for insulator replacement after January 2010 (State-II)	Nil	
3	Action plan for cleaning of porcelain insulators in FY 201011	Pre-winter cleaning is scheduled in November 2010	Identified 111 towers in light pollution zone (400kV D/C Twin Moose Bareilly-Mandola line)

STATUS OF REPLACEMENT OF INSULATORS WITH ANTIFOG ON THE LINES IDENTIFIED BEFORE JANUARY 2010

		Antifog insulators											Annexure - IX A
Name of the organization: Bhakra Beas Management Board										Status as on: 14.10.2010			
Line Code	Name of line, voltage,S/C or D/C	Line Length			Length where insulators to be replaced						%age-wise work completed in Location	Remarks	
		Kms	No. of locations	Total Insulator Strings (Nos)	Kms	No. of locations	Total Insulator Strings required (Nos)	No. of locations	Insulator Strings replaced (Nos)	Schedule for replacement of balance			
										Start Date	End Date		
1	220KV Dhulkot-Panipat ckt-I	130	433	1669	..	29	117	29	117	..	...	100%	
2	220KV Dhulkot-Panipat ckt-II	130	433	1669	..	29	117	29	117	..	...	100%	
3	220KV S/C Panipat-Ch. Dadri Line	115	342	1173	..	21	81	21	81	..	..	100%	
4	Kurukshetra-Panipat Line	77.08	233	786	..	28	105	28	105			100%	
5	220KV BUSES at 400KV S/S Panipat	...	...	240		...	240	...	240			100%	
6	220KV Bhakra-Jamalpur ckt -I	86.4	1-276	1034	11	32	204	32	204			100%	
7	220KV Bhakra-Jamalpur ckt - II	86.4	1-276	1034	11	32	204	32	204			100%	
8	220KV Jamalpur-Jalandhar ckt-I	64	1-214	960	9	27	87	27	87	..	...	100%	
9	220KV Jamalpur-Jalandhar ckt- II	64	1-214	960	9	27	87	27	87	..	..	100%	
10	220KV Pong-Jalandhar ckt- I	97.5	1-328	1204	4	12	36	12	36			100%	
11	220KV Pong-Jalandhar ckt- II	97.5	1-328	1204	4	12	36	12	36			100%	
12	220KV Jamalpur-Sangrur ckt- I	78	1-268	970	15	40	313	40	313			100%	
13	220KV Jamalpur-Sangrur ckt- II	78	1-268	970	15	40	313	40	313			100%	
14	220KV Hisar-Sangrur-I	139	477	1431	139	62	186	62	186			100%	
15	220KV Hisar-Sangrur-II	139	477	1431	139	62	186	62	186			100%	
16	220KV Bhiwani-Hisar-I	57.95	199	654	30	102	345		321	27/11/10	30/11/10	93%	
17	220KV Bhiwani-Hisar-II	57.95	199	654	30	102	345	98	327	25/10/10	28/10/10	95%	
18	220KV Bhiwani-Ch. Dadri-I	36.45	124	420	7.6	26	81	26	81			100%	
19	220KV Bhiwani-Ch. Dadri-II	36.45	124	420	7.6	26	81	26	81			100%	
20	220KV Bhiwani-Ch. Dadri-III	34.7	127	444	9.5	35	114	35	114			100%	
21	220KV Bhiwani-Ch. Dadri-IV	34.7	127	444	9.5	35	114	35	114			100%	

Total

3392

3350

निदेशक/विद्युत विनियम,
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Annexure - IX B

Status of Replacement of Insulator with Polymer on lines identified prior to Jan.2010												
Name of the organization: Bhakra Beas Management Board							Status as on: 13.10.2010					
Sl. No.	Name of line, voltage, S/C or D/C	Line Length			Insulator to be		Status of				%age-wise work completed in Location	Remarks
		Kms	No. of locations	Total Insulator Strings (Nos)	No. of locations	Total Insulator Strings required (Nos)	No. of locations	Insulator strings replaced (Nos.)	Schedule for replacement of disc insulator with polymer insulator			
									Start Date	End Date		
1	400KV S/C Dehar-Panipat Line	261.8	772	4314	206	771	Note: Matter has been under discussion with PGCIL for quite sometime and team of BBMB Engineers visited power grid in the second week of October. Power grid vide their letter dated 15.10.2010 has expressed inability to procure the insulators for BBMB due					
2	400KV S/C Dehar-Bhiwani Line	312.15	943	4791	331	1245						
3	220KV R/Road-Narela ckt-I	22	81	426	81	426			Nov-10	Dec-10		220 kV Polymer Insulators received at site.
4	220KV R/Road-Narela ckt-II	22	81	426	81	426			Oct-10	Nov-10		
5	220KV Panipat-Narela ckt-I	56.8	197	811	73	263			Nov-10	Dec-10		
6	220KV Panipat-Narela ckt-II	56.8	197	811	73	263			Oct-10	Dec-10		
7	220KV Panipat-Narela ckt-III	58	171	588	81	273			Oct-10	Dec-10		
8	220KV Ballabgarh-BTPS-I	24.73	90	321	90	321			Oct-10	Dec-10		
9	220KV Ballabgarh-BTPS-II	24.73	90	321	90	321			Oct-10	Dec-10		
10	220KV Samaypur-Ch. Dadri S/C	118	400	1323	154	518			Oct-10	Nov-10		
11	220KV Ballabgarh-Ch. Dadri S/C	119.7	407	1378	169	569			Oct-10	Nov-10		
12	220KV Ballabgarh-Samaypur-I	4.23	20	84	20	84			Nov-10	Dec-10		
13	220KV Ballabgarh-Samaypur-II	4.23	20	84	20	84			Nov-10	Dec-10		
14	220KV Ballabgarh-Samaypur-III	5.5	23	87	15	51			Nov-10	Dec-10		

Total

5615

0

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बीबीएमबी, चण्डीगढ़ ।

Status of replacement of Insulators with Antifog in Phase-II on the lines identified after Jan.2010												
	Antifog insulators								Phase-I			
Name of the organization: Bhakra Beas Management Board									Status as on:			
S.No.	Name of line, voltage,S/C or D/C	Line Length			Length where insulators to be replaced			Status of Replacement				%age-wise work completed in Location
		Kms	No. of locations	Total Insulator Strings (Nos)	Kms	No. of locations	Total Insulator Strings required (Nos)	No. of locations	Insulator Strings replaced (Nos)	Schedule for replacement of balance		
										Start Date	End Date	
1	220KV Dhulkot-Panipat ckt-I	130	433	1669	142	608						A&A obtained and preperation of specifikation Initiated.
2	220KV Dhulkot-Panipat ckt-II	130	433	1669	142	608						
3	220KV S/C Panipat-Ch. Dadri Line	115	342	1173	40	126						
4	220KV S/C Kurukshetra-Panipat Line	77.08	233	786	104	351						
5	220KV BUSES at 400KV S/S Panipat					45						

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