

Ready Reckoner for Reduction in WR-NR/NR Import TTC/ATC for different Contingencies

S. No.	Case (A)	Limiting contingency (N- 1) (B)	Limiting constraint (C)	WR-NR Limits (TTC) (D)	ER-NR Limits (TTC) (°E)	NR Import (TTC) (F)	RM for NR Import (G)	ATC (H)	TTC Change w.r.t. base case (NR Import)	Next Limiting Constraint
1	Basecase with all lines in service	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18750	8000	26750	1400	25350	0	
2	Outage of Mundra Mahindragarh single pole	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18050	7800	25850	1400	24450	-900	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 100 MW from Column 'F'.
3	Outage of Mundra Mahindragarh Bipole	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17300	7650	24950	1400	23550	-1800	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
4	Outage of Champa Kurukshetra single pole	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17450	7800	25250	1400	23850	-1500	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 200 MW from Column 'F'.
5	Outage of Champa Kurukshetra bipole	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	16200	7650	23850	1400	22450	-2900	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 400 MW from Column 'F'.
6	Outage of Champa Kurukshetra Pole 1, 2 & 3	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	14950	7500	22450	1400	21050	-4300	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 600 MW from Column 'F'.
7	Outage of Champa Kurukshetra Pole 1, 2, 3 & 4	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	13650	7300	20950	1400	19550	-5800	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 750 MW from Column 'F'.
8	Outage of APD - Agra Pole single pole (power order may be increased in oher pole)	Outage of 765/400 kV, 1000 MVA Satna ICT	High loading of 765/400 kV, 1000 MVA other ICT of Satna	18750	7700	26450	1400	25050	-300	N-1 of 765 kV Vindhyachal-Varanasi D/C with increment of 700 MW from Column 'F'.
9	Outage of 765 kV Vindhyachal - Varanasi S/C	Outage of 765 kV Satna - Orai S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17150	7700	24850	1400	23450	-1900	Overloading of 765 kV Vindhyachal-Varanasi other ckt on outage of 765 kV Satna - Gwalior with an increment of 200 MW from Column 'F'.
10	Outage of 765 kV Agra - Jhatikara S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18650	7950	26600	1400	25200	-150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
11	Outage of 765 kV Aligarh-Jhatikara S/C	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
12	Outage of 765 kV Phagi - Gwalior S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18450	7850	26300	1400	24900	-450	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 450 MW from Column 'F'.
13	Outage of 765 kV Agra - Gwalior S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17900	7700	25600	1400	24200	-1150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 850 MW from Column 'F'.
14	Outage of 765 kV Agra - Fatehpur S/C	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
15	Outage of 765 kV Phagi-Bhiwani S/C*	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18600	7950	26550	1400	25150	-200	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
16	Outage of 765 kV Phagi-Ajmer S/C*	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18700	7950	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 100 MW from Column 'F'.
17	Outage of 765 kV Anpara C-Unnao Line	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
18	Outage of 765 kV Gwalior - Orai S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18700	7950	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 900 MW from Column 'F'.
19	Outage of 765 kV Aligarh - Orai S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17950	7700	25650	1400	24250	-1100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
20	Outage of 765 kV Satna-Orai Line	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17000	7300	24300	1400	22900	-2450	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 4000 MW from Column 'F'.
21	Outage of 765 kV Satna-Gwalior Line	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17200	7400	24600	1400	23200	-2150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 3800 MW from Column 'F'.
22	Outage of 765 kV Satna-Bina S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18250	7750	26000	1400	24600	-750	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 1700 MW from Column 'F'.

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23	Outage of 765 kV Aligarh-Greater Noida S/C ¹	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18300	7850	26150	1400	24750	-600	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 500 MW from Column 'F'.
24	Outage of 765 kV Fatehabad-Greater Noida S/C	No constraint	No constraint	18750	8000	26750	1400	25350	0	No curtailment
25	Outage of 765 kV Chhitorgarh - Banaskantha S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18600	7950	26550	1400	25150	-200	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 50 MW from Column 'F'.
26	Outage of 765 kV Chhitorgarh - Ajmer S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18700	7950	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 50 MW from Column 'F'.
27	Outage of 765 kV Bhadla - Bikaner S/C	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
28	Outage of 765 kV Bhadla II - Ajmer S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18700	7950	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 100 MW from Column 'F'.
29	Outage of 765 kV Jabalpur - Orai S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18050	7800	25850	1400	24450	-900	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 50 MW from Column 'F'.
30	Outage of 765 kV Agra - Aligarh S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18650	7950	26600	1400	25200	-150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 100 MW from Column 'F'.
31	Outage of 765 kV Gaya - Varanasi S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18700	7950	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 100 MW from Column 'F'.
32	Outage of 765 kV Gaya - Balia S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18750	7900	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 50 MW from Column 'F'.
33	Outage of 765 kV Jabalpur - Vindhyachal S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18050	7600	25650	1400	24250	-1100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 1200 MW from Column 'F'.
34	Outage of 400 kV Gaya-Chandwa S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18550	7800	26350	1400	24950	-400	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 200 MW from Column 'F'.
35	Outage of 400 kV Gaya-Chandwa D/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18050	7350	25400	1400	24000	-1350	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 600 MW from Column 'F'.
36	Outage of 400 kV Ranchi-Chandwa S/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18600	7850	26450	1400	25050	-300	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
37	Outage of 400 kV Ranchi-Chandwa D/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18050	7350	25400	1400	24000	-1350	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 600 MW from Column 'F'.
38	Outage of 765 kV Vindhyachal - Varanasi D/C	Outage of 765/400 kV, 1000 MVA Orai ICT	High loading of other 765 /400 kV, 1000 MVA Orai ICT	17800	8000	25800	1400	24400	-950	N-1 of 765 kV Agra - Gwalior D/C with increment of 2000 MW from Column 'F'.
39	Outage of 765 kV Vindhyachal - Jabalpur D/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	16700	7050	23750	1400	22350	-3000	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 3400 MW from Column 'F'.
40	Outage of 765 kV Agra - Gwalior D/C*	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	15900	7300	23200	1400	21800	-3550	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 2400 MW from Column 'F'.
41	Outage of 765 kV Agra - Fatehpur D/C*	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
42	Outage of 765 kV Phagi - Gwalior D/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	17950	7700	25650	1400	24250	-1100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 1200 MW from Column 'F'.
43	Outage of 765 kV Phagi-Bhiwani D/C*	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18350	7900	26250	1400	24850	-500	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 300 MW from Column 'F'.
44	Outage of 765 kV Phagi-Ajmer D/C*	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	18700	7950	26650	1400	25250	-100	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 200 MW from Column 'F'.
45	Outage of 765 kV Aligarh - Orai D/C	Outage of 765 kV Vindhyachal- Varanasi S/C	High loading of 765 kV Vindhyachal- Varanasi other ckt	16750	7350	24100	1400	22700	-2650	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 2300 MW from Column 'F'.

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S. No.	Case (A)	Limiting contingency (N- 1) (B)	Limiting constraint (C)	WR-NR Limits (TTC) (D)	ER-NR Limits (TTC) ('E)	NR Import (TTC) (F)	RM for NR Import (G)	ATC (H)	TTC Change w.r.t. base case (NR Import)	Next Limiting Constraint
46	Outage of 765 kV Chhitorgarh - Banaskantha D/C	Outage of 765/400 kV, 1000 MVA Satna ICT	High loading of 765/400 kV, 1000 MVA other ICT of Satna	18050	7850	25900	1400	24500	-850	N-1 of 765 kV Vindhyachal-Varanasi D/C with increment of 50 MW from Column 'F'.
47	Outage of 765 kV Chhitorgarh - Ajmer D/C	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18550	7950	26500	1400	25100	-250	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 50 MW from Column 'F'.
48	Outage of 765 kV Bhadla - Bikaner D/C	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18750	8000	26750	1400	25350	0	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 50 MW from Column 'F'.
49	Outage of 765 kV Bhadla - Ajmer D/C	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18600	7950	26550	1400	25150	-200	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
50	Outage of 765 kV Aligarh - Jhatikara along with 765 kV Agra - Jhatikara Line	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18650	7950	26600	1400	25200	-150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 250 MW from Column 'F'.
51	Outage of 765 kV Aligarh - Gr. Noida along with 765 kV Aligarh - Jhatikara Line^	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18200	7800	26000	1400	24600	-750	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 700 MW from Column 'F'.
52	Outage of 765 kV Agra - Aligarh along with 765 kV Agra - Jhatikara Line	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18450	7900	26350	1400	24950	-400	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 300 MW from Column 'F'.
53	Outage of 765 kV Agra - Aligarh along with 765 kV Aligarh - G.Noida Line	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18250	7850	26100	1400	24700	-650	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 500 MW from Column 'F'.
54	Outage of 765 kV Agra - Aligarh along with 765 kV Aligarh - Jhatikara Line	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18650	7950	26600	1400	25200	-150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 150 MW from Column 'F'.
55	Outage of one 765/400 kV, 1500 MVA ICT at Vindhyachal	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
56	Outage of one 765/400 kV, 1500 MVA ICT at Satna	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
57	Outage of one 765/400 kV, 1500 MVA ICT at Varanasi	No constraint	No constraint	18750	8000	26750	1400	25350	0	No Curtailment
58	Outage of one 765/400 kV, 1500 MVA ICT at Agra	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18600	7950	26550	1400	25150	-200	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 200 MW from Column 'F'.
59	Outage of one 765/400 kV, 1000 MVA ICT at Orai^	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18450	7900	26350	1400	24950	-400	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 300 MW from Column 'F'.
60	Outage of one circuit of 765KV-SATNA-VINDHYACHAL(PS)-D/C	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18250	7750	26000	1400	24600	-750	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 900 MW from Column 'F'.
61	Outage of one 765/400 kV, 1500 MVA ICT at Phagi*	Outage of 765 kV Vindhyachal-Varanasi S/C	High loading of 765 kV Vindhyachal-Varanasi other ckt	18650	7950	26600	1400	25200	-150	N-1 of 765/400 kV, 1000 MVA Satna ICT with increment of 100 MW from Column 'F'.

Note: a) Updated All India Case with LGBR of September 2021 is considered for load flow studies

b) Generation at Paricha TPS-550 MW, Obra-450 MW, Lalitpur TPS-1500 MW & Bara TPS-1500 MW are considered in the vicinity of limiting constraint.

	<p>c) HVDC Power order taken in base case are as under:-</p> <p>Champa - Kurukshetra three pole - 5000 MW (1250 MW each pole) Mundra - Mahendragarh bipole - 2000 MW (1000 MW each pole) Rihand - Dadri bipole - 1500 MW (750 MW each pole) Vindhyachal HVDC - Blocked</p> <p>Agra - BNC - Blocked</p> <p>APD - Agra - 1000 MW (towards NR)</p>
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Ready Reckoner for credible contingencies in WR-NR corridor

Sensitivity of Important ICTs		
Name of the Element	Sensitivity (%) On other ICT	Safe Limit* on one ICT when both ICTs are in operation
765/400 kV 1500MVA Agra single ICT	41.65	1058
765/400 kV 1500MVA Phagi single ICT	45.12	1034
765/400 kV 1000MVA Orai single ICT	58.25	632
765/400 kV 1500MVA Varanasi single ICT	54.79	969
765/400 kV 1000MVA Satna single ICT	49.92	667
765/400 kV 1500MVA Vindhyachal single ICT	31.71	1139

Sensitivity of increase in power flow of HVDCs on Important Elements of WR-NR corridor							
Name of the Element	HVDC Champa- Kurukshetra	HVDC Mundra- Mahendergarh	HVDC Vindhyachal (WR to NR)	HVDC Agra- BNC (BNC to Agra)	HVDC APD- Agra (APD to Agra)	HVDC Rihand- Dadri	HVDC Ballia- Bhiwadi
765 kV Vindhyachal- Varanasi S/C	-5.6	-3.9	-14.4	4.8	5.1	5.2	8.2
765 kV Gwalior-Phagi S/C	-5.8	-0.7	-1.6	-2.2	-2.2	-2.6	-5.2
765 kV Phagi-Ajmer S/C	0.6	8.1	1.2	0.6	0.5	-0.2	-0.2
765 kV Phagi-Bhiwani S/C	-5.8	-8.0	-2.4	-0.2	-0.2	-2.2	-1.4
765 kV Agra-Jhatikara S/C	-7.0	-4.9	-1.2	1.6	1.6	-4.4	-4.8
765 kV Gwalior-Agra S/C	-9.6	-8.2	-5.6	-9.4	-9.1	-1.0	-2.6
765 kV Aligarh-G.Noida S/C	-9.7	-4.1	-6.8	-2.6	-2.4	-13.2	-0.6
765 kV Agra-Aligarh S/C	-5.7	-4.6	-2.0	5.6	5.7	-5.6	-2.4
765 kV Aligarh-Jhatikara S/C	-7.0	-4.4	0.4	-1.8	-1.8	-2.8	-6.0
765 kV Orai-Aligarh S/C	-7.0	-4.0	-4.4	-3.4	-3.2	-3.0	-3.2
765 kV Orai-Jabalpur S/C	-8.6	-3.8	-6.0	-5.2	-3.6	-1.0	-2.2
765 kV Orai-Gwalior S/C	-1.9	0.7	0.8	-4.0	-3.9	-1.0	-2.6
765 kV Banaskantha-Chittorgarh S/C	-3.7	-14.9	-2.0	-1.8	-1.7	-0.8	-0.8
765 kV Satna-Gwalior S/C	-3.7	-1.8	-4.4	-4.2	-4.1	-1.8	-3.4
765 kV Satna-Orai S/C	-3.8	-2.6	-5.6	-3.4	-3.3	-1.8	-3.2
765/400 kV 1500MVA Agra single ICT	-4.0	-3.2	-2.0	-20.0	-19.7	-1.8	-5.4
765/400 kV 1500MVA Phagi single ICT	-1.2	-2.2	-0.4	-2.6	-2.5	-0.4	-3.4
765/400 kV 1000MVA Orai single ICT	-2.3	-1.5	-4.8	0.0	0.0	1.6	0.8
765/400 kV 1500MVA Varanasi single ICT	-1.3	-0.8	-8.0	2.0	2.1	6.0	1.4
765/400 kV 1500MVA Vindhyachal single ICT	0.0	0.1	0.0	0.0	0.0	0.0	0.4
765/400 kV 1000MVA Satna single ICT	-2.2	-1.3	-15.2	-0.6	-0.4	0.6	1.2

Sensitivity of increasing power flow of HVDC Vindhyachal & Rihand-Dadri on 400KV lines in Anpara complex		
Name of the Element	HVDC Vindhyachal (WR to NR)	HVDC Rihand-Dadri
400 kV Singrauli-Anpara A&B S/C	44.8	-40
400 kV Singrauli-Allahabad S/C	9.2	-7.6
400 kV Singrauli-Fatehpur S/C	8.8	-8.2
400 kV Singrauli-Lucknow(UP) S/C	5.6	-5.6
400 kV Anpara D-Anpara A&B S/C	1.6	-4.2
400 kV Anpara C-Anpara A&B S/C	6.2	-3.6
400 kV Anpara A&B - Sarnath S/C	6.4	-5
400 kV Anpara A&B - Mau S/C	5.6	-4.6
400 kV Anpara A&B - Obra S/C	8.8	-9
400 kV Obra - Sultanpur S/C	3.2	-3.2
400 kV Obra - REWAROAD S/C	3.6	-3.4

Sensitivity on 400 kV Bhinmal-Zerda S/C & 400 kV Kankroli-Zerda S/C					
Name of the Element	Sensitivity of increase in power flow of HVDC	Sensitivity of Increase in Wind generation at Akal(Rajasthan)	Sensitivity of Increase in Wind generation at Ramgarh(Rajasthan)	Sensitivity of 400kV Bhinmal-Zerda S/C on	Sensitivity of 400kV Kankaroli-Zerda S/C on
400 kV Bhinmal-Zerda S/C	-8.24	-15.33	-12.20	23.22	26.87
400 kV Kankroli-Zerda S/C	-6.20	-4.71	-4.30		