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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

No. NRPC/SE (O)/Prot. Audit./11/ Dated: 19.07.2011

-As per List-

Sub: First meeting of Coordination committee for third party protection audit-reg.

The first meeting of the coordination committee for third party protection audit shall be held at 11:00 am on 25th July, 2011 at NRPC, New Delhi. Scope of work and list of proposed critical sub-station/switchyard of generating stations of northern grid are enclosed at Annexure-II and Annexure-II. Members are requested to forward elements of their system that they consider critical in addition to above and also forward their comment on scope of work. Meeting would be focused to expeditiously carryout the comprehensive third party protection audit.

Kindly make it convenient to attend the meeting.

-Sd-
Ajay Talegaonkar
SE (O) and Member Convener

list of members

1. Sh. B.P.Gantayat, GM, POWERGRID NR-1, Fax No 011-26560112
2. Sh. H.S. Jadaun, NAPS, NPCIL, Fax No. 05734-222115
3. Ms. Kiran Sainin, DGM(SLDC), DTL, Fax No. 011-23221069
4. Sh. M.K.Singhal, EE, RVPNL, Fax No. 0141-2296625
5. Sh. A.M.Kamili, SE SO&C, PDD J&K, Fax No. 0194-2491338
6. Sh. Somesh Kumar Bhattacharya, SE, UPPTCL, Fax No 0512-2261069
7. Sh. Rakesh K. Sharma, Dy.C.E., PSTCL, Fax No. 0161-2455704
8. Sh. N.K.Bharadwaj, Sr. Manager(E), NHPC, Fax No. 0129-2272413/1419
9. Sh. Rajiv Porwal, CM, NRLDC, Fax No. 011-26852747
10. Sh. P.P.Francis, AGM, NTPC, Fax No. 0 11- 24361018
11. Sh. I.B.Srivastav, Dir., BBMB, Fax No. 0172-2652054
12. Sh. Sandeep Yadav, XEN/M&P, HVPNL, Fax No. 0172-2560622

13. DGM (SO) SLDC, Rishikesh Fax No 0135-2451160/2763570 with a request to nominate an officer for the group and advise him to participate in the meeting(Pl. refer to our earlier correspondence of even no dated 30.05.2011)

14. AGM (C&SO), SJVNL, Fax No. 0177 2673283 with a request to nominate an officer for the group and advise him to participate in the meeting(Pl. refer to our earlier correspondence of even no dated 30.05.2011)

15. SE(PR&ALDC), HPSEB Ltd. Fax No. 0177-2838170/2837043 with a request to nominate an officer for the group and advise him to participate in the meeting(Pl. refer to our earlier correspondence of even no dated 30.05.2011)

Annexure-I

Scope of Work

1. Review of the implemented protection schemes/philosophy & settings in the 400kV & 220kV feeders of Delhi ring which includes protection of Generator, Transmission line, Transformer, Reactor, Circuit Breaker, Bus Bar, Series Compensation Device. CBIP Publication no. 274 (revised) viz. 'Manual on Protection of Generators, Generator Transformers and 220 kV and 400 kV networks' on may be used as a standard for the above purpose along with NRPC recommended settings. Review of settings for relay loadability (load encroachment) as per NERC criteria PRC-023-1. The Protection review should be done keeping in view the following :

   1.1. Availability of all recommended protection philosophy as per CBIP Manual 274.
   1.2. Relay settings as per NRPC recommendations.
   1.3. Local deviations in implementation of schemes, relay settings, coordination as per above standards & reasons thereof.
   1.4. Consultants recommendations based on studies/ international experience.

2. To carry out relay coordination studies for the different protection schemes.

3. To check for the adequacy/healthiness of the Primary & Backup protection scheme & settings. Recommend corrective action for any additional protection and disabling any unwanted setting/ protection.

4. Checking healthiness/ adequacy of 220/110/50V DC System available at Substations for protection/PLCC and suggest corrective measures in case of any problem.

5. Review of availability/ healthiness of communication links like PLCC, optical fiber used for protection.

6. Review of availability/ Healthiness of recording instruments - Disturbance Recorder, Event Logger.

7. Review of availability/ Healthiness of Time synchronization unit.

8. Review of test reports for assessing the healthiness of Circuit Breaker - Trip and close coil healthiness, Breaker close & open timings, SF6 & operating media pressure settings for alarm, Auto reclose lock out and Breaker operational lockout & Pole discrepancy operation.

9. Review the protection testing procedures benchmarked against best practices in the knowledge of the consultant being adopted around the world.

10. Review of Field testing on all protection relays (including end to end testing), PLCC along with simulation of Disturbance Recorder & Event Logger signals individually for 02 No. 400kV & 02 No. 220kV feeders. The testing will be carried out in the presence of Testing & Commissioning personnel of respective Substation.

11. Field inspection of existing protection devices for obsolescence of technology, suitability, healthiness (based on test reports).

12. The test reports available at site may be compared against POWERGRID norms or other best norms in the knowledge of the consultant.

13. Prepare a directory of the protection system.

14. Presenting the finding of the study and conducting 2 day tutorial/ workshop to the concerned engineers.

15. Prepare a report on the protection review which shall include the details of recommended protection philosophy, setting calculation procedures for different protections, suitable solutions for rectification of identified problems. A report on the progress of work is to be submitted every month to expert group.

Details of 400kV & 220 KV Substations and Generating Stations and its associated network

Annexure-II

Table 1: 400kV Substation & Generating Station and its associated network

Area	SUBSTATION								GENERATING STATION									
	State/ Jointly owned				Central				State/ Jointly owned					Central				
			No. Of Lines				No. Of Lines					No. Of Lines					No. Of Lines	
	Station	Trafo	400 kV	220 kV	Station	Trafo	400 kV	220 kV	Station	Units	Trafo	400 kV	220 kV	Station	Units	Trafo	400 kV	220 kV
Western UP	AGRA(UP)	3	4	5	AGRA(PG)		13							DADRI	1		8	
	MURADNAGAR	3	5	8	KANPUR(PG)	2	9	9										
	PANKI	2	5	7	MAINPURI(PG)	2	4	4										
					MEERUT(PG)	3	5	5										
					MANDOLA	4	8	8										
Total	**3**	**8**	**14**	**20**	**5**	**11**	**39**	**26**						**1**	**1**	**0**	**8**	
Rest of U.P	MUZAFFARNAGAR	2	5	2	ALLHABAD	2	10	3	ANPARA	5	3	6		AURIAYA	6	2	4	4
	MORADABAD	2	4	3	BALIA		8		OBRA	5		3	5	RIHAND	4		4	
	BAREILY (UP)	2	4	6	BAREILY (PG)		9							SINGRAULI	7		9	
	LUCKNOW(UP)	2	4	5	GORAKHPUR(PG)	2	6	2										
	UNNAO	2	8	4	LUCKNOW(PG)	1	10	2										
	SULTANPUR	2	3	4	VINDHYACHAL		3											
	GORAKHPUR(UP)	1	3	3	Greater Noida	3	2	2										
	AZAMGARH	2	4	2														
	SARNATH	2	5	3														
	MAU	2	4															
Total	**10**	**19**	**44**	**32**	**7**	**8**	**48**	**9**	**2**	**10**	**3**	**9**	**5**	**3**	**17**	**2**	**17**	**4**
Total U.P	**13**	**27**	**58**	**52**	**12**	**19**	**87**	**35**	**2**	**10**	**3**	**9**	**5**	**4**	**18**	**2**	**25**	**4**
HARYANA	KIRORI	3	2	6	ABDULLAPUR(PG)	3	4	8	KHEDAR	2	4							
	BHIWANI	2	3	6	BAHADURGARH	2	2	2										
	DEHAR	1	2	3	BALLABGARH(PG)	4	9	12										
	PANIPAT	2	3	11	FATEHABAD (PG)	2	4	4										
					HISAR (PG)	3	7	6										
					KAITHAL(PG)	2	2	4										
					GURGAON	1	2	2										
					SONIPAT													
Total	**4**	**8**	**10**	**26**	**8**	**17**	**30**	**38**	**1**	**2**	**4**							
PUNJAB					AMRITSAR	2	1	4										
					JALLANDHAR(PG)	2	6	7										
					LUDHIANA (PG)	3	2	2										
					MALERKOTLA(PG)	2	3	6										
					MOGA(PG)	4	8	8										
					PATIALA (PG)	2	3	3										
Total	0				**6**	**15**	**23**	**30**										

RAJASTAN	HEERPURA	4	4	11	BASSI	2	7	4	SURATGARH	6	2	3	4	RAPP C	2		3	
	MERTA	1	5	3	BHIWADI	2	8	4										
	JODHPUR	2	3	5	KOTA(PG)		3											
	RATANGARH	3	3	10	KANKROLI	3	6	4										
					BHINMAL	1	2	1										
Total	**4**	**10**	**15**	**29**	**5**	**8**	**26**	**13**	**1**	**6**	**2**	**3**	**4**	**1**	**2**		**3**	
HIMACHAL PRADESH					NALLAGARH(PG)	2	6	4						JHAKRI	6		6	
					BASPA		2											
					CHAMERA-1		3											
					CHAMERA-2		2											
Total	**0**				**4**	**2**	**13**	**4**						**1**	**6**		**6**	
UTTARAKHAND	RISHIKESH	2	2	4	ROORKEE(PG)	1	2							TEHRI	4		2	
	KASHIPUR	3	2	2	KOTESHWAR(PG)		2											
	VISHNUPRAYAG		2															
Total	**3**	**5**	**6**	**6**	**2**	**1**	**4**							**1**	**4**		**2**	
JUMMU & KASHMIR					KISHENPUR	2	8	12										
					WAGOORA(PG)	4	4	4										
					DULHASTI		1											
					BAGLIHAR		2											
					URI		2											
Total	**0**				**5**	**6**	**17**	**16**										
GRAND TOTAL	**24**	**50**	**89**	**113**	**42**	**66**	**187**	**136**	**4**	**18**	**9**	**12**	**9**	**5**	**24**	**2**	**30**	**4**

Table 2: 220kV Substations & Generating Stations and its associated network

Area	SUBSTATION						GENERATING STATION							
	State			Central			State				Central			
													No. Of Lines	
	Station	Trafo	220 kV	Station	Trafo	220 kV	Station	Units	Trafo	220 kV	Station	Units	Trafo	220 kV
U.P	HARDUAGANJ	2	6								NAPPS	2		5
	NARA	2	3								DADRI	10		
	CBGANJ	2	6								OBRA	3		
	FATEHPUR	2	8								UNCHAHAR	5		9
	CHINHAT	1	4											
Total	**5**	**9**	**27**								**4**	**20**		**14**
HARYANA	CHARHI DADRI	2	12				PANIPAT	8						
	SAMAYPUR		12											
Total	**2**	**2**	**24**				**1**	**8**						
PUNJAB	GANGUWAL	2	15				ROPAR	6	2	10				
	JAMALPUR	6	10											
	SARNA	1	14											
	GOBIDGARH 1	3	10											
	MOHALI	3	8											
Total	**5**	**15**	**57**				**1**	**6**	**2**	**10**				
RAJASTAN	KOTA SAKATPURA	2	10				RAPP A	2		4				
	BHILWARA	2	9				RAPP B	2		7				
	KHETRI	1	8				KOTA	7		10				
Total	**3**	**5**	**27**				**3**	**11**	**0**	**21**				
HIMACHAL PRADESH	KUNIHAR	4	4											
Total	**1**	**4**	**4**											
UTTARAKHAND	KHODRI	1	7	SITARGANJ	1	2								
				PITHORAGARH		2								
Total	**1**	**1**	**7**	**2**	**1**	**4**								
JUMMU & KASHMIR	PAMPORE	3	4											
	GLADNI(JAMMU)	1	3											
Total	**2**	**4**	**7**											
GRAND TOTAL	**19**	**40**	**153**	**2**	**1**	**4**	**5**	**25**	**2**	**31**	**4**	**20**	**0**	**14**