



सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

No. उ.क्षे.वि.स./प्रचालन/107/01/2020/1822-1860

दिनांक: 21.02.2020

सेवा में : संरक्षण उप-समिति के सदस्य (सूची के अनुसार) ।

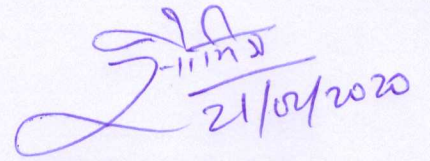
To: Members of Protection Sub-Committee (As per List)

विषय: संरक्षण उप-समिति की 40 वीं बैठक की कार्यसूची ।

Subject: Agenda for 40th Protection Sub-Committee Meeting.

संरक्षण उप-समिति की 40^{वीं} बैठक का आयोजन दिनांक 02.03.2020 को 10:00 बजे से उ.क्षे.वि.स. सचिवालय, नई दिल्ली में की जाएगी । उक्त बैठक की कार्यसूची उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट (<http://www.nrpc.gov.in>) पर उपलब्ध है ।

The 40th meeting of Protection Sub-Committee is scheduled to be held on **02.03.2020 at 10:00 Hrs at NRPC Secretariat, New Delhi**. The agenda for the meeting is available on NRPC website and same can be downloaded from <http://www.nrpc.gov.in> .



(सौमित्र मजूमदार)

अधीक्षण अभियंता (प्रचालन)

List of Members of PSC

S.No.	Designation	Organization	Fax No.
1	Director (P&C)	BBMB	0172-2652054
2	General Manager (SLDC)	DTL	011-23236462
3	GM (O&M)	Delhi Transco Limited	011-23236462
4	GM (T)	Common Services IPGCL	23370247
5	Chief Engineer (TS)	HVPNL	0172-2591244
6	SE (M&P)	HVPNL	0172-2540014
7	SE (SO & SLDC)	HVPNL	0172-2560622
8	SE (SLDC)	PTCUL	0135-2763570
9	SE(T&C)	PTCUL	0135-2451826
10	Chief Engineer (SLDC)	UPPTCL	0522-2287880
11	SE(Tech)	HPGCL	0172-5022436
12	SE(O&M-VI)	HPGCL	0180-2566768
13	Chief Engineer (Transmission)	HPSEB	01972-223435
14	SE (PR& ALDC)	HPSEB	0177-2837143
15	Chief Engineer (Comml. & Survey Wing)	PDD	0191-2474233
16	Chief Engineer (SLDC)	PSTCL	0175-2365340
17	Chief Engineer (P&M)	PSTCL	0161-2741280
18	CE (M&P)	RRVNL	0141-2291891
19	SE (Electrical)	RRVUNL	01509-245299
20	Chief Engineer (LD)	RRVNL	0141-2740920
21	SE (SO&LD)	RRVNL	0141-2740920
22	Superintending Engineer (T&C)	UPPCL	0121-2666062
23	Chief Engineer, (L-2)	UPRVUNL	0522-2287822
24	DGM (T&C)	PTCUL	0135-2760331
25	General Manager (O&M)	NHPC	0129-2272413
26	GM (O&M) NR – I	PGCIL	011-26601079
27	GM (O&M), NR-II	PGCIL	01951-237186
28	Chief Manager (TS)	N.R.L.D.C	011-26852747
29	GM(OS-NR)	NTPC	0522-2305848
30	GM (OS)	NTPC Ltd	0120-2410082
31	DGM (Maintenance)	SJVNL	0177-2673283
32	DGM (O&M)	THDC India Ltd	01376-236305
33	Director (GM division)	CEA	011-26109750
34	General Manager	APCLP	01251-266326
35	Director	JPPVL	0120-4516201
36	Assistant Vice President	BRPL	39996055
37	GM (Production)	Jhajjar Power Ltd	01251-270155
38	GM(P&M)	APL	7925557176
39	Sh. Umesh Gupta, AsVP	BRPL	011-26419833
40	Director (NPC)	CEA	
41	1.Maintenance Superintendent	NAPS, NPCIL	05734-222167
	2.Maintenance Superintendent	RAPS, NPCIL	01475-242060

Agenda for
40th Meeting of Protection Sub-committee of
Northern Regional Power Committee

Time of meeting : 10.00 Hrs.
Date of meeting : 02.03.2020
Venue : NRPC Secretariat, New Delhi

A.1. Confirmation of minutes of 39th meeting of protection sub-committee

Minutes of 39th meeting of Protection Sub-committee were issued vide letter dated 30.01.2020. The Minutes are available on NRPC's website at <http://www.nrpc.gov.in>. No comment has been received.

Sub-Committee may confirm the Minutes.

A.2. Implementation of Recommendations of Task Force

As a follow up of one of the recommendations of Enquiry Committee headed by the Chairperson, CEA on grid disturbances that took place on 30th and 31st July 2012, Ministry of Power had constituted a 'Task Force on Power System Analysis under Contingencies' in December 2012. The Task Force had submitted its report in August 2013. In a meeting taken by Union Power Secretary on 11.03.2014, it was decided that the report be given wide circulation and its recommendations be implemented in a time bound manner. Some of the issues arising out of recommendations of the Task Force were as under:

A.2.1. Database of protection settings

In 39th PSC meeting held on 18.12.2019: Members were informed that protection setting database format is available at <https://nrpc.gov.in/data-formats>. In the meeting, it was decided to start data collection in a phase manner by initially collecting protection setting data for 400 kV & above lines as well as ICTs. States and concerned transmission utilities were requested to submit 400kV & above data to NRPC Sectt. in the prescribed format by 10th January 2019.

Status of Protection setting data submitted is as followed:

Sr. No.	Utilities who have submitted the data	Date of data submission
1.	BBMB	13.01.2020
2.	NAPS	18.12.2019
3.	PPCL – CCGT Bawana	06.06.2020

4.	UPPTCL (Central Zone 400kV)	23.09.2019
5.	UPPTCL (South Central 400kV Orai)	13.02.2020

It was also decided that a Nodal officer will be nominated from each utility/state who will co-ordinate for submitting new as well as updating the settings. The nomination of the nodal officer was to be submitted by 25th December 2019.

Except BBMB no utility has submitted nomination of nodal officer.

Sr. No.	Name of the utility	Name and no. of the Nodal officer
1.	BBMB	Er. Vijay Singh Mob No. 9466120870

It was also decided that a visit to NTAMC, Manesar may be scheduled in the 1st week of January 2020 by a team of NRPC, NRLDC and POWERGRID to study the available infrastructure with POWERGRID to monitor and access protection relays remotely.

Accordingly, a team of NRPC, NRLDC and POWERGRID visited NTAMC, Manesar to understand applicability of infrastructure with POWERGRID to monitor and access protection relays remotely. It was observed that POWERGRID has 2 applications namely RAS (Remote Accessibility system) and AFAS (Automatic Fault Analysis system). DR/EL of the substations are remotely fetched by RAS which is in addition to Protection setting database provide input to AFAS who analyses the tripping and generates a report. However, Protection settings of relays were not being accessed remotely and same are updated as informed by site personnel. The protection settings are being submitted in excel format which is already shared by POWERGRID.

Members may deliberate regarding submission of the data.

A.3. Final report of the Committee to suggest measures for bringing improvement in the field of Power System Protection among the utilities in Northern Region

The report, submitted by the duly constituted committee, was accepted for implementation in the 34th TCC/38th NRPC meeting held on 24th/25th October, 2016. It was also agreed in the NRPC meeting that each utility would immediately start working to develop training module for Basic Training on Protection System for Sub-Station Engineers (Level-1) and start training programs within 6 months. The issue was also discussed in 32nd PSC meeting wherein utilities were requested to organize Level-1 training and submit the details.

BBMB, POWERGRID NR-I and PITCUL have been conducting training on Protection System (Level-I) at regular intervals. Punjab informed that trainings

were being conducted for operator level personnel in Punjab and its detail would be shared. Representative of Haryana, UP and POWERGRID also informed that Level-1 training programmes are being conducted regularly whose details would be shared. *DTL, RRVPNL, BBMB have submitted the details of Level-1 training.*

Other utilities may kindly submit details of level – 1 training comprising of points such as training module, periodicity of training and number of participants covered in the training at the earliest.

In the 39th PSC meeting held on 18.12.2019: - Members were apprised that 2nd batch of 50 participants for each Level-2 and Level-3 Power System Protection training (classroom as well as hands-on) is being planned from 3rd week of January 2020 at PAL, Manesar as deliberated and approved in 44th TCC/47th NRPC meetings held on 10th /11th December 2019. It was also decided that entire training program will be organized in four batches (2 batches each for Level-2 and Level-3 training) with sufficient time gap and Level-3 training will be conducted after completion of Level-2 training of two batches. In the meeting, it was decided that maximum 02 Nos. of nominations from each utility/organization may be submitted to NRPC Sectt. (email: seo-nrpc@nic.in), latest by 30th December, 2019

The 1st batch of Level – 2 training program has been successfully held from 03rd February, 2020 to 07th February, 2020 at PAL, Manesar for 26 participants. The 2nd batch of Level – 2 training program is being held from 24th February to 28th February, 2020.

The 2 batches of Level – 3 training program are proposed to be held in the late March/ early April, 2020.

Members may take note of the information.

A.4. Follow up action on outstanding issues from previous meetings

A.4.1. Non- availability/defective PLCC link of STU Lines terminated at POWERGRID (NR-2) substations

22nd PSC meeting on 22.07.2013 - POWERGRID had submitted a list of its NR-2 sub-station where PLCC was non-functional at other side.

39th PSC meeting on 18.12.2019 – Status couldn't be updated as there was no representation from PSTCL in the meeting. Status of PLCC work in these sub-stations, as updated in the previous meeting is as under:

Sl. No.	Name of Substation	Name of Transmission Line	Availability of PLCC	Status
PLCC issues with PSTCL				
1	Amritsar	220 kV Verpal –I	Not installed	Representative of PSTCL informed that panels installed were

				being replaced and end to end testing would be completed by the end of the month.
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A.4.2. Islanding scheme for Rajasthan and Punjab

A.6.3.1. Islanding scheme for Rajasthan

36th PSC meeting held on 19.09.2018 - Representative of RVPNL stated that procurement has been completed and scheme would be implemented by Dec 2018. It was also mentioned that Mahi HPS has been permanently excluded from the scheme.

37th PSC meeting held on 21.01.2019 - Representative of RVPNL informed that procurement is under process and expected to be completed by 30.06.2019. MS, NRPC requested RRVPN to submit the complete islanding scheme for Rajasthan at the earliest.

38th PSC meeting held on 01.08.2019 and 02.08.2019:- Representative of Rajasthan informed that they are implementing the islanding scheme and status as on 31.07.2019 has been shared. Rajasthan was requested to share the scheme under implementation with NRPC/NRLDC.

39th PSC meeting on 18.12.2019 – Status couldn't be updated as there was no representation from RRVPNL in the meeting.

RVPNL may update the status.

A.6.3.2. Islanding scheme for Punjab

34th PSC meeting held on 04.08.2017 - PSTCL was given approval to implement islanding scheme for only GHTP control area citing the plans of PSPCL to shut the GNDTP Bathinda plant by the year end. They were further requested to complete the same by 30.09.2017 and to submit the details of actual implemented schemes to NRLDC and NRPC Secretariat.

35th PSC meeting held on 20.06.2018 - Representative of PSTCL stated that consent of PSPCL was received a one week before for the execution of Islanding scheme on only GHTP control area and it would be executed by 30.09.2018.

36th PSC meeting held on 19.09.2018 - Representative of PSTCL stated that data was awaited from the PSPCL. He stated that PSPCL was requested to submit the data of the units which would be kept ON during peak/non-peak period. They have submitted the data stating that all the units would be kept ON but in actual scenario it has been observed that units for Lehra-Mohabbat TPS were off during winter and ran up to 50% in paddy seasons. He told that scheme would be implemented in a month after consultation with PSPCL.

37th PSC meeting on 21.01.2019 - Representative of PSTCL informed

that installation and commissioning is under progress and it will be completed by **31st March 2019** and Bathinda was dropped from the scheme. He informed that currently, scheme for Lehra-Mohabbat is being implemented. PSTCL was requested to share the islanding scheme for Lehra-Mohabbat at the earliest.

38th PSC meeting held on 01.08.2019 and 02.08.2019:- Representative of Punjab informed that scheme has been installed and commissioned. It was requested to do a mock testing of the scheme and a report along with the scheme to be shared with NRPC/NRLDC.

39th PSC meeting on 18.12.2019 – Status couldn't be updated as there was no representation from PSTCL in the meeting.

PSTCL may update the status.

Haryana, UP and other states are also requested to update the status of islanding schemes in their respective states.

A.4.3. Progress of rectification of deficiencies observed / improvements suggested in Basic Protection Audit

The status of rectification of deficiencies observed in Basic Protection Audit carried out by POWERGRID & CPRI is to be submitted on monthly basis. The updated status in regard to expected completion time of rectification of protection related deficiencies as informed by utilities is enclosed as **Annexure-I**.

Utilities are requested to update the latest status.

A.4.4. Third-Party Protection Audit by the Protection Experts for intra-state system / balance system not covered in Basic Protection Audit.

In the 34th PSC meeting, stress was given over non-rectification of deficiencies found in the audit by most of the utilities. Utilities which have not submitted the action plan were requested to submit the same at the earliest. Status of actions taken on Third Party Protection Audit is enclosed as **Annexure-II**.

All the utilities are requested to submit the updated status and ensure expediting the process for rectification of discrepancies found in the audit.

A.4.5. Status of Bus Bar protection

As per the report of Basic Protection Audit carried out by CPRI and POWERGRID in 2012, non-availability/non-functionality of Bus Bar Protection at many of the S/S was one of the major observations.

34th PSC meeting held on 04.08.2017 - UPPTCL informed that

alternative schemes had been installed in almost all the substations where Bus bar protection was not installed. PSC advised to remove the alternate arrangement wherever Bus bar protection has been installed. RVPNL intimated that contract was under finalization stage and procurement would start after the same.

35th PSC meeting held on 20.06.2018 - Representative of UPPTCL informed that alternated arrangements were removed in all the substations wherever bus bar protection was installed.

37th PSC meeting on 21st January, 2019 - Representative of Rajasthan informed that bus bar protection work was completed in 56 out of 74 locations and installation at other locations is in process.

Status of Bus bar protection for NR is enclosed as **Annexure-III**.

Further, in 38th PSC meeting held on 01.08.2019 and 02.08.2019 Constituents were requested to provide the details of bus bar protection in the format (Annexure-5 of Additional agenda of 38th PSC meeting) and expedite the commissioning of Bus Bar protection at 132kV & above level.

The status has been received from BBMB, NPCIL, THDC – Koteshwar, UPPTCL, PSTCL, NJHPS etc.

Other utilities may update the status of Bus-bar protection and the status of interim measures taken at their end.

A.4.6. CERC order on Petition No. 9/SM/2014 and 10/SM/2014

CERC in its order dated 14.06.2016 in Petition no. 9/SM/2014 for investigation of tower collapse and load crash in Northern Region on 30.5.2014 and Petition no. 10/SM/2014 for investigation of Line Outage due to Tower Collapse in Northern Region during April 2015 to June 2015 directed RPC Secretariat to examine the cases of delayed clearance of faults on transmission system during last two years and to submit an analysis report within six months from the date of issue of the order. The status of the delayed clearance of the fault from 01.04.2014 to 01.06.2015 was enclosed as Annex-VI of the agenda of 32nd PSC meeting. In the agenda following action was proposed:

- Utilities which had not submitted the detailed report along with the remedial measures taken/being taken were requested to submit the same.
- Utilities whosoever had submitted the report along with the measures to avoid the recurrences of these types of tripping were requested to submit the status of action suggested in report.

In the 33rd PSC expressed concern over non-submission of data. Utilities were requested to furnish the information by 07.03.2017, so that the report may be submitted to CERC. Subsequently, vide letter dated 10.07.2017, members of PSC were asked to submit the action taken on the recommendation of the discussions held in last four PSC meetings (30th,

31st, 32nd and 33rd) by 25.07.2017. The issue was again flagged in 34th PSC meeting in which all the members agreed to submit the details as required.

The complete list of all the events of delayed clearance of faults from 01.04.2014 to 31.03.2016 was again circulated. Utilities are being regularly followed up in 36th, 37th and 38th PSC meetings for early submission of the data. The status of details received is as given below:

Description	Information submitted by
Details regarding List events of delayed clearance of faults from 01.04.2014 to 31.03.2016	UPPTCL, NJHPS, POWERGRID, NHPC, DTL, RRVPNL, PPCL

Utilities may update the status.

A.5. Tripping Events:

Following are the list of tripping events which shall be discussed during 40th PSC meeting:

S. No.	Name of Elements (Tripped/Manually opened)	Presentation by	Outage		Generation Loss (MW)	Load Loss (MW)	Category as per CEA Grid Standards	Energy Unserved (in MU)
			Date	Time				
1	1) 400 kv koteswar(th)-koteswar(pg) (pg) ckt-2 2) 400kv bus 2 at koteswar(th) 3) 400kv bus 1 at koteswar(th) 4) 100 mw koteswar hps - unit 2 5) 400 kv koteswar(th)-koteswar(pg) (pg) ckt-1 6) 125 mvar bus reactor no 1 at 400kv koteswar(th)	THDC	1-Dec-19	14:58	90	0	GD-1	0.00
2	1) 125 mvar bus reactor no 1 at 400kv manesar(pg) 2) 400 kv gurgaon-manesar (pg) ckt-1 3) 220 kv manesar(pg)-badshahpur(hv) (hvpnl) ckt-1 4) 220 kv manesar(pg)-mau(hv) (hvpnl) ckt-2 5) 400 kv neemrana-manesar (pg) ckt-1 6) 125 mvar bus reactor no 2 at 400kv manesar(pg) 7) 220 kv manesar(pg)-mau(hv) (hvpnl) ckt-1 8) 400 kv neemrana-manesar (pg) ckt-2 9) 400 kv gurgaon-manesar	POWERGRID & HARYANA	5-Dec-19	12:34	0	200	GD-1	0.07

	(pg) ckt-2 10) 400/220 kv 500 mva ict 1 at manesar(pg) 11) 400/220 kv 500 mva ict 2 at manesar(pg) 12) 220 kv manesar(pg)-badshahpur(hv) (hvpnl) ckt-2 13) 220 kv manesar(pg)-mau(hv) (hvpnl) ckt-2 14) 220 kv manesar(pg)-badshahpur(hv) (hvpnl) ckt-1 15) 220 kv manesar(pg)-mau(hv) (hvpnl) ckt-1							
3	1) 400kv bus 1 at manesar(pg) 2) 400 kv gurgaon-manesar (pg) ckt-1 3) 125 mvar bus reactor no 2 at 400kv manesar(pg) 4) 400/220 kv 500 mva ict 2 at manesar(pg) 5) 400KV Neemrana-Manesar (PG) Ckt-1	POWERGRID	6-Dec-19	17:44	0	0	GI-2	0.00
4	1) 400kv bus 1 at chhabra(rvun) 2) 400 kv chhabra-chhabra sctps (rs) ckt-1 3) 660 mw chhabra sctps - unit 5 4) 660 mw chhabra sctps - unit 6	Rajasthan	17-Dec-19	18:14	625	0	GD-1	0.00
5	1) 400/220 kv 315 mva ict 3 at sultanpur(up) 2) 400 kv sultanpur(up)-lucknow_1(pg) (up) ckt-1 3) 400 kv tanda(nt)-sultanpur(up) (up) ckt-1 4) 400kv bus 1 at sultanpur(up) 5) 400/220 kv 240 mva ict 2 at sultanpur(up) 6) 400KV Obra_B-Sultanpur (UP) Ckt-1 7) 400/220 kV 315 MVA ICT 1 at Sultanpur(UP)	UP	22-Dec-19	02:54	0	40	GD-1	0.06
6	1) 660 MW Chhabra SCTPS - UNIT 6 2) 660 MW Chhabra SCTPS - UNIT 5 3) 400 KV Anta(RS)-Kawai SCTPS(APR) (RS) Ckt-2	Rajasthan	29-Dec-19	07:53	780	0	GD-1	0.00
7	1) 800 KV HVDC Champa(PG)-Kurukshetra(PG) Pole-1 2) 800 KV HVDC Champa(PG)-Kurukshetra(PG) Pole-2 3) 800 KV HVDC Champa(PG)-Kurukshetra(PG) Pole-3	POWERGRID	30-Dec-19	10:26	0	0	GI-2	0.00

8	1) 400KV Bus 1 at Banda(UP) 2) 400 KV Banda-Orai (UP) Ckt-2 3) 400 KV Obra_B-Rewa Road (UP) Ckt-1 4) 400 KV Rewa Road-Masoli (UP) Ckt-1 5) 400 KV Rewa Road-Panki (UP) Ckt-1 6) 400 KV Banda-Rewa Road (UP) Ckt-1 7) 400/220 kV 315 MVA ICT 1 at Rewa Road(UP) 8) 400/220 kV 315 MVA ICT 2 at Rewa Road(UP) 9) 63 MVAR Bus Reactor No 1 at 400KV Banda(UP)	UPPTCL	11-Jan-20	02:38	0	0	GI-2	0.00
9	1) 400 KV Chamera_2(NH)-Chamera_1(NH) (PG) Ckt-12) 400 KV Chamera_2(NH)-Kishenpur(PG) (PG) Ckt-13) 220 KV Wagoora(PG)-Pampore(PDD) (PDD JK) Ckt-24) 220 KV Wagoora(PG)-Pampore(PDD) (PDD JK) Ckt-1	PDD JK, POWERGRID	13-Jan-20	13:21	0	300	GD-1	0.00
10	1) 400/220 kV 315 MVA ICT 2 at Malerkotla(PG) 2) 400/220 kV 500 MVA ICT 3 at Malerkotla(PG) 3) 400/220 kV 315 MVA ICT 1 at Malerkotla(PG) 4) 400 KV Ludhiana-Malerkotla (PG) Ckt-1 5) 400 KV Malerkotla-Patiala (PG) Ckt-1	POWERGRID & Punjab	28-Jan-20	19:27	0	250	GD-1	0.46

All the utilities are requested to submit DR/EL and other tripping related data to NRPC/NRLDC and bring the same in the 40th PSC meeting.

Utilities shall make presentation highlighting cause of the event, actions taken and remedial measure to be taken in future for avoidance of similar instances. It will be presented during PSC meeting by the representative of concerned utility.

Tripping other than to be discussed in 40th PSC meeting:

For better reliability of power system each and every multiple element tripping should be analysed properly and remedial measures to be taken by utilities. Total 29 multiple element tripping event reported by NRLDC to RPC and constituents for the month of December,2019 and January, 2020.

Preliminary reports of all these trippings are available at NRLDC website and already send to concerned utilities within 24hrs of the incident.

Among 29 events, around 10 events would be discussed in 40th PSC meeting. For rest events, utilities may kindly submit the details (DR/EL and detailed report

along with remedial measures) to NRLDC and NRPC at mail ID: nrldcso2@posoco.in, nrldcso2@gmail.com, seo-nrpc@nic.in and sep-nrpc@nic.in.

List of the all the multiple elements tripping event is available at NRPC website at following link:
http://164.100.60.165/meetings/PCC/pcc40/PCC40_Grid_Incident.xlsx

Member may kindly submit the details.

Further, Presentations to be discussed in 40th PSC meeting are available at <https://nrldc.in/presentation-for-40th-psc-meeting/>.

Members are requested to submit actions/remedial measures taken against the action points highlighted in presentation.

Status of pending rectification of defects observed during BPA

Sl. No.	Utility	No. of substations covered under BPA	Expected Completion	Remarks
1	UPPTCL	21	-	Representative of UPPTCL informed that in 220 kV stations, PLCC panels were being procured from CGL and all major deficiencies have been rectified.
2	UPRVUNL	4	-	<u>Obra 'A'</u> – including rectification of time synchronization & BBP, PLCC (to be installed by UPPTCL). <u>Harduagani</u> – to be updated by UPRVUNL. UPRVUNL may update.
3	HPSEB Ltd.	1	October 2017	<ul style="list-style-type: none">• Out of 12 deficiencies observed, 8 already rectified.• To be updated by HPSEB. HPSEB may update.
4	UJVNL	1	December 2016	Breaker for 220 kV Khodri-I & II needs to be replaced. UJVNL may update.
5	PDD, J&K	3	Status of progress is not submitted. Target completion not known.	As informed during 33 rd NRPC meeting that deficiencies where procurement was not involved had been rectified and other works where procurement is involved are yet to be taken up. PDD J&K informed that they have submitted the proposal for PSDF funding and deficiencies will be rectified when fund will be disbursed from PSDF. As informed by PSTCL defects at 220kV Sarna-Udhampur line, pertains to PDD, J&K. J&K may update.

Annex-II**Protection audit of intra-state system/balance system not covered in Basic Protection Audit**

Utility	Third party protection audit carried out by	No. of sub-stations covered/ expected to be covered	Status of Audit	Status of Report	Status of submission of action Plan for rectification of deficiencies
RRVPNL, RRVUNL	CPRI	RRVPNL-39 RRVUNL-5	Completed	Submitted	RRVPNL- Lead Acid Batteries have been procured and installed. RRVUNL- Action Plan submitted.
UPRVUNL	-do-	2	Completed	Submitted	Parichha TPS and Panki TPS: Updated status to be submitted by UPRVUNL.
UPPTCL	-do-	41	Completed	Shall be submitted after receipt and examination of Report, same.	In 43rd TCC/46th NRPC meeting, UPPTCL informed 68 nos. 220kV substations work awarded to CPRI and work at 33 substations completed. Rest to be completed by January 2020.
UJVNL	-do-	2 (Chilla, Chhibra)	Completed	Submitted	Action Plan not submitted.
PDD J&K	-do-	3 (Janipur, Amargarh, Hiranagar)	Completed	Submitted	Action Plan for Heeranagar and Amargarh not submitted.

Utility	Third party protection audit carried out by	No. of sub-stations covered/ expected to be covered	Status of Audit	Status of Report	Status of submission of action Plan for rectification of deficiencies
HPSEB Ltd.,	-do-	6 (Uprela Nangal, Giri 220 kV, Jassore 220 kV, Baddi, 220 kV Kangoo, 220 kV Kotla)	Completed	Submitted	Action Plan for 220 kV Kotla not yet submitted. Rectification of observation partly complied.
UT Chandigarh	-do-	1 (Kishengarh)	Completed	Submitted	Not submitted.
Budhil Power	-do-	1	Completed	Submitted	Not submitted.
HVPNL	-do-	4 (Sector 72, Gurgaon ; Tepla; Bastara; A-5, Faridabad)	Completed	Submitted	HVPNL may update.
DTL	-do-	4 (Rohini; Mehrauli; Mundka; Shalimar Bagh)	Completed	Submitted	Action has already been taken. Report will be submitted.
PTCUL	-do-	4 (Pantnagar, Haridwar, Kashipur, Roorkee)	Completed	Submitted	Not submitted for Haridwar, Roorkee. PTCUL may update.

Status of Bus bar Protection for Northern Region Constituents

State/ Constituent	TRANSCO / GENCO	Total no. of S/s or Switch yards (220 kV & above)	No. of S/S or Switchyards where Bus bar protection is functioning	Remarks	Action Plan
Delhi	DTL	37	34	For 220 kV S/S namely, Gopalpur and Kanjhawala are being planned. (Lodi Road is GSS)	P.O. for 26 Nos. of substations has been awarded and out of which scheme at 05 Nos. of substations have been commissioned.
Haryana	HVPNL	63	48	12 out of which 5 in process; 7 (date is yet to be decided); 3 not required.	Initially, tentative date of commissioning was informed to be June 2019 . HVPNL may update the status.
Rajasthan	RVPNL	53	46 (7 defective)		74 new Bus bar Protection Scheme are being commissioned. Work at 56 out of 74 locations completed. RVPNL may update.
Himachal Pradesh	HPSEB	08	04	At one S/s it was working and at 2 S/s, it was defective.	04 nos. BBP schemes commissioned and for remaining 04 s/s to be done by 2017. HPSEB may update.
Punjab	PSTCL	101 Nos. of 220kV and 5 Nos. of 400 kV s/s	46 Nos. of 220kV and 5 Nos. of 400 kV s/s		Procurement and commissioning process for 45 more Sub-Stations is under progress through PSDF funding. Likely completion date for tendering process was December 2019 . Remaining 10 nos. of 220 kV Sub-Stations are newly commissioned in past 3-4 years and these stations have not been

					covered under Bus Bar Protection Scheme till date. For remaining S/s, reverse zone protection time set to 160 ms. PSTCL may update.
UTs of J&K and Ladakh	-	06	-		Needs to be updated.
Uttarakhand	PTCUL	10	09	-	Order placed for 01 defective. PTCUL may update.
BBMB	BBMB	23	20	Not required at Dhulkote and Jagadhari. For Sangrur, Kurukshetra and Delhi as no. of feeders is less than five. PSC decided that it needs to be installed.	For Barnala it is to be provided by PSTCL as agreed in PSC. PSTCL were to commission it by 31.12.2016. BBP is being provided at Kurukshetra and Delhi substations. New Numerical Bus Bar Protection for both the substations has been received at site and likely to be commissioned by 31.03.2020.
Uttar Pradesh	UPPTCL	141	94		Representative of UPPTCL informed that SEL panels are being procured and its installation would be completed shortly. UPPTCL may update.