



सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

सं: उ.क्षे.वि.स./प्रचालन/106/01/2020/1381-1422

दिनांक: 13/02/2020

विषय: प्रचालन समन्वय उप-समिति की 168^{वीं} बैठक का कार्यसूची ।

Subject: Agenda of 168th OCC meeting.

प्रचालन समन्वय उप-समिति की 168^{वीं} बैठक दिनांक 19.02.2020 को 10:00 बजे से होटल हयात रीजेंसी, गोमती नगर, लखनऊ में आयोजित की जाएगी। उक्त बैठक की कार्यसूची उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट <http://www.nrpc.gov.in> पर उपलब्ध है।

168th meeting of the Operation Co-ordination sub-committee will be held on 19.02.2020 (10:00 AM onwards) at Hotel Hyatt Regency, Gomti Nagar, Lucknow. The agenda of this meeting has been uploaded on the NRPC web-site <http://www.nrpc.gov.in>.

It is requested that the updated status of various points under follow-up action points of previous OCC meeting may kindly be furnished prior to the meeting.

Kindly make it convenient to attend the meeting.

(सौमित्र मजूमदार)

अधीक्षण अभियंता (प्रचालन)

सेवा में : प्रचालन समन्वय उप समिति के सभी सदस्य।

To : All Members of OCC

1. Confirmation of Minutes

The minutes of the 167th OCC meeting which was held on 16.01.2020 and 17.01.2019 at NRPC Secretariat, New Delhi were issued vide letter of even number dated 05.02.2020.

No comment on the minutes has been received from any of the members till date.

The sub-committee may kindly confirm the Minutes.

2. Review of Grid operations of January 2020**2.1 Supply Position (Provisional) for January 2020**

Anticipated Power Supply Position v/s Actual Power Supply Position (Provisional) of Northern Region during the month of January 2020 is as given below:

State	Req. / Avl.	(MU)			(MW)		
		Anticipated	Actual	Variation	Anticipated	Actual	Variation
Chandigarh	Avl.	110	117	6.6%	300	297	-1.0%
	Req.	125	117	-6.2%	280	297	6.1%
Delhi	Avl.	2970	2294	-22.8%	4880	5226	7.1%
	Req.	2180	2294	5.2%	4580	5226	14.1%
Himachal Pradesh	Avl.	930	931	0.1%	1680	1786	6.3%
	Req.	930	934	0.4%	1700	1786	5.1%
Haryana	Avl.	5460	3863	-29.3%	9900	7016	-29.1%
	Req.	3940	3863	-2.0%	7060	7016	-0.6%
UTs of J&K and Ladakh	Avl.	650	1563	140.5%	1680	2574	53.2%
	Req.	1930	1945	0.8%	3230	3218	-0.4%
Punjab	Avl.	5490	3433	-37.5%	8470	6326	-25.3%
	Req.	3520	3433	-2.5%	6470	6326	-2.2%
Rajasthan	Avl.	8400	7377	-12.2%	17720	14017	-20.9%
	Req.	7700	7379	-4.2%	13100	14017	7.0%
Uttarakhand	Avl.	1130	1209	7.0%	2100	2208	5.1%
	Req.	1160	1210	4.3%	2180	2208	1.3%
Uttar Pradesh	Avl.	8700	8734	0.4%	16750	16987	1.4%
	Req.	8550	8734	2.2%	16500	16987	3.0%
NR	Avl.	33840	29521	-12.8%	63480	50780	-20.0%
	Req.	30035	29910	-0.4%	49700	51338	3.3%

As per above, negative / significant variation ($\geq 5\%$) in Actual Power Supply Position (Provisional) vis-à-vis Anticipated figures is observed for the month of January 2020 in terms of Energy Requirement for Chandigarh, Delhi, Haryana, Punjab and Rajasthan and in terms of Peak Demand similar variation is noted for Chandigarh,

Delhi, HP, Haryana, UTs of J&K and Ladakh, Punjab and Rajasthan. **These states/UTs are requested to submit reason for such variations so that the same can be deliberated in the meeting.**

All SLDCs are requested to furnish provisional and revised power supply position in prescribed formats on NRPC website portal by 2nd and 15th day of the month respectively for the compliance of Central Electricity Authority (Furnishing of Statistics, Returns and Information) Regulations, 2007.

2.2 Power Supply Position of NCR

NCR Planning Board (NCRPB) is closely monitoring the power supply position of National Capital Region. Monthly power supply position for NCR till the month of January 2020 is placed on NRPC website. (<http://nrpc.gov.in/operation-category/power-supply-position/>).

3. Maintenance Programme of Generating Units and Transmission Lines

3.1. Maintenance Programme for Generating Units

The meeting on proposed maintenance programme for Generating Units for the month of March 2020 is scheduled on 18.02.2020 at UPSLDC Complex, Lucknow.

3.2. Outage Programme for Transmission Elements.

The meeting on proposed outage programme of Transmission lines for the month of March 2020 is scheduled on 18.02.2020 at UPSLDC Complex, Lucknow.

4. Planning of Grid Operation

4.1. Anticipated Power Supply Position in Northern Region for March 2020

The Anticipated Power Supply Position in Northern Region for March 2020 is enclosed at **Annexure-A.I.**

SLDCs are requested to update their estimated power supply position for March 2020 and measures proposed to be taken to bridge the gap between demand & availability, as well to dispose of the surplus, if any, in the prescribed format.

5. Submission of breakup of Energy Consumption by the states

In previous OCC meeting all SLDCs were requested to provide the breakup of energy consumption by the states by segregating the same from the billed data from DISCOMs in the format as prescribed below:

Category→	Consumption by Domestic Loads	Consumption by Commercial Loads	Consumption by Agricultural Loads	Consumption by Industrial Loads	Traction supply load	Miscellaneous / Others
<Month>						

The status of information received from SLDCs is listed below:

Rajasthan - Up to December 2019 (in specified format)

Punjab - Up to October 2019 (in specified format)

Uttar Pradesh- Up to November 2019 (in specified format)

Haryana- Up to Nov 2019 (**Not in specified format**)

Himachal Pradesh- Data from April 2018 to March 2019. (**Not in specified format**)

SLDCs (except Rajasthan) may update.

6. System Study for Capacitor Requirement in NR for the year 2019-20

6.1 In the 167th OCC meeting it was informed that while modelling the DISCOM level network of Haryana, CPRI representative has brought out certain missing data in the file provided by Haryana and has also sought certain clarifications. Haryana has submitted the clarification along with the missing data vide e-mail dated 28.01.2020 and the same has been forwarded to CPRI for further action.

6.2 The details of nodal officers is as under:

Sl. No	State	Name	Designation	E-mail ID	Contact No.
1.	Himachal Pradesh	Er. Gagan	Sr. Executive Engineer (Power Controller)	gagankaura85@gmail.com pcshimla2003@gmail.com	94180-65073
		Er. Shashi Kumar	AEE	thakyal.shashi13@gmail.com	97368-26582
2.	Uttar Pradesh	Sh. Pankaj Saxena	EE	smart.saxena@gmail.com	94159-02780
3.	Rajasthan	Smt. Sonia Shishodia	EE	xen2.pp@rvpn.co.in	94140-30303
4.	Haryana	-	XEN/ LD&PC	-	93502-78204
			XEN/ works, Panchkula	-	93164-67248
			XEN/ works, Hisar	-	93554-21122
5.	PSPCL, Punjab	Sh. Rajesh Gupta	Dy. Chief Engineer	seprpspcl@gmail.com	96461-23323

6.3 Further, as per the decision taken in the 44th TCC and 47th NRPC, NRLDC representative was requested to provide the PSSE data file with respect to the date and time of states other than Haryana so that CPRI could take up the work simultaneously for all the states. NRLDC has submitted the all India PSSE data file for the peaks of Punjab, HP, Rajasthan, UP and Delhi on 07.02.2020 along with the suggestion that same may be vetted by the respective state before submission to CPRI. Accordingly, base case files have been shared with the state coordinators for their feedback.

6.4 Uttarakhand, UTs of J&K and Ladakh and UT of Chandigarh have not submitted

their data. Therefore, study would not be initiated for these states/UTs.

Punjab, HP, Rajasthan, UP and Delhi may update.

7. Phase nomenclature mismatch issue with interconnected stations

- 7.1. In a separate meeting held in NRPC Sectt. on 13.08.2019 to deliberate on the issue of phase nomenclature mismatch of BBMB with interconnected substations, it was brought out that there might be such phase nomenclature mismatch issue in other utilities also.
- 7.2. In view of the above, it was decided that all the concerned STUs/SLDCs shall certify about phase nomenclature mismatch of their system considering PGCIL phase nomenclature as reference. Format in this regard was attached at Annexure-III of the minutes of 162nd OCC meeting.
- 7.3. The information duly signed has been obtained from **Rajasthan, BBMB, Punjab, UP, Delhi, Haryana (Annexure-A.II)**. The information has not been received from **Uttarakhand, Himachal Pradesh** even after regularly being pursued in numerous OCC meetings.

Members may deliberate on the plan of action to be taken to rectify the Phase nomenclature mismatch issue with interconnected stations as identified.

8. Follow up of issues from previous OCC Meetings – Status update

The updated status of Agenda items is enclosed at **Annexure-A.III**.

All utilities are requested to update the status.

9. SPS for ICTs at 765 kV Unnao sub-station

As per the deliberations of 167th OCC meeting, UP was advised to conduct mock test exercise of SPS scheme for ICTs at 765kV S/s Unnao and 765kV Anpara-C – Unnao line in the last week of January 2020 and same has been conducted on 30.01.2020 as per available information.

Members may kindly take a note.

10. Automatic Demand Management System

- 10.1. The status of implementation of ADMS which is mandated in Clause 5.4.2 (d) of IEGC by SLDCs/SEB/DISCOMs is presented below:

State/ Utility	Status
Punjab	<p>Not fully implemented.</p> <p>At SLDC level, remote tripping of 100 feeders at 66 kV is possible.</p> <p>At 11 kV feeder level, ADMS is to be implemented by Distribution Company. As per the information available with SLDC, for 50 feeders of 11 kV at Amritsar and Ludhiana, scheme was under finalization.</p>
Delhi	<p>Fully implemented by TPDDL, BRPL and BYPL.</p> <p>NDMC implementation delayed. May kindly update.</p>

State/ Utility	Status
Rajasthan	<p>Under implementation.</p> <p>LoA placed on 12.12.2018 with an execution period of 18 months for ADMS at the level of 33 kV feeders at EHV Substation of RVPN under SCADA / EMS part of project.</p> <p>ADMS functionality at 11 kV feeders from 33/11 kV substation is under the jurisdiction of the DISCOMs and matter is being perused with DISCOMs authorities</p>
UP	<p>Not fully implemented.</p> <p>Remote operation of 50 feeders at 132 kV level being operated from SLDC.</p> <p>For the down below network, issue taken up with the DISCOMs.</p>
Haryana	<p>Not implemented.</p>
HP	<p>02 feeders could be operated from SLDC through manual intervention. Letter has been sent by HPSEB to HP-SLDC for making its operation automatic.</p>

- 10.2. Punjab SLDC has informed in 166th OCC meeting that in a meeting with M/s Siemens it was informed that separate Hardware/software/applications would be required for implementing ADMS on 66 kV feeders where remote control (through SCADA) facility was available. M/s Siemens has submitted the tentative cost for implementation of ADMS and the same is under consideration.
- 10.3. In 166th OCC meeting, UP SLDC representative informed that a meeting was held on 10.01.2020 with M/s Siemens in which they were informed by OEM that implementation of ADMS scheme is feasible and UP SLDC is taking positive steps on the proposal.

Members may update the status of implementation of scheme.

11. Mapping of UFR, df/dt relay details in SCADA

- 11.1 In the 167th OCC meeting, it was highlighted that real time availability of main feeders of Punjab, Delhi and HP was very poor. These states were advised to identify the issue and increase the real time availability. Further, it was decided to take up the communication related issues in the mapping of UFR & df/dt relays with SCADA in TeST meetings.
- 11.2 The latest state wise summary of UFR and Df/dt feeder mapping and availability of data is presented in the following table:

Sl. No.	State	Remarks
1	UP	a) UFR and df/dt data is updated. b) UP informed that they are still working on new display.
2	Rajasthan	UFR Main feeder data mapping is yet to be done. Availability of data from main feeder is not available, however data from alternate feeder is available. Data from feeders having df/dt is available.
3	Punjab	Both UFR and df/dt feeders mapping and data availability needs improvement.
4	Delhi	Real time data from feeders having UFR and df/dt is not available at NRLDC due to communication problem at DTL end.
5	Haryana	Both UFR and df/dt data are available at NRLDC end, but data from feeders having Df/dt (69%) needs improvement.
	Note:	a) Summary display of UFR and DFDT needs to be maintained. E.g. - UP df/dt/UFR Summary display can be taken as example. b) All constituents are requested to provide UFR and df/dt related data in the first week of every month as agreed in OCC meeting. This would help in monitoring and updating the status at NRLDC.

SLDCs and NRLDC may update.

12. Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd. (agenda based on letter from GM Division, CEA)

- 12.1 GM Division, CEA vide letter dated 04.12.2019, has requested NRPC Sect. to get the comments of HPSLDC on the Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd.
- 12.2 HPSLDC reply was submitted to GM Division, CEA vide Letter dated 14.01.2020 (**Annexure-A.IV**).
- 12.3 On analysing the response of HPSLDC, GM Division, CEA vide letter dated 23.01.2020 (**Annexure-A.V**) has requested NRPC Sect. to take up the matter regarding transmission constraint in respect of 132 kV ES Sub-Division, HPSEBL, Bathri and Kurthala so that generation of the above cited IPP is not affected adversely.
- 12.4 Further, in view of the number of forced outages, HPSEB is also advised to

undertake adequate/ proper maintenance of the transmission system associated with the above cited IPP so as to minimize tripping and its impact on the evacuation of hydro generation.

HPSEB/ HPSLDC may brief the sub-committee.

13. Requirement of 01 No. of 220 kV GIS Disconnecter Switch for 231 MW Chamera-III Power Station of NHPC Ltd. on returnable basis (agenda based on Letter from NHPC)

- 13.1 231 MW (3 x 77 MW) Chamera-III Power station of NHPC has two outgoing feeders connected to Chamba Pooling Station at Chamba through 220 kV GIS installed by M/s GE T&D Ltd. in July 2012.
- 13.2 One of the two feeders is under breakdown due to fault in Disconnecter of Line bay since 14.05.2019. In view of the same, the power is being evacuated through the other available feeder.
- 13.3 The power from 70 MW Greenko Budhil Power Station is also being evacuated through the Chamera-III GIS. Further, the power from upcoming Holi Bajoli HEP is also planned for evacuation through Chamera-III GIS.
- 13.4 In the eventuality of any line fault in the existing line, there will not be any path available for power evacuation, thus leading to loss of generation and spillage of water.
- 13.5 The purchase order for the required disconnecter has already been placed to M/s GE T&D Ltd. in September 2019 with the delivery period of 14 months i.e. by Nov/ Dec 2020. Further, no compatible disconnecter is available with NHPC at any of their power stations.
- 13.6 NHPC has informed that Disconnecter of similar model of GIS (B-105) is available as spare at Trauma centre and Electric Lane 220 kV substations of DTL.
- 13.7 DTL has been requested by NHPC vide letter 29.05.2019 and subsequently 21.01.2020 for providing the same on returnable basis.

DTL may kindly update in view of the upcoming Hydro peak season.

14. Provisioning of PMUs on HVDC and FACTS device locations (agenda based on Letter from POSOCO)

- 14.1 POSOCO vide letter dated 03.02.2020 (***Annexure-A.VI***) has brought out the requirement of having PMU on HVDC and FACTS device locations for understanding their behaviour during perturbations in the power system as well as to study model validation.
- 14.2 In the aforementioned letter, the status of availability of PMU data from HVDC and FACTS devices at RLDC/NLDC is presented. Based on which it could be observed that at many locations in Northern region PMU is not available and also where the PMU is placed at AC bus of the station, it has not been wired to record current of HVDC or FACTS devices.
- 14.3 The HVDC stations/ FACTS devices where PMU is not available are Mahendragarh HVDC, Vindhyachal West and North Bus and 400 kV New Wanpoh SVC-1 & SVC-2.
- 14.4 The locations where, though PMU is available but not wired to record current of HVDC or FACTS devices are HVDC Bhiwadi, Lucknow STATCOM, Nalagarh STATCOM, 400 kV SVC-1 & SVC-2 at Kanpur, 400 kV SVC-1 & SVC-2 at Ludhiana, 400 kV SVC-1 & SVC-2 at Kankroli.

Members may deliberate.

15. To restrict DC of coal/lignite based generating stations not giving requisite primary response (agenda by UPSLDC)

15.1 Para 5.7 & 5.8 of Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fifth Amendment) Regulations, 2017 is as below:

(7) The first sentence of Regulation 5.2(h) of Part 5 of the Principal Regulations shall be substituted as under:

"All coal/lignite based thermal generating units of 200 MW and above, Open Cycle Gas Turbine/Combined Cycle generating stations having gas turbines of more than 50 MW each and all hydro units of 25 MW and above operating at or up to 100% of their Maximum Continuous Rating (MCR) shall have the capability of (and shall not in any way be prevented from) instantaneously picking up to 105%, 105% and 110% of their MCR, respectively, when the frequency falls suddenly."

(8) The following shall be added at the end of Regulation 5.2 (h) of Part 5 of the Principal Regulations:

"For the purpose of ensuring primary response, RLDCs/SLDCs shall not schedule the generating station or unit (s) thereof beyond ex-bus generation corresponding to 100% of the Installed capacity of the generating station or unit(s) thereof. The generating station shall not resort to Valve Wide Open (VWO) operation of units whether running on full load or part load, and shall ensure that there is margin available for providing Governor action as primary response. In case of gas/liquid fuel based units, suitable adjustment in Installed Capacity should be made by RLDCs/SLDCs for scheduling in due consideration of prevailing ambient conditions of temperature and pressure vis-à-vis site ambient conditions on which installed capacity of the generating station or unit (s) thereof have been specified:

Provided that scheduling of hydro stations shall not be reduced during high inflow period in order to avoid spillage

Provided further that the VWO margin shall not be used by RLDC to schedule Ancillary Services.

15.2 From above provisions it is evident that generation schedule of generating stations is restricted up to 100% for ensuring sufficient margin for primary response to ensure secure grid operation. DC for coal/lignite based thermal generating units is allowed up to 105 % as they will give 5% additional power in the form of primary response / frequency response.

It is proposed that additional 5% DC should not be allowed to coal/lignite based thermal generating units not giving requisite primary response / frequency response.

16. Approval of Electrical Inspector for replacement works (agenda by UPSLDC)

Sub regulation 43(2) of CEA (Measures relating to Safety and Electrical Supply) Regulation, 2010 states that:

"Before making an application to the Electrical Inspector for permission to commence or recommence supply in installations above the notified voltage after an installation has been disconnected for six months, an above and voltage exceeding 650V to any person the supplier shall ensure that electric supply lines

or apparatus of voltage exceeding 650V belonging to him are placed in position, properly joined, and duly completed and examined, and the supply of electricity shall not be commenced by the supplier for installations of voltage needing inspection under these regulations unless the provisions of regulations 12 to 29, regulations 33 to 35, regulations 44 to 51 and regulations 55 to 77 have been complied with and the approval in writing of the Electrical Inspector has been obtained by him.”

Also the Sub-Regulation 43(4) states that:

“The owner of any installations of voltage exceeding 650V who makes any addition or alteration to his installation shall not connect to the supply his apparatus or electric supply lines, comprising the said alteration and additions unless and until such alteration and addition has been approved in writing by the Electrical Inspector.”

Further the regulation 29(1) of CEA (Measures relating to Safety and Electric Supply) Regulations, 2010 states that:

“No electrical installation work, including additions, alterations, repairs and adjustments to existing installations, except such replacement of lamps; fans; fuses, switches, domestic appliances of voltage not exceeding 250V and fittings as in no way alters its capacity or character, shall be carried out upon the premises of or on behalf of any consumer, supplier, owner or occupier for the purpose of supply to such consumer, supplier, owner or occupier except by an electrical contractor licensed in this behalf by the State Government and under the direct supervision of a person holding a certificate of competency and by a person holding a permit issued or recognised by the State Government.

Provided that in the case of works executed for or on behalf of the Central Government and in case of installations in mines, oil fields and railways, the Central Government and in other cases the State Government, may by notification in the Official Gazette, exempt on such conditions as it may impose, any such work described, therein either generally or in the case of any specified class of consumers, suppliers, owners or occupiers.”

Chief Engineer CEA vide his letter no. CEI/4/2019/1191 dated 26.12.2019 recommended that according to the safety regulation replacement and upgradation work of sub-station equipment need to be approved by Electrical Inspector.

However, in CEA grid Standard there is no provision of taking approval of electrical inspector for replacement works.

It is therefore proposed that approval of electrical inspector for replacement works should not be required for charging the element.

17. Furnishing bank account details by beneficiary to facilitate payments of net benefits accrued in national Pool Account (SCED) (agenda by NLDC)

In compliance to the CERC Order dated 31st Jan 2019 in Petition No. 02/SM/2019, the Pilot on Security Constrained Economic Despatch (SCED) for Inter State Generating Stations pan India was operationalized from 1300 Hrs on 01st April,

2019.

CERC vide Petition No. 08/SM/2019 (Suo-Motu) dated 11th September 2019 extended the Pilot on Security Constrained Economic Dispatch (SCED) up to 31st March'2020. The Commission has also given the methodology of sharing the SCED benefits accrued in National Pool Account (SCED). The net benefits accrued in the pool shall be shared in the ratio of 50:50 between the generators participating in SCED and the concerned beneficiaries on a monthly basis.

In order to facilitate the disbursement of SCED benefit, NLDC vide letter dated 24th Sep, 2019, 18th Oct' 2019 & 23rd Jan, 2020 (**Annexure-A.VII**) requested beneficiaries to provide bank account details along with the filled-up registration form complete in all respects. Till date, we are yet to receive the bank account details along with the filled-up registration form from below constituents:

S. No.	Name of Constituent	Region
1.	Chandigarh	NR
2.	Delhi	NR
3.	Haryana	NR
4.	J&K	NR
5.	Rajasthan	NR
6.	Uttar Pradesh	NR
7.	PG-Agra	NR
8.	PG-Balia	NR
9.	PG-Kurukshetra	NR
10.	PG-Rihand	NR
11.	Railways_UP_ISTS	NR

Provisional net SCED Benefits Distribution Statement is prepared for the month of April'19, May'19, June'19 & July'2019 and disbursed to respective Beneficiaries as well as the generators whose bank details are received.

Beneficiaries are requested to provide the Bank details for transfer of net SCED benefits at the earliest.

Part-B NRLDC

1. Demand and Generation projections of Q1-2020-21 for POC charges calculation:

In line with CERC sharing of ISTS charges and losses regulation 2010 and subsequent amendments thereof, all the DICs have to submit the data for new transmission assets, Yearly transmission charges (YTC), forecast injection and withdrawal and node wise injection/withdrawal data to implementing agency for computation of PoC charges and losses for the application period. The format for data submission is available on NLDC website at <https://posoco.in/transmission-pricing/formats-for-data-submission/>.

NLDC vide its letter dated 06.01.2020 and NRLDC vide their letter dated 10.01.2020 have requested utilities to furnish Technical and commercial data for Apr'20-Jun'20 Q1 (2020-2021). Details have been received only from NTPC, Rampur, Jhakri, Tehri, HP, Delhi & UP. Other utilities are also requested to submit data as early as possible.

Further, generation and load projection has been done by NLDC/RLDCs based on monthly maximum injection/demand met in the last 3 years from actual metered data and accordingly projections have been made as attached in **Annexure-B.I**. Utilities are requested to kindly check the data and correct anomalies, if any with valid justification.

Members may please like to discuss.

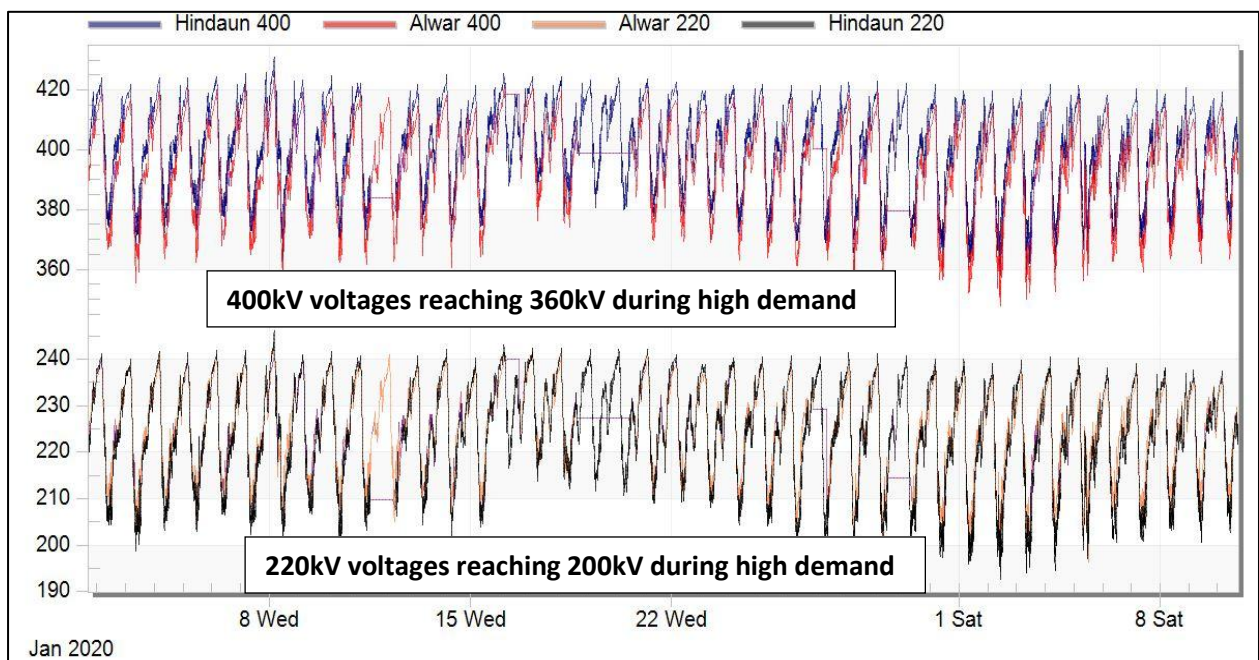
2. Grid Operation related Issues:

a) Low voltages at 400kV Hindaun, Alwar:

Issue of low voltages observed at Hindaun and Alwar were deliberated at 44th TCC/ 47th NRPC meeting. It was highlighted that voltages at Hindaun and Alwar vary by 50-60 kV in a single day from past few days. Tap positions at these locations were changed on request from Rajasthan SLDC to improve voltage profile at 220kV voltage level. However, as demand of Rajasthan rises from 6000MW at 04:00hrs to 12000MW at 07:00hrs, 400kV voltages at Hindaun and Alwar fall by nearly 50kV even reaching 370kV and 360kV respectively. TCC had deliberated that, although, tap changes were done temporarily at Hindaun and Alwar, this is not long-term solution. There is need to plan for more reactive power support or additional connectivity at Hindaun/Alwar to avoid such situation in future.

From the available plots, it could be seen that tap positions were revised for short duration, however, these were once again changed which again degraded 400kV voltage profile of these stations. It is to be noted that this is high demand period in Rajasthan and such low voltages may lead to voltage stability issues in the area.

Rajasthan may share their plan to mitigate low voltage issues at these stations.



b) Reactive power performance of generators

Following was agreed in 44th TCC / 47th NRPC meeting and 165th and 166th OCC meetings:

- All generators (including intrastate) shall absorb MVAR as per capability curve
- Reactive power support performance and MVAR telemetry issues will be reviewed in monthly OCC meetings.
- Reactive power capability testing will be carried out after discussion in OCC meeting.

Reactive power response of generating stations is being regularly discussed in OCC meetings.

Reactive power response in respect of MVAR vs Voltage for **past 30 days (12.01.2020 - 12.02.2020)** as per NRLDC SCADA data is enclosed as **Annexure-B.II** in agenda. Based on available data, it is observed that there are margins available as per capability curves for most of the generating stations. In addition, telemetry (sign and magnitude of MVAR) of various state generating station is yet to be corrected.

It was agreed in previous OCC meetings that states shall also develop MVAR vs voltage plots for generators under their jurisdiction. This would also help to improve telemetry of MVAR data and eventually, more reliable MVAR vs voltage plots will be available.

In last OCC meeting, Koteshwar (THDC) was asked to share MVAR data from their end and if required reactive power capability testing of Koteshwar may be carried out alongwith site visit planned for dedicated bus coupler bay allocation at Koteshwar. Koteshwar may update.

Members may like to discuss.

3. Requirement of power flow and dynamics data for modeling renewable energy generation in Indian grid

Need of power flow and dynamic data for modeling renewable energy generation was discussed in detail in 155th and 157th OCC meeting. It was highlighted that to ensure security of the interconnected power grid, it is imperative to conduct stability studies in both operational (short-term) and planning (long-term) horizons in the power grid. To gain confidence in the stability studies that adequately represent system performance, fit-for-purpose models of power system elements are of utmost importance. Dynamic data of conventional generator are still pending from various agencies. Latest status of dynamic data submission is enclosed in **Annexure-B.III**.

Remaining data may also be shared at the earliest so that model development process of Northern region can be completed.

Members may please discuss.

4. Frequent forced outages of transmission elements in the month of Jan'20:

The following transmission elements were frequently under forced outages during the month of **Jan'20**:

S. NO.	Element Name	No. of forced outages	Utility/SLDC
1	400 KV Aligarh-Mainpuri (UP) Ckt-1	8	UP
2	400 KV Baspa(JP)-Karcham Wangtoo(JSW) (HBPCL) Ckt-2	5	JSW/HP
3	400 KV Bawana-Mundka (DV) Ckt-1	5	Delhi
4	400 KV Kishenpur-NewWanpoh (PG) Ckt-3	5	POWERGRID
5	400/220 kV 315 MVA ICT 1 at Makhu(PS)	5	Punjab
6	400 KV Kishenpur-NewWanpoh (PG) Ckt-1	4	POWERGRID
7	400 KV Akal-Jodhpur (RS) Ckt-1	3	Rajasthan
8	400 KV Aligarh-Sikandrabad (UP) Ckt-1	3	UP
9	400 KV Banda-Rewa Road (UP) Ckt-1	3	UP
10	400 KV Bareilly-Unnao (UP) Ckt-2	3	UP
11	400 KV Kishenpur-NewWanpoh (PG) Ckt-4	3	POWERGRID
12	400 KV Merta-Heerapura (RS) Ckt-1	3	Rajasthan
13	400 KV Obra_B-Rewa Road (UP) Ckt-1	3	UP
14	400 KV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-1	3	Rajasthan
15	400 KV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-2	3	Rajasthan
16	765/400 kV 1500 MVA ICT 2 at Phagi(RS)	3	Rajasthan

The complete details are attached at **Annexure-B.IV**. Frequent outages of such elements affect the reliability and security of the grid. Hence, utilities are requested to look into such frequent outages and share the remedial measures taken/being taken in this respect.

Members may like to discuss.

5. Multiple element tripping events in Northern region in the month of Jan'20:

A total of **12** grid events occurred in the month of Jan'20 of which **7** are of GD-1 category. The preliminary report of all the events have been issued from NRLDC. A list of all these events along with the status of details received by 05-Feb-2020 is attached at **Annexure-B.V**.

Further, despite persistent discussions/follow-up in various OCC/PCC meetings, the compliance of the regulations is still much below the desired level.

Maximum Fault Duration is **2320ms** in the event of multiple element tripping at 400/220 kV Malerkotla (PG) on 28-Jan-20 at 19:27hrs.

Delayed clearance of fault (more than 100ms for 400kV and 160ms for 220kV system) observed in total **6** events out of 12 grid events occurred in the month.

Members may take expeditious actions to avoid such tripping in future and discuss the same. Moreover, utilities may impress upon all concerned for providing the Preliminary Report, DR/EL & Detailed Report of the events in line with the regulations.

Members may like to discuss.

6. Details of tripping of Inter-Regional lines from Northern Region for Jan'20:

A total of **07** inter-regional lines tripping occurred in the month of Jan'20. The list is attached at **Annexure-B.VI**. Out of 07 number of trippings, no tripping incident is related to HVDC system. The status of receipt of preliminary reports, DR/EL within 24hrs of the event and fault clearing time as per PMU data has also been mentioned in the table. The non-receipt of DR/EL & preliminary report within 24hrs of the event is in violation of various regulations. As per regulations, all the utilities shall furnish the DR/EL, flag details & preliminary report to RLDC/RPC within 24hrs of the event. They shall also furnish the detailed investigation report within 7 days of the event if fault clearance time is higher than mandated by CEA (Grid Standard) Regulations.

Members may please note and advise the concerned for taking corrective action to avoid such trippings as well as timely submission of the information.

7. Revision of document for System Restoration Procedure (SRP) for Northern Region:

System restoration procedure for Northern Region has been revised on 31st Jan 2020 & updated document link is as below:

https://nrldc.in/wp-content/uploads/2019/01/System_Restoration_NR_2020.pdf

Document is password protected and password was already informed to all the NR constituents through letter dated 31st Jan 2020.

Constituents are requested to go through the document and provide any modification/addition in respect of their system. SLDC/Generating utilities are requested to kindly update and share the restoration procedure in respect of their state/generating station.

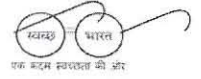
It is for the information of the members.

Annexure-A.I**Anticipated Power Supply Position in Northern Region for March 2020**

State / UT		Mar'20 (MU)	Mar'20 (MW)
Chandigarh	Availability	120	310
	Requirement	110	235
	Surplus/Shortfall (MU)	10	75
	Surplus/Shortfall (%)	9.1%	31.9%
Delhi	Availability	3110	5970
	Requirement	1980	4100
	Surplus/Shortfall (MU)	1130	1870
	Surplus/Shortfall (%)	57.1%	45.6%
Haryana	Availability	5560	10020
	Requirement	3800	6750
	Surplus/Shortfall (MU)	1760	3270
	Surplus/Shortfall (%)	46.3%	48.4%
Himachal Pradesh	Availability	1040	1600
	Requirement	860	1580
	Surplus/Shortfall (MU)	180	20
	Surplus/Shortfall (%)	20.9%	1.3%
UTs of J&K and Ladakh	Availability	920	2030
	Requirement	1800	3150
	Surplus/Shortfall (MU)	-880	-1120
	Surplus/Shortfall (%)	-48.9%	-35.6%
Punjab	Availability	5890	9000
	Requirement	4350	7400
	Surplus/Shortfall (MU)	1540	1600
	Surplus/Shortfall (%)	35.4%	21.6%
Rajasthan	Availability	9280	14900
	Requirement	7160	11900
	Surplus/Shortfall (MU)	2120	3000
	Surplus/Shortfall (%)	29.6%	25.2%
Uttar Pradesh	Availability	9600	16500
	Requirement	9000	16500
	Surplus/Shortfall (MU)	600	0
	Surplus/Shortfall (%)	6.7%	0.0%
Uttarakhand	Availability	1060	2010
	Requirement	1090	2000
	Surplus/Shortfall (MU)	-30	10
	Surplus/Shortfall (%)	-2.8%	0.5%
Total NR	Availability	36580	62340
	Requirement	30150	49000
	Surplus/Shortfall (MU)	6430	13340
	Surplus/Shortfall (%)	21.3%	27.2%



भाखड़ा ब्यास प्रबन्ध बोर्ड



भारत
राष्ट्र गौरव

प्रेषक,

पी एवं सी निदेशालय

एस.एल.डी.सी. कॉम्प्लैक्स 66 के.वी. उप केन्द्र, इंडस्ट्रीयल एरिया फेस-1, चंडीगढ़
दूरभाष-0172-2652054, फैक्स-0172-2652054



निदेशक/ पी एंड सी,
बीबीएमबी, चंडीगढ़।

प्रेषिती,

अधीक्षण अभियंता(ऑपरेशन),
एनआरपीसी, दिल्ली ।

क्रमांक: 366-70/डीपीसी/M-1ए

दिनांक: 11-12-2017

विषय: Phase Mismatch issue with BBMB and interconnected stations-
Agenda of 138th OCC meeting-Item No. 35

उपरोक्त विषय के संबंध में Phase mismatch का मुद्दा study करने के लिए एक कमेटी का गठन किया गया था । कमेटी द्वारा प्रस्तुत रिपोर्ट अग्रिम कार्यवाही हेतु संलगित है जी ।

यह पत्र मुख्य अभियन्ता/पारेषण प्रणाली, बीबीएमबी, चंडीगढ़ की स्वीकृति उपरांत जारी किया जाता है ।

संलग्नक: उपरोक्तानुसार

आप के चयन
निदेशक/ पी एंड सी,
बीबीएमबी, चंडीगढ़।

प्रतिलिपि:

1. मुख्य अभियन्ता/पारेषण प्रणाली, बीबीएमबी, चंडीगढ़ ।
2. मुख्य अभियन्ता/प्रणाली परिचालन, बीबीएमबी, चंडीगढ़ ।
- ✓3. निदेशक/पीआर, बीबीएमबी, चंडीगढ़ ।

REPORT

Chief Engineer/TS, BBMB, Chandigarh vide office order no.840 dated 4/9/2017 had constituted a committee for looking into the matter of difference of phase nomenclature at 400 KV BBMB Dehar Power House, 400 kV Substation BBMB Bhiwani, 400 kV Substation BBMB Panipat with 220 kV Substation HPSEB Kangoo, 400 kV Substation PSTCL Rajpura, 400 kV Substation PGCIL Panchkula, 400 kV Substation PGCIL Hisar, 400 kV Substation PGCIL Bhiwani, 400 kV Substation NTPC Dadri,

Meetings of the committee were held at BBMB Chandigarh, BBMB Panipat, 400 kV Dehar Power House. Different sites / tower location were visited by the committee members at 400 kV Substation BBMB Panipat, 400 kV Substation PGCIL Panchkula, 400 kV Dehar Power House, and 220 kV Substation HPSEB Kangoo. The phase nomenclature at different substations is observed as under:-

1. **400 kV Dehar Power House:** - The phase nomenclature diagram of Dehar Power House Slapper is given as Annexure-1. The R, Y, B phase nomenclature at this station for 400 kV and 220 kV buses and bays is different from PGCIL Panchkula/ PSTCL Rajpura/ HPSEB Kangoo. This phase nomenclature of R, Y, B at Dehar Power House is equal to Y, B, R of PGCIL/ PSTCL/ HPSEB.

To match Grid Phase nomenclature between DPH and PGCIL, PSTCL, Kangoo HPSEB, phase nomenclature is corrected on the primary equipment at PGCIL Panchkula, PSTCL Rajpura, HPSEB Kangoo which is discussed as below:-

- a.) **400 kV PGCIL Panchkula:-** As per diagram given in Annexure-II, 400 kV Dehar –Panchkula Line R, Y, B. Phase nomenclature has been corrected /changed to Y, B, R by PGCIL at the last tower of this line before entering into 400 kV Substation PGCIL Panchkula. Similarly, 400 kV R, Y, B of 400 kV Panipat- Panchkula is changed / corrected to Y, B, R at the last tower of 400 kV Panipat-Panchkula line before enter into 400 kV Substation PGCIL Panchkula.
- b.) **400 kV Substation PSTCL Rajpura:-** As per diagram given in Annexure-III, 400 kV Dehar- Rajpura line R, Y, B phase nomenclature has been corrected /changed to Y, B, R by PSTCL at the last tower of this line before entering into 400 kV Substation PSTCL Rajpura. Similarly, 400 kV R, Y, B of 400 kV Bhiwani-Rajpura line is changed /corrected to Y, B, R at the last tower of 400 kV-Bhiwani-Rajpura line before entering into 400 kV Substation PSTCL Rajpura.
- c.) **220 kV Substation HPSC Kangoo:-** There are 2 Nos. lines one each of 220 kV and 132 kV coming from BBMB Dehar Power House. HPSEB has corrected/changed the Phase nomenclature of BBMB R, Y, B to Y, B, R at the last tower of 220KV & 132KV Dehar –Kangoo Line before entering into their substations (Diagram VI).
- d.) **220KV System Dehar (BBMB):-** Phase nomenclature of 220KV Buses and Bays at 400KV Dehar Power House is same as that of 400KV system Dehar / Panipat / Bhiwani. As per diagram

7/11/2017

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at Annexure-I, the phase nomenclature 220KV system R, Y, B is corrected at 1st tower of Dehar – Ganguwal line leaving tower at Dehar end to Y, B, R for both ckts.

2. **400KV Panipat Substation (BBMB):-** As per diagram at Annexure IV- the phase nomenclature of 400KV Buses /Bays at 400KV system BBMB Panipat is same as that of 400KV Buses / Bays of 400 KV Dehar Power House / 400KV Substation BBMB Bhiwani. PGCIL has corrected this phase nomenclature to Y, B, R at the 1st tower leaving from 400 KV Panipat Substation of BBMB for both its circuits of 400 KV Panipat-Dadri I & II Similarly, BBMB 220 KV system is corrected to Y, B, R at the 220KV side of 400/220kV ICT-I & II at Panipat. Hence 220KV system at Panipat is in order and matches with NTPC/ PGCIL/PSTCL/HPSEB.
3. **400KV Bhiwani Substation of BBMB:-** As given in diagram Annexure V, 400 kV system of R,Y,B phase nomenclature is same as that of 400 kV BBMB Dehar / Panipat system. 400 kV BBMB Bhiwani-PGCIL Bhiwani line / PGCIL Hisar, R, Y, B has been corrected /changed at the 1st tower leaving the BBMB system to Y, B, R. Similarly, 220KV R,Y, B is corrected while entering into 220KV Substation at the 220 kV Side of 400/220 kV ICT Bank of BBMB.

The consolidated diagram of changes of 400 kV/220 kV R,Y,B. Nomenclature at different locations is attached at Annexure VII.

On account of different phase nomenclature of PGCIL/PSTCL/HPSEB/BBMB. it is proposed that for analysis of fault occurring on following sections of the system, IED/Relays phase indications at different ends may be treated as under:-

Sr. No.	Name of the Line	Relay Indication at BBMB end	Relay indication at other end.
1.	400kv BBMB Panipat – NTPC Dadri -1		
2.	400kv BBMB Panipat- NTPC Dadri- 2		
3.	400kv BBMB Panipat - PGCIL Panchkula		
4.	400kv BBMB Bhiwani- PGCIL Bhiwani.	RED	YELLOW
5.	400kv BBMB Bhiwani- PGCIL Hisar		
6.	400kv BBMB Bhiwani- PSTCL- Rajpura.	YELLOW	BLUE
7.	400kv BBMB Dehar- PGCIL Panchkula		
8.	400kv BBMB Dehar PSTCL- Rajpura	BLUE	RED
9.	220kv BBMB Dehar- HPSEB Kangoo		
10.	220kv BBMB Dehar- BBMB Ganguwal		
11.	132kv BBMB Dehar- HPSEB Kangoo		

3/12/11
Er. R. K. Chandan
Director /P&C
BBMB Chandigarh

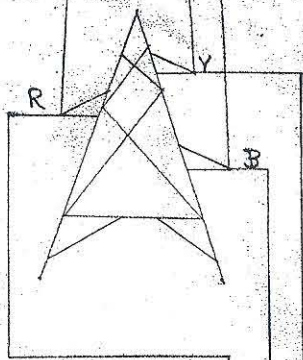
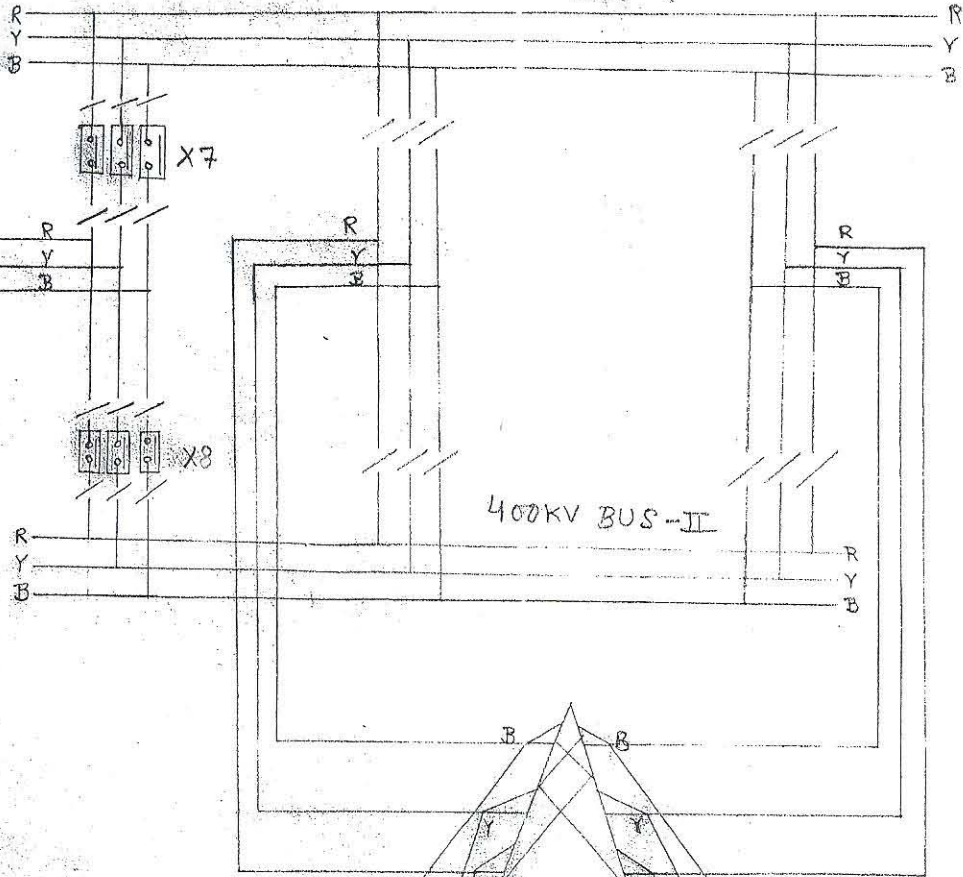
27/11/11
Er. N.K.Singhal
SE/DPH
BBMB Slapper

Er. I.S.Bajwa
Dy. Director /P&T
BBMB Chandigarh

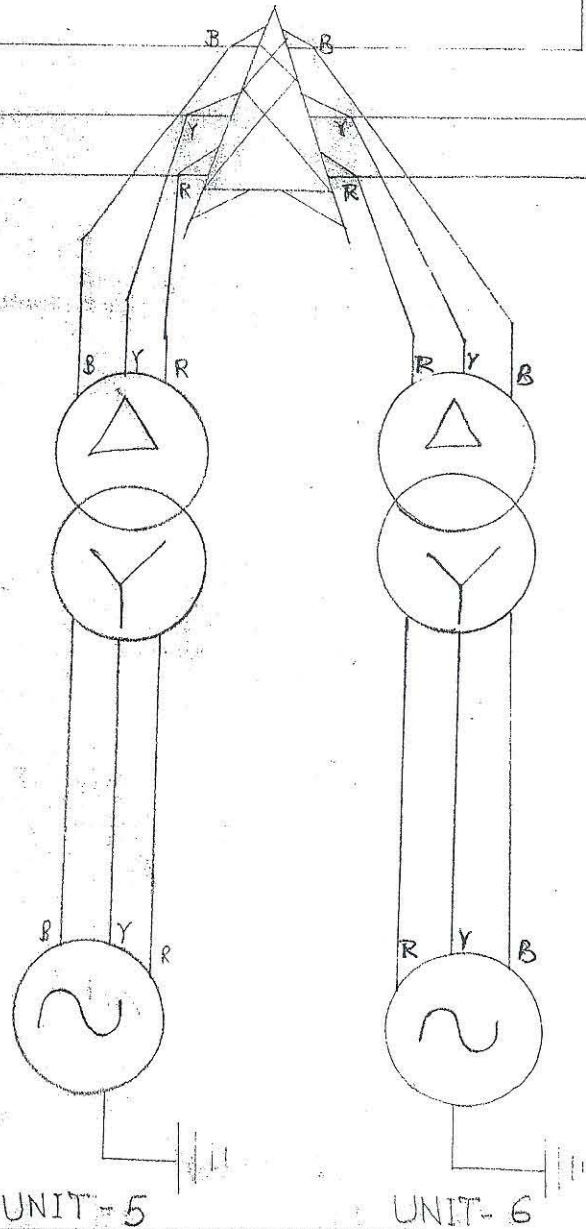
Er. Amandeep Singh
Dy. Director /P&D (TS)
BBMB Chandigarh

Er. K.Karunesh
AE/Mtc.
BBMB Slapper

400KV BUS-I



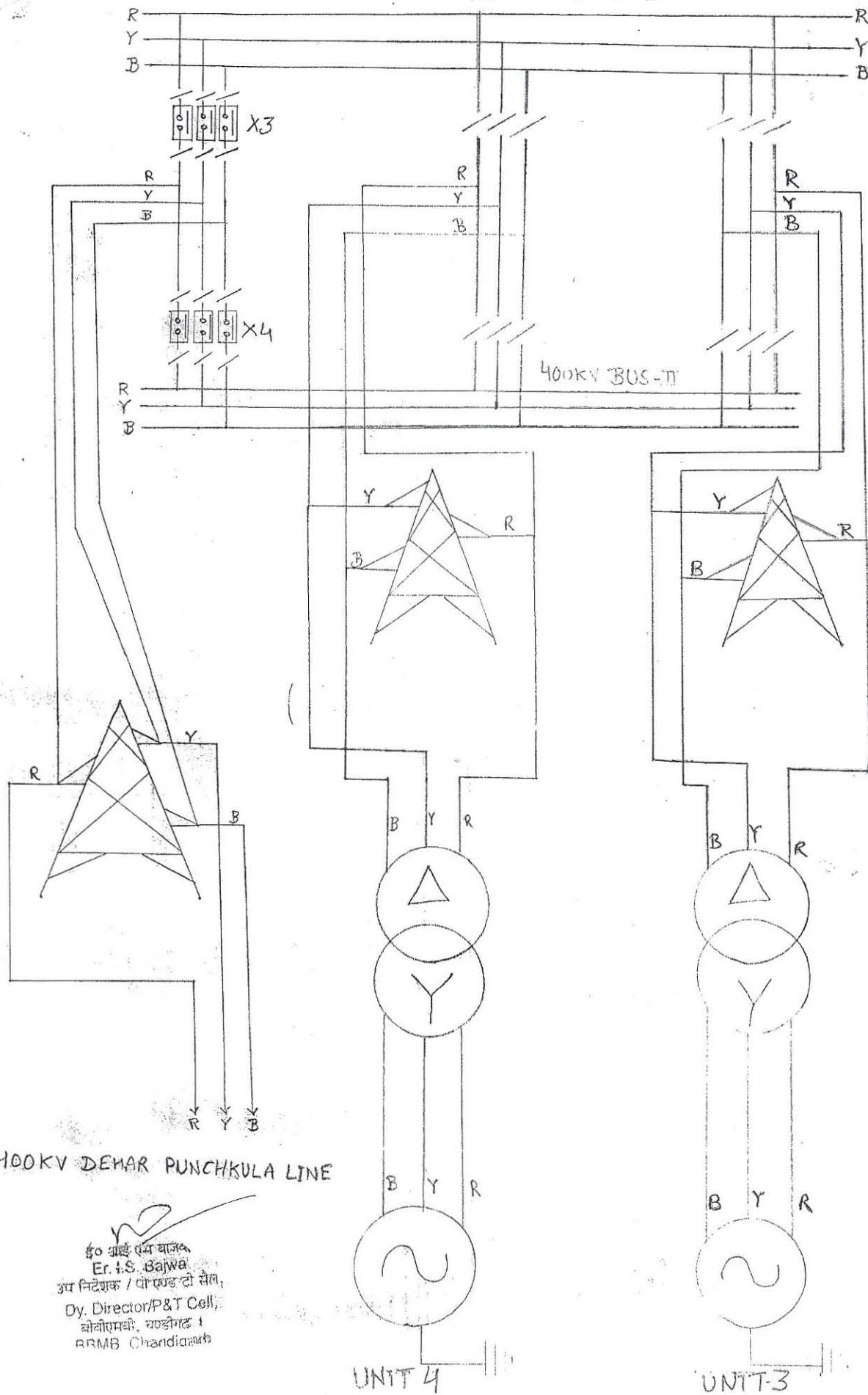
400KV DEHAR RAJPURALINE



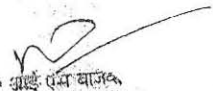
MO
DY. Director
P & T Cell, B.B.M.B. Chandigarh

UNIT-5

UNIT-6



400KV DEHAR PUNCHKULA LINE


 Er. I.S. Bajwa
 Dy. Director/P&T Cell,
 बरेली/राज्य, राउरगढ़ 1
 RRMB Chandigarh

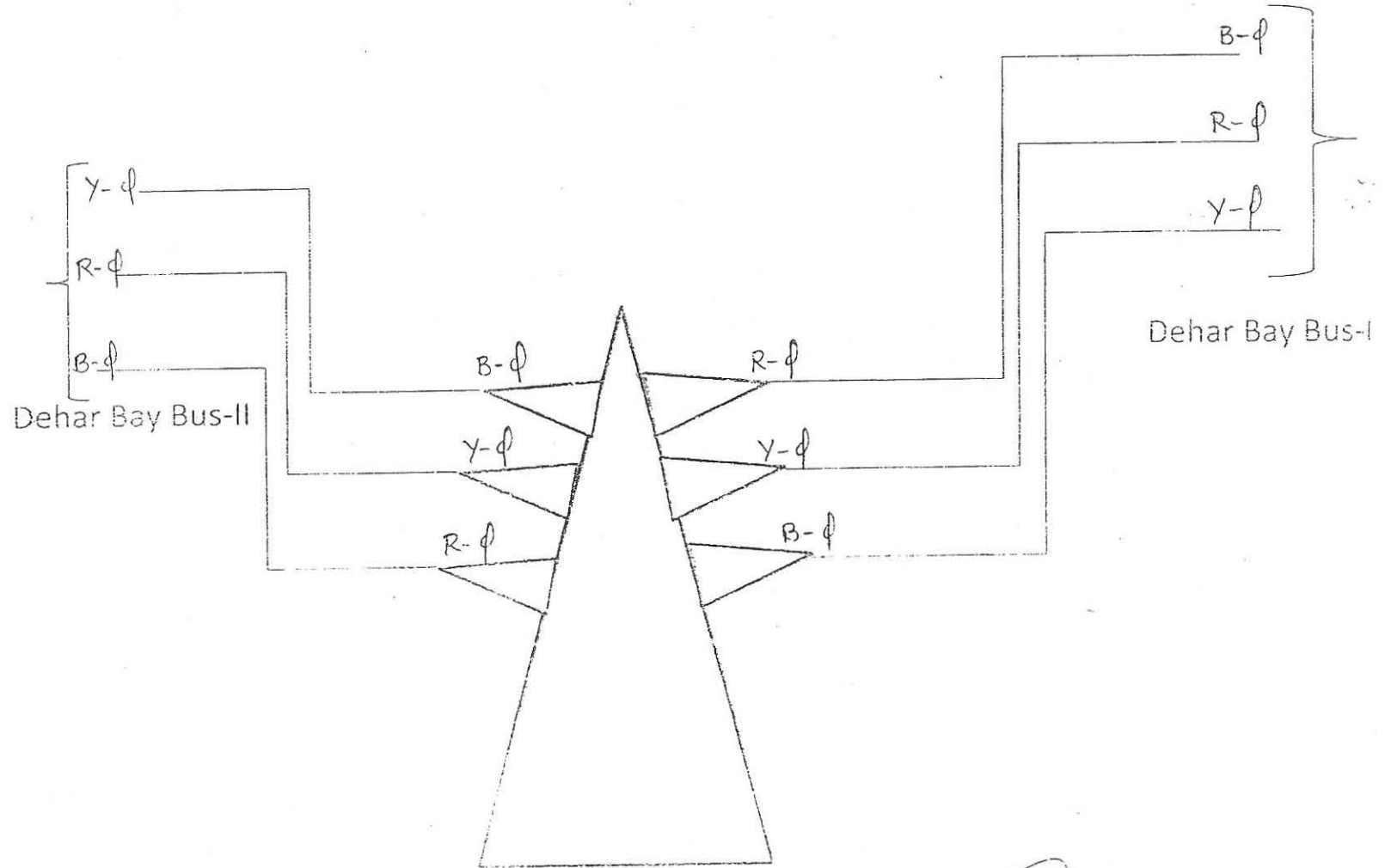
UNIT 4

UNIT-3

DEHAR PH.

Annexure I 1-5

220 KV DEHAR GANGUWAL CIRCUIT

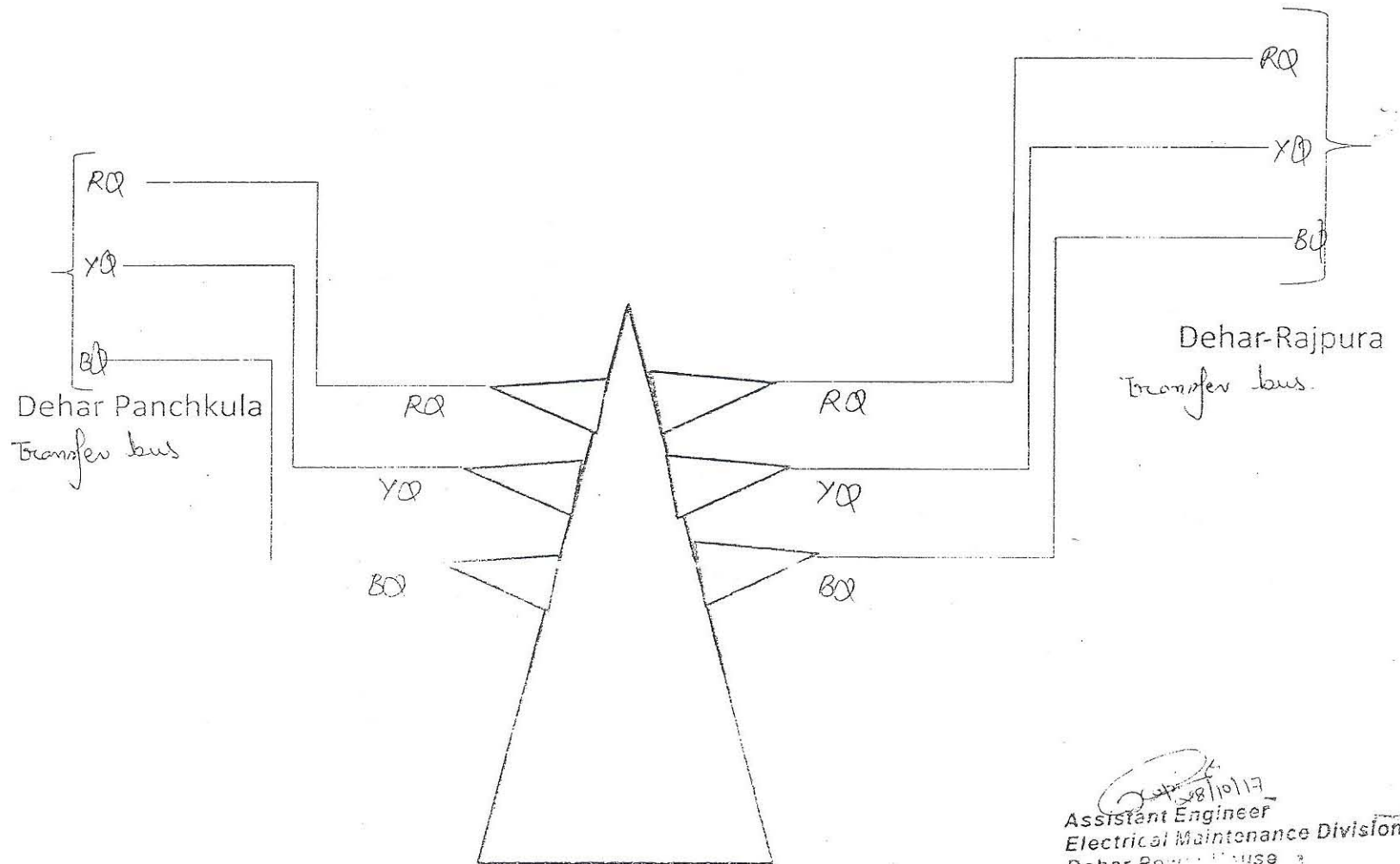


[Signature]
28/10/17
Assistant Engineer
Electrical Maintenance Division
Dehar Power House
BBMB (P.W.), Slapper

DEHAR PH.

400 kV DEHAR PANCHKULA RAJPURA

Annexure P
P-4

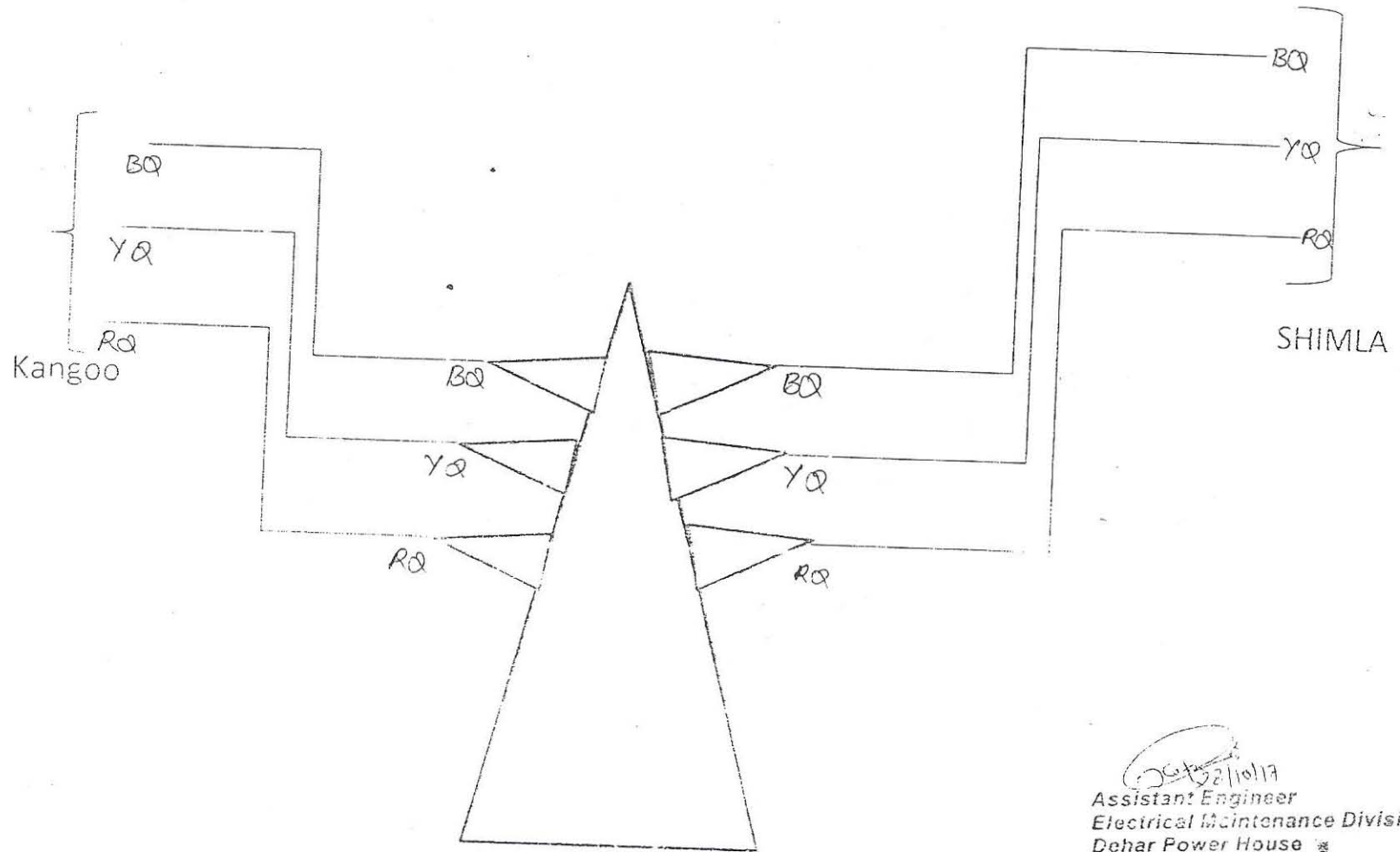


[Signature]
28/10/17
Assistant Engineer
Electrical Maintenance Division
Dehar Power House
BBMB (P) Engineer

DEHAR PH.

220 KV DEHAR KANGOO & 132 KV SHIMLA

Annexure -
P-5.



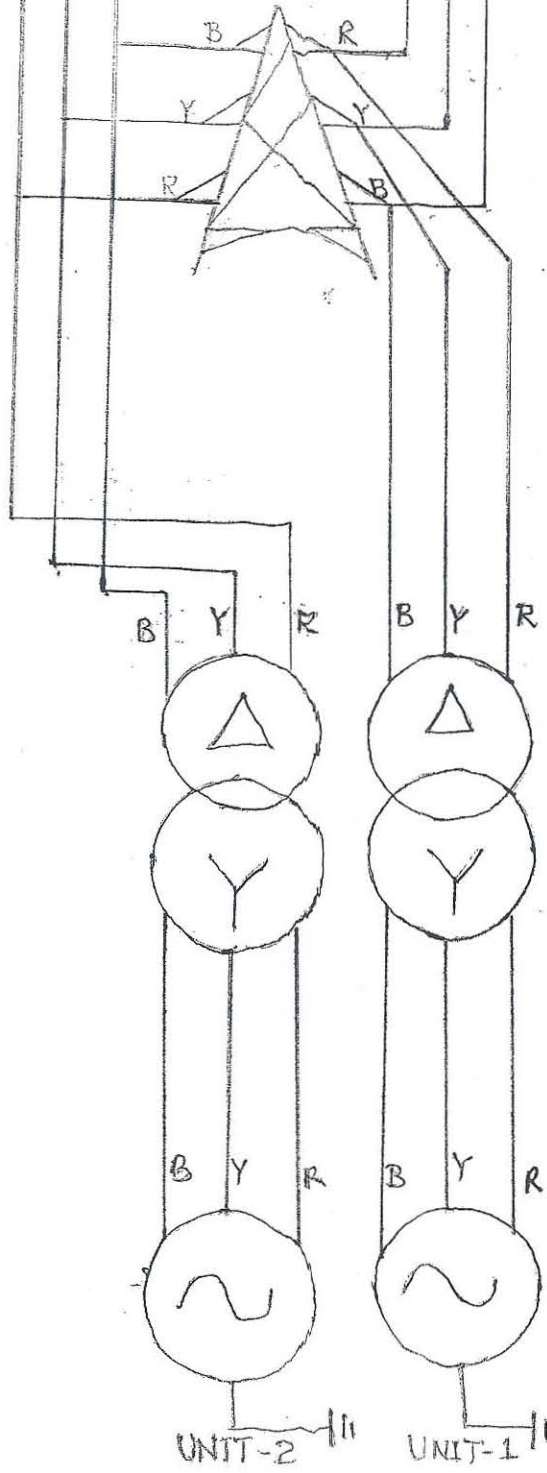
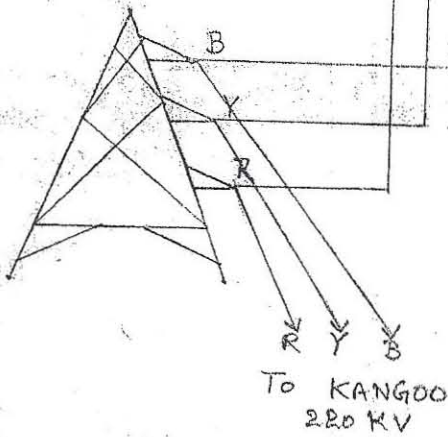
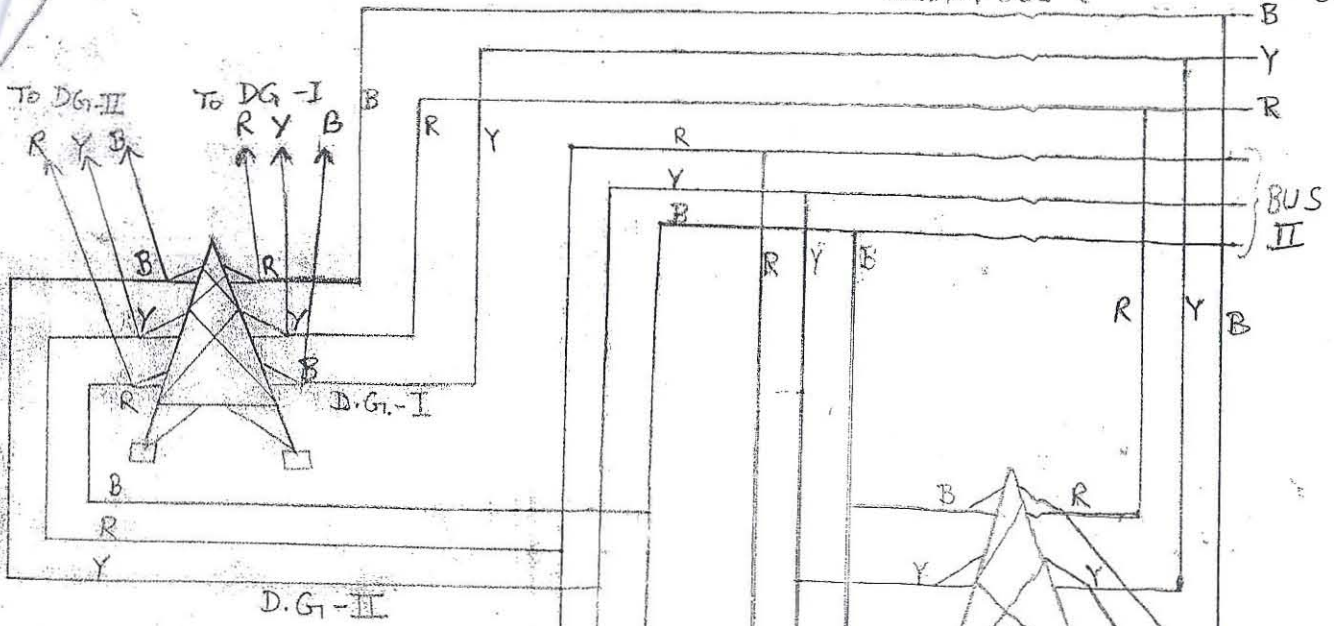
[Signature]
Assistant Engineer
Electrical Maintenance Division
Dehar Power House
BBMB (P.W.), Slapper

DEHAR PH

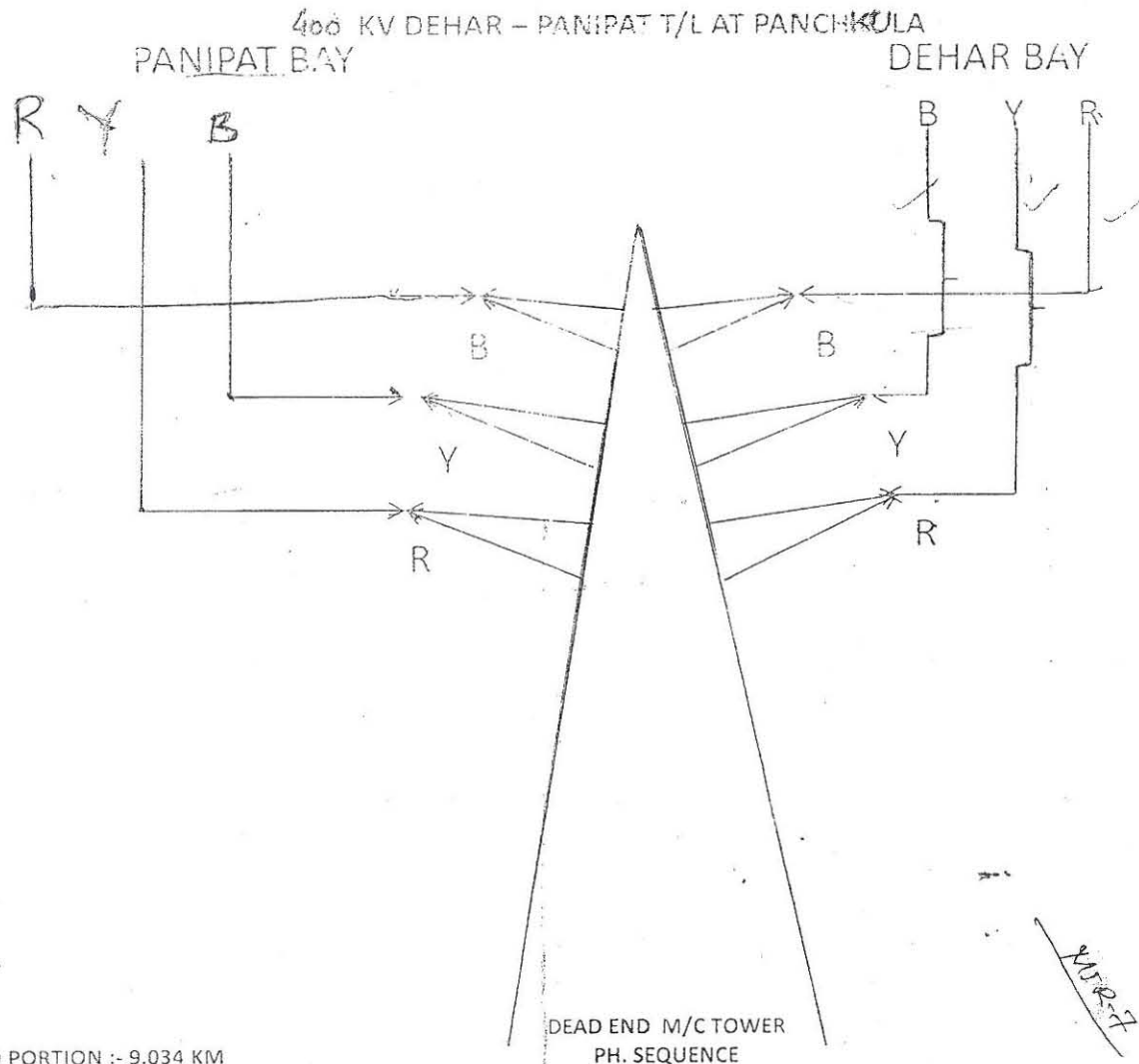
Amritsar-I

220KV BUS-I

P-6



Er. I.S. Bajwa
 Dy. Director/P&T Cell,
 Chandigarh



Er. I.S. Bajwa
Dy. Director/P&T Cell,
BOMB Chandigarh

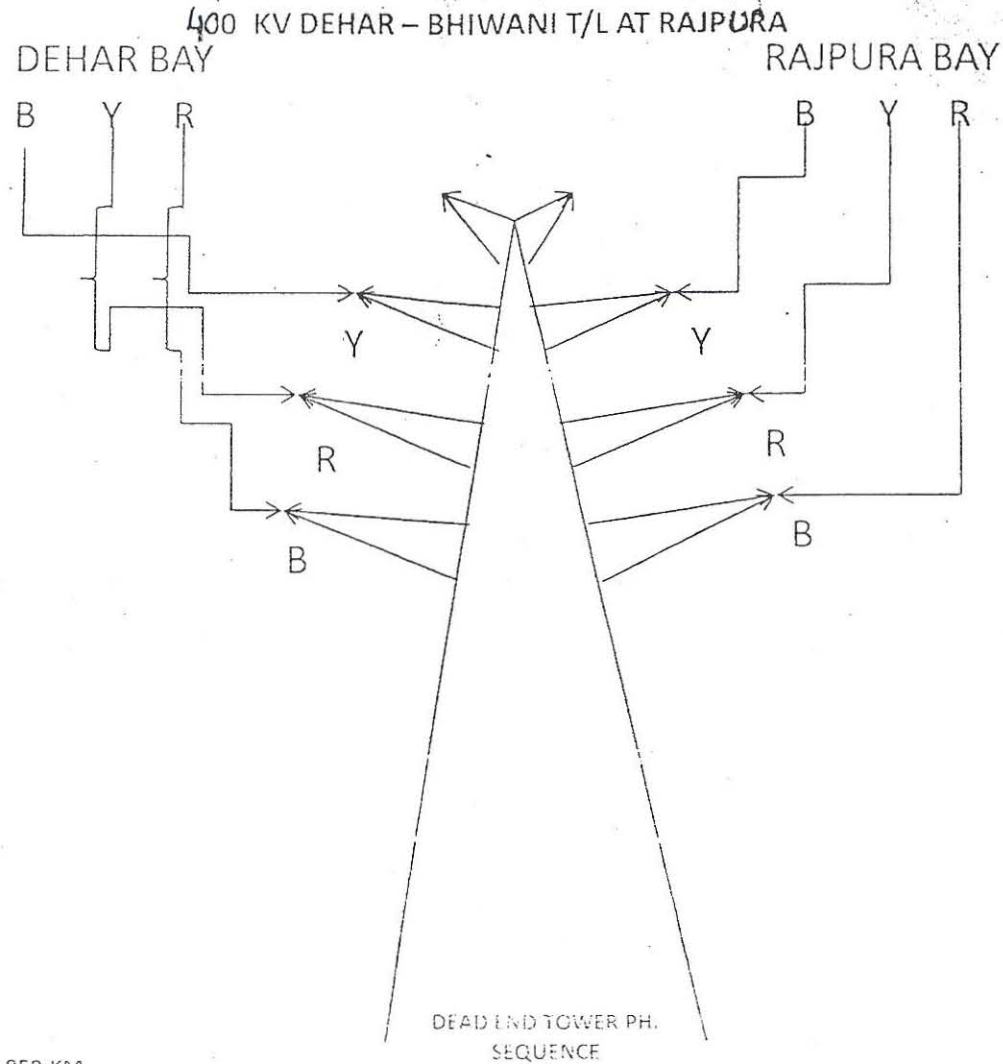
LINE LENGTH LILO PORTION :- 9.034 KM
 TOTAL LINE LENGTH OF 400 KV S/C DEHAR-PANIPAT:- 270.966 KM
 LINE LENGTH FROM DEHAR TO TOWER NO. 344 (LILO POINT) :-145.966 KM
 LINE LENGTH FROM TOWER NO. 344 TO PANIPAT:- 115.966 KM
 LINE LENGTH DEHAR-PANCHKULA:- 155 KM
 LINE LENGTH PANCHKULA-PANIPAT:- 125 KM
 DATE OF CHARGING:- 28.02.15

के. अंसरी/K. Ansari
Engineer

MUR-7

PSTCL RAJPURA

Annexure



LINE LENGTH LILO PORTION :- 14.859 KM
TOTAL LINE LENGTH OF 400 KV S/C DEHAR-BHIWANI:- 312.135 KM
LINE LENGTH FROM DEHAR TO TOWER NO. 340 (LILO POINT) :- 114.153 KM
LINE LENGTH FROM TOWER NO. 340 TO BHIWANI:- 197.982 KM
LINE LENGTH OF DEHAR-RAJPURA:- 129.012 KM
LINE LENGTH OF RAJPURA-BHIWANI:- 212.841 KM
DATE OF CHARGING:-

के. अंसारी/K. Ansari
व. अभियन्ता / Sr. Engineer

11

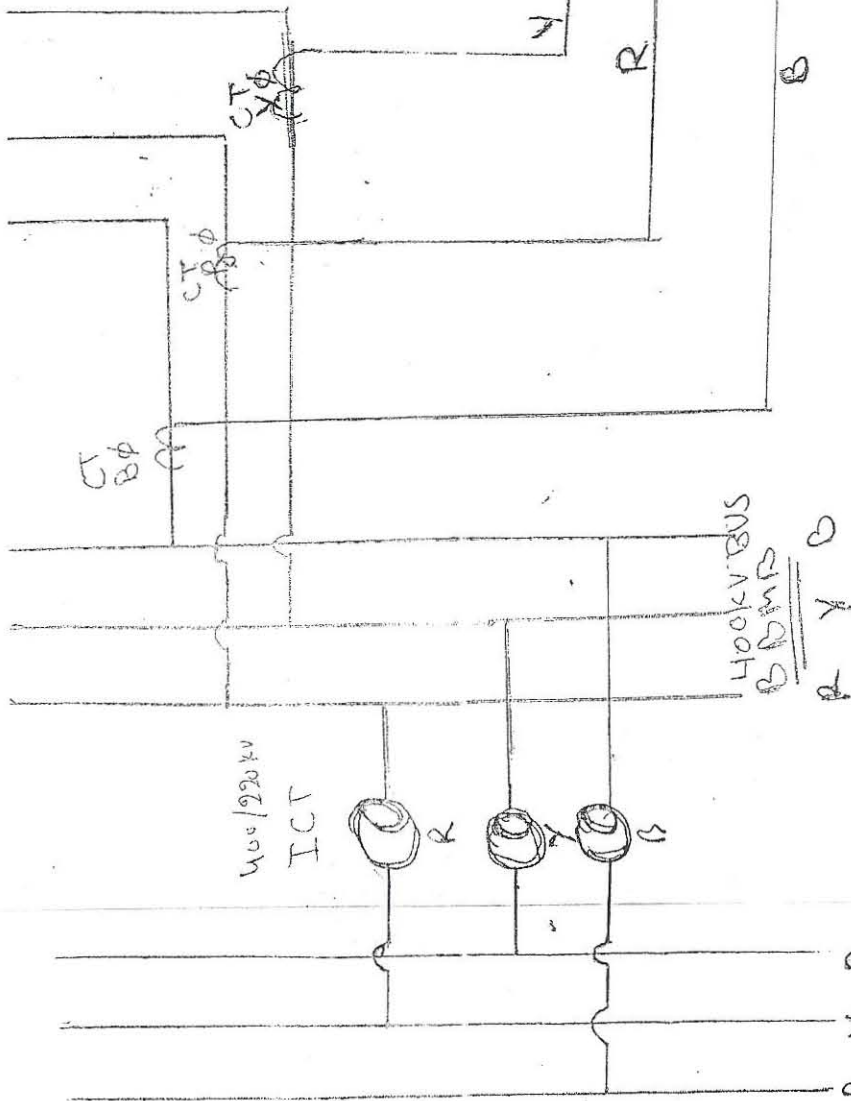
Annexure

R-Y
Y-B
B-R


400 KV

400KV PGCL

R Y B



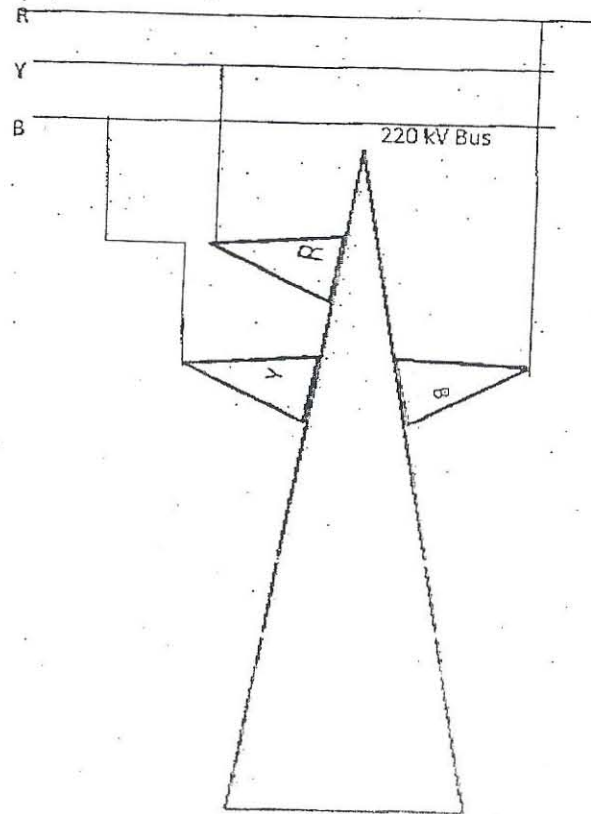
BOMB BHAWANI


 Er. I.S. Bajwa
 Dy. Director/P&T Cell,
 बीबीएम, चण्डीगढ़ ।
 BBMB, Chandigarh

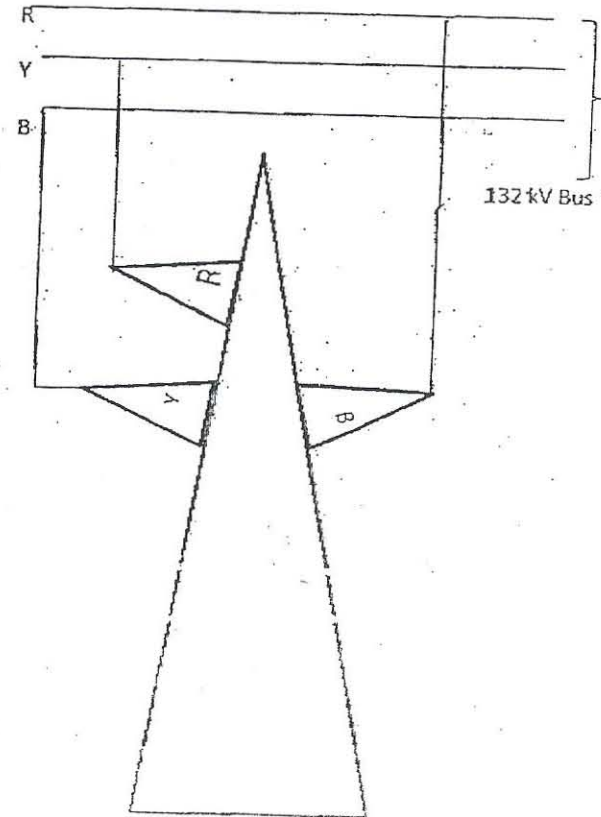
HPSEB KANGOO

Annexure

Phase nomenclature at 220 kV Kangoo Sub Station (HPSEB)



220 kV Kangoo - Dehar Line



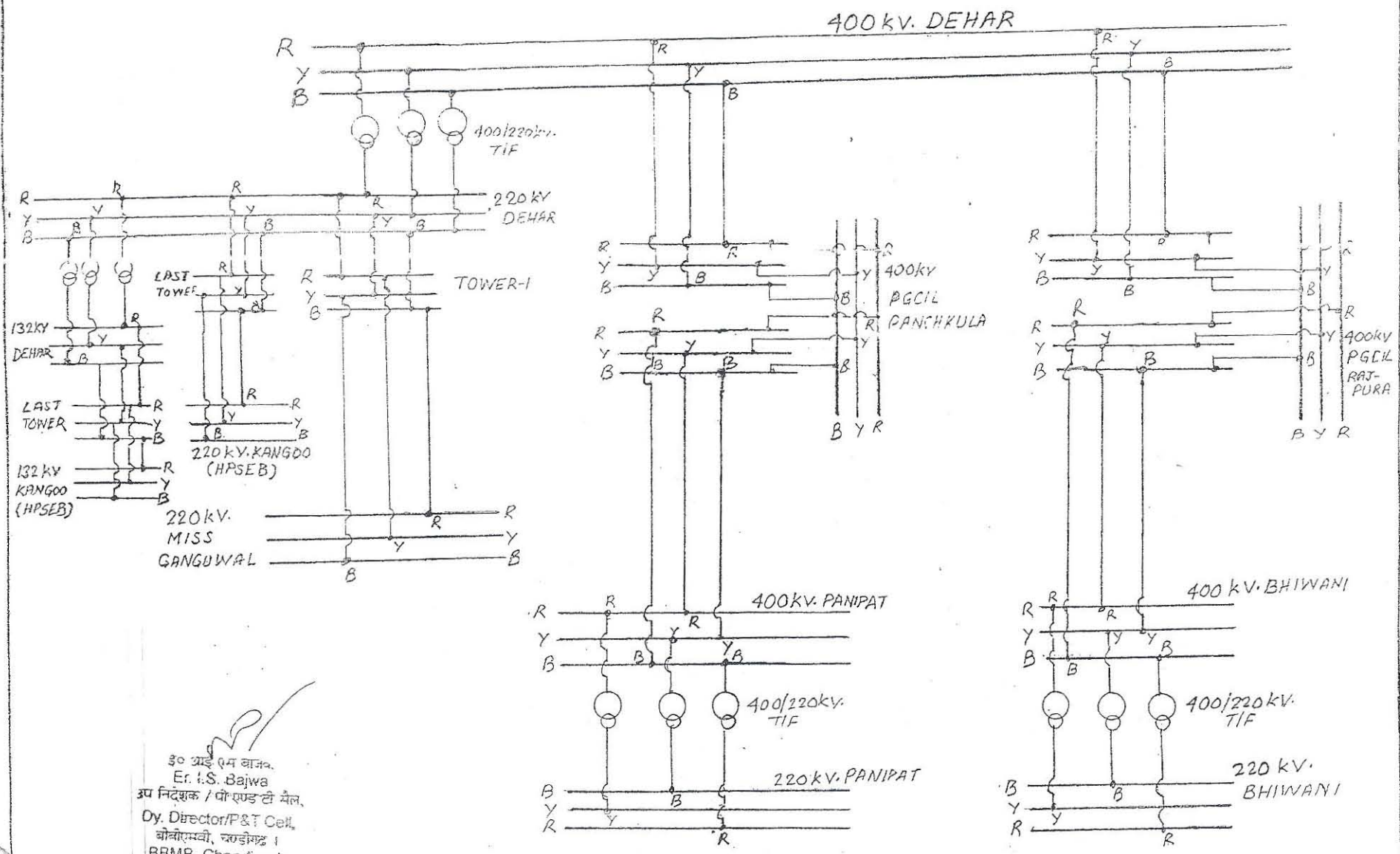
132 kV Kangoo- Dehar Line

[Signature]
27/11/17
Er. Kumar Karunesh
Assistant Engineer
Electrical Mtd. Divn.
BBMB (PW) Slepper

HPSEB
11:30 AM
11:41
11:50 AM
Fax Station: P & T CELL BBMB CHANDIGARH
0190/288632
DEHAR POWER HOUSE



PHASE SEQUENCE NOMENCLATURE RELATED TO BBMB DEHAR POWER HOUSE



इंजीनियर एम बाजवा
 Er. I.S. Bajwa
 उप निदेशक / पीएण्ड सेल,
 Dy. Director/P&T Cell,
 बोबीएमबी, चण्डीगढ़ ।
 BBMB Chandigarh

11



www.pstcl.org

PUNJAB STATE TRANSMISSION CORPORATION LIMITED.

(Regd. Office: PSEB Head Office, The Mall, Patiala)

Corporate Identity Number: U40109PB2010SGC033814

PUNJAB STATE LOAD DISPATCH CENTRE

OFFICE OF THE CHIEF ENGINEER/SLDC

SLDC Building, 220KV Grid Sub-Station, Ablowal (Patiala) – 147001.

Email: ce-sldc@pstcl.org, se-sldcop@pstcl.org

Fax : 0175-2365340 Tele : 0175-2366007

To

SE-Operation/NRPC,
18-A, Qutub Institutional Area,
Shaheed Jeet Singh Marg,
Katwaria Sarai,
New Delhi – 110016.

Memo No: 1347 /T-509/Vol.-II


Dated: -11-2019

Subject: Phase nomenclature mismatch issue with BBMB and interconnected stations.

In compliance to agenda item no. 8 of 164th OCC Meeting held on 15-10-2019 at NTPC/Dadri, the requisite information in the prescribed format, duly signed by the under signed is enclosed herewith.

This is for your information and further necessary actions please.

DA: Prescribed Format duly signed by the Chief Engineer/SLDC.


Chief Engineer/SLDC,
PSTCL, Patiala.

Format for details submission related to Phase Nomenclature mismatch

S. No.	Voltage level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid connected Station/other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
1		NIL		RYB		NIL		
2				RYB				
3				RYB				
4				RYB				
5				RYB				
6				RYB				
7				RYB				
8				RYB				
9				RYB				
10				RYB				

Contact Details of Co-ordinator of the Utility:
Er. Akshay Garg, ASE/SLDC(Op.) - 96461-18014

It is certified that there is no Phase mismatch in other stations in my Control Area considering PGCIL phase nomenclature as reference


Chief Engineer/SLDC,
PSTCL, Ablawal, Patiala.
SLDC Incharge

Format for details submission related to phase nomenclature mismatch

S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at grid connected station/other agency	phase nomenclature at local station end	Name of S/S incharge	Contact No. & mail id	Remarks (Name of circuits)
Bawana	Mandola	RYP	RYP	Sh. Sunil Sharma	999533796 e-mail: managerbawana@gmail.com	400kV Bawana-Mandola Ckt-I
		RYP	RYP			400kV Bawana-Mandola Ckt-II
Mundka	Jhajjar	RYP	RYP	Sh. Mukesh Rana	999533797 e-mail: managertikrikalan@gmail.com	400kV Mundka-Jhajjar Ckt- I
	Jhatikara					400kV Mundka-Jhatikara Ckt-I
						400kV Mundka-Jhatikara Ckt-II
Gopalpur	Mandola	RYP	RYP	Sh Sameer Barla	999533876 e-mail- gopalpurstn@gmail.com	220kV Gopalpur-Mandola Ckt-I 220kV Gopalpur-Mandola Ckt-II
Narela	Mandola	RYP	RYP	Sh. Vijay Bahadur Singh	999533811 e-mail : vbsingh2008@gmail.com	220kV Narela-Mandola Ckt-I 220kV Narela -Mandola Ckt-II
220KV Maharani Bagh (DTL)	400 KV Maharani Bagh PGCIL	RYP	RYP	Sh. Mahipal Singh	999533800 e-mail 220kvmaharanibagh@gmail.com	ICT-1
		RYP	RYP			ICT-2
		RYP	RYP			ICT-3
		RYP	RYP			ICT-4

Er. HARJWAN VYAS
Executive Director (Tech.)
Delhi Transco Limited
(A Govt. of NCT of Delhi Undertaking)
Room No. 211, 2nd Floor, SLDC Bldg.
Minto Road, New Delhi-110002

10-1-2020
Er. B.L. GUJAR
Dy. General Manager (T) P&M
E. No. 40494
DELHI TRANSCO LTD.
(A Govt. of N.C.T. of Delhi Undertaking)

S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at grid connected station/other agency	phase nomenclature at local station end	Name of S/S incharge	Contact No. & mail id	Remarks (Name of circuits)
400kV GIS S/stn. Harsh Vihar	NTPC Dadri	RYB	RYB	Sh. Anil Kumar	9999533774 e-mail- mgr400kvhr@gmail.com;	400kV Harsh Vihar-Dadri Ckt-I 400kV Harsh Vihar-Dadri Ckt-II
Mandola	South of Wazirabad	RYB	RYB	Sh. Veerpal Singh	9999533810 e-mail- sow220kv@gmail.com	220kV Mandola-SOW Ckt-1 220kV Mandola-SOW Ckt-2 220kV Mandola-SOW Ckt-3 220kV Mandola-SOW Ckt-4
400kV Bamnauli	765 kV Jhatikra	RYB	RYB	Sh. Ram Kumar, Mgr(T)	Ph. 9999533928, e-mail- managerbamnauli@gmail.com	400kV Bamnauli-Jhatikara Ckt No.1
		RYB	RYB			400kV Bamnauli-Jhatikara Ckt No.2
	400kV Tughlakabad	RYB	RYB			400kV Bamauli-Tughlakabad Ckt No.1
		RYB	RYB			400kV Bamauli-Tughlakabad Ckt No.2
220kV Tughlakabad	400kV Tughlakabad	RYB	RYB	Sh. R.P.Chaurasia	Ph.9999533913 e-mail- mgr.mehrauli@gmail.com	ICT-1
		RYB	RYB			ICT-2
		RYB	RYB			ICT-3
		RYB	RYB			ICT-4

Er. HARJIVAN VYAS
Executive Director (Tech.)
Delhi Transco Limited
(A Govt. of NCT of Delhi Undertaking)
Room No. 211, 2nd Floor, SLDC Bldg.
Minto Road, New Delhi-110002

Er. B.L. GUJAR
Dy. General Manager (T) P&M
E. No. 40494
DELHI TRANSCO LTD.
(A Govt. of N.C.T. of Delhi Undertaking)

105-2510



RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LTD.

[Corporate Identity Number (CIN): L40109RJ2000SGC016485]

GSTIN 08AABCR8312A1ZT

Regd. Office: Vidyut Bhawan, Jyoti Nagar, Jaipur - 302005

OFFICE OF THE SUPERINTENDING ENGINEER (SOLD)

SLDC BUILDING, HEERAPURA, JAIPUR - 302024

Tele - 0141-2250403, Email: se.sold@rvpn.co.in

No. RVPN/SE (SOLD) /XEN-I (SOLD) /F.-OCC /D. 910

Dated: 24 OCT 2019

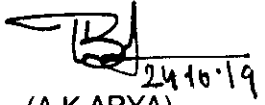
The General Manager, NRLDC,
18A, Shaheed Jeet Singh Marg,
Katwaria Sarai, New Delhi -110016.

Sub: Phase Nomenclature mismatch issue with interconnected stations.

On the above captioned subject, please refer 164th OCC meeting agenda point No.8 and find enclosed herewith the detail of Phase Nomenclature mismatch at RVPN substations w.r.t. the connected Powergrid Substations.

This is for your information.

Encl :- As above


(A.K.ARYA)
Superintending Engineer (SOLD)

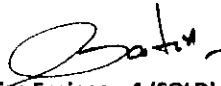
Copy submitted to the following for information and necessary action:-

1. The Chief Engineer (LD), RVPNL, Heerapura.
2. The Member Secretary, NRPC, 18A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi -110016.

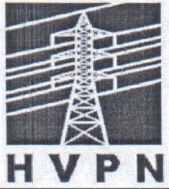

Superintending Engineer (SOLD)

Phase nomenclature mismatch at RVPN Substations w.r.t. connected Powergrid lines

S. No.	Name of Circle	Voltage level (kV)	RVPN Substation	Adjacent Power Grid Substation	Phase nomenclature at Power Grid substation	Phase nomenclature at RVPN Grid substation	Contact detail of RVPN Substation Incharge			Remarks
							Name	Contact Number	Email Id	
1	SE(T&C) AJMER	400	AJMER	AJMER (POWER GRID)	R-Y-B	B-R-Y	S.K. DHAWAN	9413313215	xen.400ajmer@rvpn.co.in	This Mismatch is for both the ckts of 400kV Ajmer-Ajmer(PG)- I & II
2	SE(T&C) RATANGARH	400	Ratangarh	PGCIL Sikar	B-R-Y	R-Y-B	Manoj Kumar	9413382593	xen.400.ratangarh@rvpn.co.in	This Mismatch is for both the ckts of 400kV Ratangarh - Sikar(PG)- I & II


Executive Engineer -1 (SOLD)
RVPN, Heerapura


Superintending Engineer (SOLD)
RVPN, Heerapura



HARYANA VIDYUT PRASARAN NIGAM LTD.

Regd. Office Shakti Bhawan, Secor-6, Panchkula.

Corporate Identity Number: **U4010HR1997SGC033683**

Website: www.hvsn.gov.in, Email ID: -cesocomml@hvsn.gov.in

Phone No. 0172 – 2560547

To

S.E.(Operation)/NRPC
NRPC Sectt., New Delhi

Memo No. Ch- 114 /PC-4/Vol- XIV/SLDC/OP

Dated: 22 .01.2020

Subject: Phase nomenclature mismatch issue with BBMB and interconnected stations – agenda point no. 7 of 167th OCC meeting of NRPC.


The subject cited matter was an agenda point in the 167th OCC meeting held on 17.01.2020 at NRPC Sectt., New Delhi.

The matter was also deliberated in the previous OCC meetings, wherein it was decided that all the concerned STUs/SLDCs shall certify about phase nomenclature mismatch of their system considering PGCIL phase nomenclature as reference.

In the 164th OCC meeting, all utilities were advised to submit the desired information in the prescribed format duly signed by the respective Chief Engineer, SLDC.

In view of above it is intimated that there is no Phase Nomenclature mismatch issue with BBMB and interconnected stations in respect of HVPNL.

This is for your information and further necessary action.


Chief Engineer/ SO & Commercial,
HVPNL, Panchkula

CC:-

1. SPS to Director/Technical, HVPNL for the kind information of Director/Technical, HVPNL
2. SPS to Director/Projects, HVPNL for the kind information of Director/Projects, HVPNL

उत्तर प्रदेश राज्य भारप्रेषण केन्द्र

उपरोक्त ट्रांसमिशन कारपोरेशन लि०

(उत्तर प्रदेश सरकार का उपक्रम)

यूपीपीएसटीएलडीसी परिसर, विभूति खण्ड- II

गोमती नगर, लखनऊ-226010

दूरभाष:

ई-मेल: system.uppcl@gmail.com



U.P. State Load Despatch Centre

U.P. Power Transmission Corporation Ltd.

(A U.P. Govt. Undertaking)

UPSLDC Complex, Vibhuti Khand – II

Gomti Nagar, Lucknow- 226010

Phone:

E-mail: system.uppcl@gmail.com

No: -5202 /SE(R&A)/EE-II/ OCC

Dated: 25/11 -2019

Superintending Engineer (Operations),

NRPC, 18-A SJSS Marg,

Katwaria Sarai, New Delhi.

Subject: - Phase mismatch nomenclature.

Sir,

As discussed in 165th NRPC, OCC meeting on dated 15.11.2019 report of phase mismatch nomenclature received from Director (Operation), UPPTCL is enclosed after counter signed by Chief Engineer (UPSLDC) for your kind information and necessary action.

Encl: As above

(Zahir Ahmad)

Superintending Engineer (R&A)

No: - /SE(R&A)/EE-II/OCC

Dated: -2019

Copy forwarded to following for information and necessary action:-

1. Director, UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.
2. Chief Engineer (PSO/C&S), UPSLDC, Vibhuti Khand – II, Gomti Nagar, Lucknow.

(Zahir Ahmad)

Superintending Engineer (R&A)

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Regarding phase mismatch.

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Inbox 84

Starred

Director(Operat) UPPTCL

Snoozed

Please find enclosed herewith the phase mismatch status of all transmission zones

Important



system.uppcl <system.uppcl@gmail.com>
to Executive, sera

Sent 4:43 PM

to Executive, sera

Drafts

Categories

Social 10

Finance 5

Regards
Uttar Pradesh State Load Despatch Centre
UPSLDC Complex, Vibhuti Khand-II,
Gomti Nagar, Lucknow-226010
Ph.08004940917, 08004940914

Airtel

ALDS E-MAIL

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cets@upptcl.org 3

data

Intraday exchange NOC

Junk E-mail

KSK MAHANADI

NPCL software

Personal

Reports

Sent Items

9 Attachments

- Phase nomenclatur. TC Phase Nomencl.
- TSW Agra.xlsx ETC, E

Handwritten notes:
9c
[Signature]

Reply Reply all Forward

TNE

कार्यालय मुख्य अभियन्ता घारेषण क्षेत्र (उत्तर पूर्व)
 उ०प्र० पावर ट्रान्समिशन कारपोरेशन लि०
 132 के०वी० उपकेन्द्र, मोहददीपुर-गोरखपुर
 दूरभाष : 0551-2204246



OFFICE OF THE CHIEF ENGINEER
 TRANSMISSION AREA (NORTH EAST)
 U.P. POWER TRANSMISSION CORPORATION LTD.
 132 KV S/S MOHADDIPUR-GORAKHPUR
 TEL NO. 0551-2204246
 E-Mail : cetne@upptcl.org

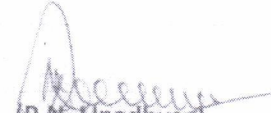
Ltr.No. 2404 CE(TNE)/

Date 14-11-2019

Sub: Regarding details submission related to Phase nomenclature mismatch.

Director (Operation)
 U.P. Power Transmission Corporation Ltd.
 10th Floor, Shakti Bhawan (Extn.)
 14-Ashok Marg, Lucknow

In refrence to Letter No. 2627/Dir(Op)/ dt. 17.10.2019 on the subject cited above,
 there is no Phase nomenclature mismatch reported at various 400 KV S/S in this Zone.


 (P.N. Upadhyay)
 Chief Engineer (TNE)

9c


FORMAT FOR DETAILS SUBMISSION RELATED TO PHASE NOMENCLATURE MISMATCH

Zone: TSW Agra

As on 14.11.2019

Sr. No.	Voltage Level (in kV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Satation/ other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
ETC Agra								
1	400	400 kV S/S Pilipokhar Agra	765 kV Fatehabad	Ckt-1 M1- ABC M2- ABC Ckt-2 M1- ABC M2- ABC	Ckt-1 M1- RYB M2- RYB Ckt-2 M1- RYB M2- RYB	Er. Rajneesh Gupta, EE	9458096417 ee400agra@upptcl.org	
2	400		765 kV Unnao	M1- RYB M2- RYB	M1- RYB M2- RYB			
3	400		765 kV PGCIL Agra	M1- RYB M2- RYB	M1- RYB M2- RYB			
1	765	765 KV S/S Fatehabad, Agra	Lalitpur Power Generation Company	M1- RYB M2- ABC	ABC	Er. Bhikam Singh, EE	Mob : 7902115051 eee765ftd@gmail.com eeetd76Sagra@upptcl.org	
2	400		400 KV S/S Pilipokhar	CKT-1 M1- ABC M2- RYB CKT-2 RYB	ABC			
3	400		400 KV S/S Manth Mathura	ABC	ABC			
4	400		400 KV S/S PowerGrid Agra	M1-RYB M2-ABC	ABC			
4	400		400 KV S/S Agra South	ABC	ABC			

ETC Aligarh




1	220	220 KV Atrauli	Narora Automic Power	R/YB	P/YB	Er. Rajeev Kumar Yadav	9458096487 & eeetdaligr2@upptcl.org
	220	220 KV Atrauli	Harduaganj TPS	R/YB	R/YB		
2	220	220 KV Boner	Harduaganj TPS	R/YB	R/YB	Er. Girish Chandra Singh	9458096501 & eeetdaligr1@upptcl.org
	132	132 KV Sarsol	Harduaganj TPS	R/YB	R/YB		
3	220	220 KV Mainpuri	765 KV S/s, Mainpuri	R/YB	R/YB	Er. R.K. Banshi	9458096486 & eeetdmnpri@upptcl.org
	220	220 KV Mainpuri	400 KV S/s, Bhauti,	R/YB	R/YB		
4	400	400 KV Aligarh	765 KV S/s, Mainpuri	R/YB	R/YB	Er. Banshi Lal	9458096489 & ee400kvaligr@upptcl.org
	400	400 KV Aligarh	400 KV S/s,	R/YB	R/YB		

ETC Mathura

A 400 KV S/S Division Manth (Mathura)								
1	400 KV	400 KV S/S Manth (Mathura)	765 KV S/S Fatehabad	ABC	R/YB	Er. Rakesh Prasad, EE, 400 KV S/S Manth (Mathura)	ee400manth@upptcl.org (Mob. 7055502581)	R/YB phase sequence is used in Tripping report (Send to Dispatch centre by 400 KV S/S Manth, Mathura for charging code)
		400 KV Fatehabad-Mathura Line-1						
2	400 KV	400 KV Fatehabad-Mathura Line-2	765 KV S/S Fatehabad	ABC	R/YB			
3	400 KV	400 KV Mathura-Muradnagar Line	400 KV S/S Muradnagar-II	ABC	R/YB			
4	220 KV	220 KV Manth-Gokul Line	220 KV S/S Gokul	L1,L2,L3	R/YB			
5	220 KV	220 KV (400KV Mathura-220	220 KV S/S Manth	R/YB	R/YB			
6	220 KV	400 KV Manth-Chhata Line-1	220 KV S/S Chhata	R/YB	R/YB			
7	220 KV	400 KV Manth-Chhata Line-2	220 KV S/S Chhata	R/YB	R/YB			
B 400 KV GIS S/S Division Agra South								
1	400	400 KV GIS S/S Agra South	65/400 KV S/S Fatehaba	R/YB	ABC	anendra Singh	400kvssdagrasouth@gmail.com (Mob. 8874010271)	
		400 KV Fatehabad Ckt-1						
2	400	400 KV Fatehabad Ckt-2	65/400 KV S/S Fatehaba	R/YB	ABC			
C Electricity Transmission Division, Mathura								
1	220	220 KV S/S Chhata	132 KV S/S Kosikalan,	R/YB	R/YB	Er. Rajesh Tomer, EE, ETD, Mathura	eeetdmthra@upptcl.org (Mob. No. 8874204426)	
2	220	220 KV S/S Gokul	132 KV S/S Mathura-II,	R/YB	R/YB			
3	220	220 KV S/S Manth	132 KV S/S Bamouli,	R/YB	R/YB			
4	132	132 KV S/S Aurangabad	-	R/YB	R/YB			
5	132	132 KV S/S Mathura-II	-	R/YB	R/YB			
6	132	132 KV S/S Vrindavan	-	R/YB	R/YB			
7	132	132 KV S/S Kosikalan	-	R/YB	R/YB			
8	132	132 KV S/S Manth	-	R/YB	R/YB			



D Electricity Transmission Division, Hathras								
1	132	132 KV S/S Bamouli				SDO Meetai	9458096702	-
a		132 KV Meetai Line	220 KV Meetai	RYB	R'YB			
b		132 KV Manth Line	220 KV Manth	RYB	RYB			
2	132	132 KV S/S Sasni						
a		132 KV Meetai-Sasni Line	220 KV Meetai	RYB	RYB			
b		132 KV Odpura-Sasni Line	132 KV Odpura	RYB	ABC			
c		132 KV Sasni-Beenupur	132 KV Aligarh-III	RYB	ABC			
3	220	220 KV S/S Meetai						
a		220 KV Meetai-Agra Line	400 KV Agra	RYB	RYB			
b		220 KV Meetai-Khair Line	220 KV Khair	RYB	RYB			
c		220 KV Meetai-Manth Line	220 KV Manth	RYB	RYB			
4	132	220 KV S/S Meetai						
a		132 KV Meetai -Odpure-I Line	132 KV Hathras-I	RYB	RYB			
b		132 KV Meetai -Odpure-II Line	132 KV Hathras-II	RYB	RYB			
c		132 KV Meetai-Sadabad Line	132 KV Sadabad	RYB	RYB			
d		132 KV Meetai-Iglas Line	132 KV Iglas	RYB	RYB			
e		132 KV Meetai-Sasni Line	132 KV Sasni	RYB	RYB			
f		132 KV Meetai -Bamouli Line	132 KV Bamouli	RYB	RYB			
g		132 KV Meetai-Hasayan Line	132 KV Hasayan	RYB	RYB			
h		132 KV Meetai-Biruni Line	DFCC-I	RYB	ABC			
i		132 KV Meetai-Biruni Line	DFCC-II	RYB	ABC			
5	132	132 KV S/S Odpura				SDO Odpura	9458096703	-
a		132 KV Meetai-Odpura-I Line	220 KV Meetai	RYB	RyB			
b		132 KV Meetai-Odpura-II Line	220 KV Meetai	RYB	RYB			
c		132 KV Sasni -Odpura	132 KV Sasni	RYB	RYB			
6	132	132 KV S/S Sadabad						
a		132 KV Sadabad-Meetai Line	220 KV Meetai	RYB	RYB			
b		132 KV Sadabad-Agra Line	400 KV Agra	RYB	RYB			
ETC Kanpur								
.....Nil.....								


 9/10



TSC

U.P. POWER TRANSMISSION CORPORATION LIMITED

उपरो पावर ट्रांसमिशन कारपोरेशन लिमिटेड
(उपरो सरकार का उपक्रम)Office Of The
Executive Engineer
Electricity Test. & Comm. Div.
132kv Sub Station, Hansari, Jhansi
Mobile:- 9458096639
E-mail:- eetnczh@upptcl.org

GST No. :- 09AAACU8823E1Z9

कार्यालय
अधिशाली अभियन्ता
विद्युत परीक्षण एवं परिचालन खण्ड
132 के०वी० सब-स्टेशन हंसारी, झाँसी
दूरभाष :- 9458096639
ई-मेल :- eetnczh@upptcl.org

No- 832 ET&CDJ/

Date:-...05/11/19....

Director (OP)
11th floor Shakti Bhawan Ext.,
14th Ashok Marg,
Lucknow- 226001**Subject:- Regarding details submission related to Phase nomenclature mismatch.**

In reference your letter No. 2627/Dir(O)/OCC Dt. 17.10.2019 On the above cited subject. In this regard it is certify that there is no phase mismatch in sub station in my control area.

It is for your kind information.

(ARVIND KUMAR)
EXECUTIVE ENGINEER

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or
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CamScanner

ETC-BANDA

FORMAT FOR DETAILS SUBMISSION RELATED TO PHASE NOMENCLATURE MISMATCH

SL.No.	voltage level (in KV)	S/S name	Adjacent Grid Connected S/S	Phase nomenclature at Grid connected station/other Agency	Phase nomenclature at Local station end.	Name of S/S incharge	Contact Number & mail ID	Remarks
1	220	Banda	220 KV Fatehpur	RYB	RYB	Sri Raju Kumar	8840656739	
2	220	Banda	400 KV Banda	RYB	RYB	Sri Dharmendra Kumar	7310433694	
3	220	Banda	220 KV Banda	RYB	RYB	Sri Santosh tiwari	9838345884	
4	132	Banda	220 KV Banda	RYB	RYB	Sri Asaram	9838345884	
5	132	Kabari	220 KV Banda	RYB	RYB	Sri Rahul kumar	8874205884	
6	132	Bahrua sumerpu	220 KV Banda	RYB	RYB	Sri Arun Kumar	8874204569	
7	132	Augasi	220 KV Banda	RYB	RYB	Sri Umesh kumar	9838345884	
8	132	Karvi	220 KV Banda	RYB	RYB	Sri Vivek tiwar	9838345884	
9	132	Karvi	220 KV Pahadi	RYB	RYB	Sri Raj kumar	7310434236	
10	132	Karvi	220 KV Sirathu	RYB	RYB	Sri vikash Kumar	8004914584	
11	132	Mau	220 KV Pahadi	RYB	RYB	Sri Sitaram	9838345884	
12	132	Atarra	220 KV Pahadi	RYB	RYB	Sri Dharmendra Kumar	7310433694	
13	220	Pahadi	400 KV Banda	RYB	RYB	Sri Arun Kumar	8874204569	
14	220	Pahadi	400 KV Rewa Road	RYB	RYB	Sri Rahul kumar	8874205884	

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2019
Superintending Engineer
Elect. Transmission Circle
BANDA

TW

कार्यालय मुख्य अभियन्ता (पारेषण पश्चिम)
उ० प्र० पावर ट्रांसमिशन कारपोरेशन लि०
"पारेषण भवन" 130-डी, विक्टोरिया पार्क,
मेरठ-250 001.
दूरभाष-0121-2668734



OFFICE OF THE CHIEF ENGINEER
(TRANSMISSION WEST)
"Pareshan Bhawan"
130-D, Victoria Park, Meerut-250 001.
E-mail - cetw@upptcl.org.

पत्रांक/No. 9961-मु०अ०(CE)/पारे०प० (TW)/मेरठ(MT)/OCC

Dated/दिनांक-01-10-19

Subject :- Regarding Details Submission Related to Phase Nomenclature Mismatch.

✓ Director (Operation)
U.P. Power Transmission Corporation Ltd.,
Shakti Bhawan, 14-Ashok Marg,
Lucknow.

Kindly refer your office letter No. 2627/Dir(O)/Railways dated 17th October, 2019 regarding above noted subject.

It is to bring into your kind notice that there is no phase nomenclature mismatch from any transmission lines as intimated by various Transmission Circles under Transmission West Zone. The desired information may be treated as NIL.

(A.K. AGRAWAL)
CHIEF ENGINEER (TW)

9
M
M
M



TSE

setncald@gmail.com
setncalbd@upptcl.org

OFFICE OF THE SUPERINTENDING ENGINEER
कार्यालय अधीक्षण अभियन्ता
ELECTRICITY TEST & COMMISSIONING CIRCLE

विद्युत परीक्षण एवं परिचालन मंडल

U. P. POWER TRANSMISSION CORPORATION LIMITED

उ. प्र. पावर ट्रांसमिशन कारपोरेशन लिमिटेड

132KV MINTO PARK SUBSTATION CAMPUS, BAIRHANA, PRAYGRAJ-211003

132केवी0 मिनटो पार्क उपस्थान परिसर बैरहना, प्रयागराज -211003

No	/ET&CCPr/ Protection	Date	2019
पत्रांक-	/वि0प0एवंपम0प्र0/प्रोटेक्शन	दिनांक-	2019
विषय-	Phase nomenclature mismatch के सम्बन्ध में।		

अधिशाली अभियन्ता,
विद्युत परीक्षण एवं परिचालन खण्ड,
उ0प्र0पावर ट्रांसमिशन कारपोरेशन लिमिटेड,
प्रयागराज- प्रथम एवं द्वितीय, वाराणसी, मिर्जापुर, ओबरा

कृपया उपरोक्त विषयक निदेशक (आपरेशन) उ0प्र0पा0ट्रा0का0लि0 लखनऊ के पत्रांक-2509/Dir(O)/OCC दिनांक-04.10.2019 एवं मुख्य अभियन्ता (पा0द0पू0) के पत्र संख्या-521 दिनांक-04.10.2019 जिसे इस कार्यालय के ई-मेल द्वारा दिनांक-05.10.2019 को अग्रसारित किया गया है, का अवलोकन करें। उक्त पत्र द्वारा मांगी गई Phase nomenclature mismatch से सम्बन्धित सूचना अभी तक इस कार्यालय को उपलब्ध नहीं हो पाई है।

अतः आप निर्देशित है कि उक्त सूचना अतिलम्ब इस कार्यालय के ई-मेल setncalbd@upptcl.org पर उपलब्ध कराना सुनिश्चित करें ताकि उच्चाधिकारियों को प्रेषित किया जा सके।

(मो0वारिस खान)

अधीक्षण अभियन्ता

दिनांक-16-10-2019

पत्रांक- 972 /वि0प0एवंपम0प्र0/प्रोटेक्शन

प्रतिलिपि निम्न लिखित को सूचनार्थ व अवश्यक कार्यवाही हेतु प्रेषित

- 1 मुख्य अभियन्ता (पा0द0पू0)उ0प्र0पावर ट्रांसमिशन कारपोरेशन लिमिटेड,-57 जार्ज टाउन प्रयागराज।
- 2 निदेशक (आपरेशन): उ0प्र0पा0ट्रा0का0लि0 शक्ति भवन लखनऊ।

16-10-19

(मो0वारिस खान)

अधीक्षण अभियन्ता

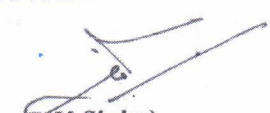
Handwritten signature and initials in blue ink.

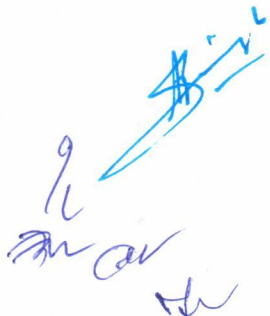
DETAILS OF PHASE NOMENCLAURE MISMATCH UNDER TSE, PRAYAGRAJ

Reference No - L.N. - 2627/Dir(Op)/OCC dt 17.10.2019 of Director (Operation), UPPTCL, Lucknow

S.N	Voltage Level (KV)	S/s Name	Adjacent Grid Connected S/s	Phase Nomenclature at Grid Connected Satation/ other Agency	Phase Nomenclature at Local Satation	Name of S/s Incharge	Contact Number & Mail ID
1	400	400 KV S/s Sarnath	765 KV S/s Thathra (PGCIL)	RYB	RYB	Er. Anshuman Singh, EE	9415311055
			400 KV Anpara	RYB	RYB		
			400 KV Azamgarh	RYB	RYB		
2	220	220 KV S/s Phulpur	220 KV S/s Sarangapur (PGCIL)	RYB	RYB	Er. S.K. Maurya, EE	9415311007
3	220	220 KV S/s Jhunsi	220 KV S/s Sarangapur (PGCIL)	RYB	RYB		
4.	132	132 KV S/s Bina	132 KV S/s Morwan (MP)	RYB	RYB	Er. Ashok, EE	9415311063
5	132	132 KV S/s Robertsganj	132 KV Pipri TPS	RYB	RYB		
6	132	132 KV S/s Dalla	132 KV Obra TPS	RYB	RYB		
7	220	220 KV S/s Sahupuri	220 KV S/s Pusauli (PGCIL)	RYB	RYB	Er. M.K. Srivastav, EE	9415311051
			220 KV Obra TPS	RYB	RYB		
8	220	220 KV S/s Fatehpur	220 KV Fatehpur (PGCIL)	RYB	RYB	Er. Amrendra Kumar	8004911039
			220 KV Unchahar TPS	RYB	RYB		
9	220	220 KV S/s Rewa Road	220 KV S/s Sarangapur (PGCIL)	RYB	RYB	Er.S. Chaturvedi, EE	9415311005
			220 KV Obra TPS	RYB	RYB		

It is certified that there is no phase nomenclature mismatch at above substations under TSE, Prayagraj Zone.


(R.K.Sinha)
Chief Engineer(TSE)



उ०प्र०पावर ट्रान्समिशन कारपोरेशन लिमिटेड

TC

OFFICE OF THE CHIEF ENGINEER(T.C.)
U.P. Power Transmission Corporation Ltd.
"Paresian Bhwan", Near Mantri Awas
Vibhuti Khand-II, Gomti Nagar,
Lucknow- 226010 (U.P.)
E-mail- cetc@upptcl.org
CIN : U40101UP2001SGC028687

कार्यालय मुख्य अभियन्ता (पा०म०),
उ०प्र० पावर ट्रान्समिशन कारपोरेशन लि०,
पारेषण भवन, निकट मंत्री आवास
विभूति खण्ड- II, गोमतीनगर,
लखनऊ -226010(यू०पी०)
GSTIN : 09AAACU8823E1Z9

पत्रांक 2165-मु०अ०(पा०म०)/Statement

दिनांक 01-11-2019

Subject:- Regarding details submission related to Phase nomenclature mismatch.

Director (Operation)
UPPTCL
Shakti Bawan, Ext.
Lucknow

In reference to your office letter no-2627/Dir(O)/OCC Dated 17.10.2019, Kindly find enclose herewith the desired information of Transmission Central Zone Lucknow in soft & hard copy.

Encl :- As above

BB
11/11/19

(B.S Tripathi)
Chief Engineer(TC)

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TC
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**Format for details submission related to Phase Nomenclature mismatch
Under Transmission Central Zone Lucknow**

ETC-I Lucknow

Sl. No.	Voltage Level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Station/Other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
1	2	3	4	5	6	7	8	9
1								
7				Nil				
8								

It is certify that there is no phase mismatch in other station in my Control Area

ETC-II Lucknow

1	765 KV	Electricity 765 KV S/S Dahi Chowki Unnao	765 KV Anpara-C	RYB	Main 1-RYB Main 2-ABC	Er. P.B. Singh Ex. Engineer	9450909428 765kvetdunnao@upptcl.org	Main 1-REL 670 Main 2-MICOM
2	400 KV	400 KV S/S Sarojini Nagar, Lucknow	PGCIL Kursi Road, Lucknow	RYB	Main 1-RYB Main 2-ABC	Er. Vinay Kumar Tripathi Ex. Engineer	9450909429 ee400sjn@upptcl.org	All MICOM relays have phase nomenclature as ABC instead of RYB.
3			NTPC, Singrauli	RYB	Main 1-RYB Main 2-ABC			
4			PGCIL, Bareilly	RYB	Main 1-ABC Main 2-RYB			
5	400 KV	Electricity 400 KV S/S Dahi Chowki Unnao	400 KV Sarojini Nagar LKO.	RYB	Main 1-RYB Main 2-RYB	Er. Pallab Mukerjee Ex. Engineer	9450909439 ee400unnao@upptcl.org	No nomenclature mismatch. In Ciprotec relays nomenclature had already been changed previously to RYB from L1, L2 & L3 in the same way nomenclature of Micom relays had already been charged previously to RYB in place of ABC
6	400 KV		400 KV Panki	RYB	Main 1-RYB Main 2-RYB			
7	400 KV		400 KV Agra	RYB	Main 1-RYB Main 2-RYB			
8	400 KV		400 KV Bareilly	RYB	Main 1-RYB Main 2-RYB			
9	400 KV		400 KV PGCIL, LKO	RYB	Main 1-RYB Main 2-RYB			

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Sl. No.	Voltage Level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Station/Other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
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ETC-Shahjahanpur

ETD- Lakhimpur

S.No.	Voltage Level (in kv)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid connected Station/ other Agency	Phase Nomenclature at Local Station end	Name of S/S incharge	Contact Number & Mail ID	Remarks
1	132/33	132KV S/S Lakhimpur	220KV S/S Nighasan, 220KV S/S Sitapur,	at 220KV S/S Nighasan RYB	RYB	Sri Roshan Kumar Yadav	8317062150 (roshanyadav093@gmail.com)	-
2	132/33	132KV S/S Gola	220KV S/S	RYB	RYB			-
3	132/33	132KV S/S Mohammadi	220KV S/S Shahjahanpur	RYB	RYB			-
4	132/33	132KV S/S	220KV S/S Nighasan	RYB	RYB			-
5	220/132/33	220KV S/S Nighasan	132KV S/S Palia, 132KV S/S	RYB	RYB	Sri Deepav Srivastava	9450909500 (deepupptcl@gmail.com)	-
6	132/33	132KV S/S Palia	220KV S/S Nighasan	RYB	RYB			-

ETD- Hardoi

1	220/132/33	220KV S/S Hardoi	220KV S/S Shahjhanpur	at 220KV S/S Hardoi RYB	RYB	Sri Anuj Jaiswal	94509094247 (anuj1512@gmail.com)	-
2	132/33	132KV S/S Sandila	132kv S/S Asha, 132 kv S/S Rahimabad, 132 KV S/S Bangarmau	RYB	RYB			-
3	132/33	132KV S/S Bhagauli	220 Kv S/S Hardoi, 132 KV S/S Shahabad	RYB	RYB			-
4	132/33	132KV S/S Shahabad	132KV S/S Bhagauli, 132KV S/S Shrimau, 132KV S/S Neri	RYB	RYB	Sri Saurabh Verma	8004915567 (saurabhverma27@gmail.com)	-
5	132/33	132KV S/S Shrimau	132KV S/S Shahabad	RYB	RYB			-
6	132/33	132KV S/S Asha	220KV S/S Hardoi, 132KV S/S Sandila	RYB	RYB			-

ETD- Sitapur

1	132/33	220KV S/S Sitapur	220KV S/S Nighasan, 220KV S/S BKT, 132KV S/S Neri,	at 220KV S/S Sitapur RYB	RYB	Sri Ramesh Kumar, SDO-I	9450909420 & rameshkushwaha76@gmail.com	-
2	132/33	132KV S/S Neri	220KV S/S Sitapur, 220KV S/S Shahjahanpur, 132KV	RYB	RYB			-
3	220/132	220KV S/S Sitapur	220KV S/S Nighasan, 220KV S/S BKT, 132KV S/S Neri,	RYB	RYB	Sri Ramesh Kumar, SDO-II	9450909422 & er.ramesh.uppcl@gmail.com	-
4	132/33	132KV S/S Sidhauli	220KV S/S Sitapur, 132KV S/S Sahara, 132KV S/S Mahamoodabad	RYB	RYB			-
5	132/33	132KV S/S Laharpur	220KV S/S Sitapur, 132KV S/S Lakhimpur	RYB	RYB			-
6	132/33	132KV S/S	220KV S/S Sitapur	RYB	RYB			-
7	132/33	132KV S/S Mahamoodaba	132KV S/S Sidhauli	RYB	RYB			-

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Sl. No.	Votage Level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Station/Other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
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ETD- Shahjahanpur

1	220	220 KV S/S Shahjahanpur	220KV S/S Sitapur, Hardoi, Nighasan, 400 KV Bareilly, Roza	RYB	RYB	Er. Harjeet Kumar	9450909487		
2	132	132KV S/S Powayan	220KV S/S Shahjahanpur	RYB	RYB				
3	132	132KV S/S Banda	220KV S/S Shahjahanpur through 132 KV Powaya	RYB	RYB				
4	132	132KV S/S Shahjahanpur	220KV S/S Shahjahanpur	RYB	RYB	Er. Rajendra Nath	9450909486 raj4321upptcl@gmail.com		
5	132	132KV S/S Tilhar	220KV S/S Shahjahanpur	RYB	RYB				
6	132	132KV S/S Jalalabad	220KV S/S Shahjahanpur through 132 KV SPN	RYB	RYB				

ETC-Gonda

ETD- Gonda

1	220 KV	220 KV Gonda	220 KV Sohawal	RYB	L1, L2, & L3	L1, L2, & L3	Mob No- 9415005897 eeetdgonda@gmail.com 9415099045, 9415095058 & eeetdbrh@gmail.com	
2	220 KV	220 KV Gonda	220 KV Basti	RYB	L1, L2, & L3	L1, L2, & L3		
3	220 KV	220 KV Gonda	400 KV Gonda	RYB	L1, L2, & L3	L1, L2, & L3		
4	220 KV	220 KV Bahraich	400 KV Sub-Station, Gonda	RYB	ABC	220 KV Bahraich		

ETC-Sultanpur

Sl. No.	Votage Level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Station/Other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
1	2	3	4	5	6	7	8	9
1				Nil				

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Sl. No.	Voltage Level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Station/Other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks
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ETC-Bareilly

E.T.D., Bareilly								
1	220		220KV S.C. Bareilly 220KV S.C. Bareilly (400) - C.B. Ganj Ckt. I 220KV S.C. Bareilly (400) - C.B. Ganj Ckt. II 220KV S.C. Dohna - C.B. Ganj Line 220KV S.C. Roza - C.B. Ganj Line (from LLO Tower No. 23 to C.B. Ganj) 220 KV C.B. Ganj-Budaun Line 220 KV C.B. Ganj-Rampur Line 220 KV C.B. Ganj-Tanakpur Line 220 KV C.B. Ganj-Sitarganj Line					
	132	220KV Sub Station	132KV S.C. C.B. Ganj - Dham Pur Sugar Mill Line					
2	132	132KV Sub Station Bareilly Town	132KV S.C. Dohna - 132KV S.C. Bareilly Town - Farid Pur Line	No Phase Mismatch is there at two end		Anil Kumar Gupta Executive Engineer	etd_bareilly@yahoo.in eetdbly@upptcl.org	
3	132	132KV Sub Station Bareilly II (Balipur)	132KV S.C. 132KV S.C. Dohna - Bareilly II (Bali Pur) Line 132KV S.C. Bareilly II (Bali Pur) - Rasuiya Railway TSS Line 132 KV Bareilly-II (Balipur)-Bisalpur Line					
4	132	132KV Sub Station	132KV S.C. Shahjahan Pur - Farid Pur Line 132KV S.C. Farid Pur - Dwarikesh Sugar Mill Line 132 KV Faridpur-Bareilly Town Line					
5	132	132KV Sub Station	132KV S.C. Dohna - Richha Line 132KV S.C. Richha - Kesar Sugar Mill Line					
E.T.D. - II, Bareilly								
1	220	220KV Sub Station	220KV Dohna - Roza 220KV S.C. Dohna - C.B. Ganj Line 220KV Dohna - Bareilly (400) Line	No Phase Mismatch is there at two end		Supreet Sing A.E.	etsddohnabareilly@gmail.com	
2	220	220KV Sub Station	220KV Pilibhit - Bareilly (400) Line 220KV Pilibhit - Bareilly (400) Line			Vinod Kumar A.E.	sdpilibhit@gmail.co	

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Sl. No.	Voltage Level (In KV)	S/S Name	Adjacent Grid Connected S/S	Phase Nomenclature at Grid Connected Station/Other Agency	Phase Nomenclature at Local Station end	Name of S/S Incharge	Contact Number & Mail ID	Remarks					
E.T.D., Budaun													
1	220	220KV Sub Station Budaun	220KV D.C. Roza- 220KV D.C. Roza- 220KV S.C. C.B.Ganj-	No Phase Mismatch is there at two end		(Arvind Naik) Executive Engineer	9412738878 eeetdbdu@upptcl.org ee.etd.budaun@gmail.com						
2	132	132KV Sub Station Budaun	132KV S.C. Budaun- 132KV S.C. Budaun- 132KV S.C. Budaun-										
3	132	132KV Sub Station Bisauli	132KV S.C. Bisauli- Chandausi Line										
4	132	132KV Sub Station Aonla	132KV D.C. Aonla- 132KV D.C. Aonla- 132KV D.C. Aonla- 132KV D.C. Aonla- 132KV S.C. Bisauli-										
5	132	132KV Sub Station Usawan	132KV S.C. Sarila Solar Power Plant- Usawan Line										
E.T.D., Budaun													
1	400	400KV Sub Station Bareilly							No Phase Mismatch is there at two end				

Chief Engineer (TC)

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Follow up issues from previous OCC meetings

Sl. No.	Agenda point	Details	Status / Decision
1.	Sub-stations likely to be commissioned in next six months.	All the concerned states were requested to submit the details of the downstream network associated specially with POWERGRID substations along with the action plan of their proposed/approved networks.	The updated details of the substations of POWERGRID and their required downstream network is enclosed at Annexure-A.III.I All states were requested to update the status of remaining downstream networks on regular basis.
2.	Progress of installing new capacitors and repair of defective capacitors	Information regarding installation of new capacitors and repair of defective capacitors is to be submitted to NRPC Secretariat.	Information received from Rajasthan, Uttarakhand up to December 2019. Haryana up to November 2019 Delhi, UP, HP and UT of Chandigarh (for Sep 2019) . All states were requested to furnish updated status monthly.
3.	Healthiness of defence mechanism: Self-certification	Report of mock exercise for healthiness of UFRs carried out by utilities themselves on quarterly basis is to be submitted to NRPC Secretariat and NRLDC. All utilities were advised to certify specifically, in the report that " <i>All the UFRs are checked and found functional</i> ".	Report for the period ending Sep'2019 received from UP, Delhi, Haryana, HP, BBMB and Punjab . Rajasthan have submitted information up to Dec'2019 . All states were requested to submit details of feeder-wise expected load relief through UFR and df/dt relays in the format enclosed at Annexure-A.2.3 of agenda of 165 th OCC. Team of officers from NRPC, NRLDC, HVPNL & Haryana SLDC conducted UFR testing at Karnal substation of Haryana on 07.02.2020.
4.	Recommendations of Enquiry Committee on grid disturbances on 30 & 31.7.2012	Based on the recommendations of the Enquiry Committee on grid disturbances on 30 th & 31 st July 2012, utilities of NR were requested to take necessary action and submit compliance/status	Updated status awaited from Chandigarh and J&K.

Sl. No.	Agenda point	Details	Status / Decision
		report to NRPC.	
5.	Status of FGD installation vis-à-vis installation plan at identified TPS	List of FGDs to be installed in NR was finalized in the 36 th TCC (special) meeting dt. 14.09.2017. All SLDCs were regularly requested since 144 th OCC meeting to take up with the concerned generators where FGD was required to be installed. Further, progress of FGD installation work on monthly basis is monitored in OCC meetings.	Updated status for the month of December 2019 has been received from Punjab and UPRVUNL. All states/utilities are requested to update status on monthly basis.

6. Reactive compensation at 220 kV/ 400 kV level

Sl. No.	Owner	Substation	Reactor	Updated Status
1.	POWERGRID	Kurukshetra	500 MVAR TCR	Anticipated commissioning: Jan-Mar'2021
2	DTL	Peeragarhi	1x50 MVAR at 220 kV	Tender floated in December 2019. Commissioning expected by March 2021.
		Harsh Vihar	2x50 MVAR at 220 kV	
		Mundka	1x125 MVAR at 400 kV	Under Tendering. Expected commissioning by March 2021.
			1x25 MVAR at 220 kV	
		Electric Lane	1x50 MVAR at 220 kV	Under Financial Concurrence
		Bamnauli	2x25 MVAR at 220 kV	Under Tendering
3.	Punjab	Dhuri	1x125 MVAR at 400 kV	Tendering process to be restarted.
			1x25 MVAR at 220 kV	
		Nakodar	1x25 MVAR at 220 kV	Anticipated commissioning: Mid 2021
4.	PTCUL	Kashipur	1x125 MVAR at 400kV	PTCUL advised to submit the proposal for PSDF funding.
5.	Rajasthan	Akal	1x25 MVAR	PSDF funding sanctioned. Under tendering
		Bikaner	1x25 MVAR	
		Suratgarh	1x25 MVAR	
		Barmer	1x25 MVAR	Response awaited from TEGS of PSDF.
		Jodhpur	1x125 MVAR	

Annexure-AIII.I

Sl. No.	Substation	Downstream network bays	Commissioning status of S/s / Transformer	Planned 220 kV system and Implementation Status
1	400/220kV, 3x315 MVA Samba	2 nos. bays utilized under ISTS. Balance 4 nos. to be utilized	Commissioned (1 st & 2 nd – Mar'13 3 rd – Oct'16) Bays - Mar'13	<ul style="list-style-type: none"> • LILO of 220 kV Bishnha –Hiranagar D/c line. Target completion - Nov, 2019 • 220 kV D/c Samba (PG) – Samba (JKPDD) approved in 1st NRSCT.
2	400/220kV, 2x315 MVA New Wanpoh	6 Nos. of 220 kV bays to be utilized	Commissioned in Jul'14 Bays-Jul'14	<ul style="list-style-type: none"> • 220 kV New Wanpoh -Mirbazar D/c line. • 220 kV Alusteng - New Wanpoh Line.
3	400/220kV, 2x500 MVA Kurukshetra (GIS)	4 nos. of 220 kV bays to be utilized 4 nos. of bays utilised for LILO of one circuit of Kaul-Pehowa 220 kV D/c line at Bhadson (Kurukshetra). Commissioned on 07.03.2019 LILO of one circuit of Kaul- Bastara 220 kV D/c line Bhadson(Kurukshetra). Commissioned on 27.06.2019	Commissioned in Mar'17.	<ul style="list-style-type: none"> • 220kV D/c Bhadson (Kurukshetra) – Salempur with HTLS conductor equivalent to twin moose. P.O. issued on 15.10.18. Contract agreement signed on 30.11.18. Likely date of completion is 30.04.2020.
4	400/220 kV, 2x315 MVA Dehradun	Out of 6 bays, only two bays used. Balance 4 bays to be utilised.	Commissioned in Jan'17	<ul style="list-style-type: none"> • 220 kV Dehradun-Jhajra line. Target completion: Nov 2021
5	Shahjahanpu, 2x315 MVA 400/220 kV	Partially utilized. Balance 4 Nos. of 220 kV bays to be utilized.	Commissioned in Jun/Sep'14	<ul style="list-style-type: none"> • Shajahnapur-Azimpur D/C line is planned, expected by Dec, 2020 • 220 kV D/C Shajahnapur-Gola line expected by Dec,

Annexure-AIII.I

Sl. No.	Substation	Downstream network bays	Commissioning status of S/s / Transformer	Planned 220 kV system and Implementation Status
				2020
6	Hamirpur 400/220 kV 2x 315 MVA Sub-station (Augmentation by 3x105 MVA ICT)	2 nos. bays utilized under ISTS. Balance 6 nos to be utilized	1 st -Dec'13, 2 nd – Mar'14 & 3 rd Mar'19. 4 bays-Dec'13, 2 bays-Mar'14 2 bays-Mar'19	<ul style="list-style-type: none"> • 220 kV D/C Hamirpur-Dehan line. Target completion – Dec, 2020
7	Kaithal 400/220 kV 1x 315 MVA Sub-station	July 2017 (Shifting of transformer from Ballabgarh)	Commissioned	<ul style="list-style-type: none"> • 220 kV Kaithal(PG)-Neemwala D/c line. Target completion - 30.04.2020
8	Sikar 400/220kV, 1x 315 MVA S/s	2 Nos. of 220 kV bays	Commissioned	Retendering to be done in Feb/Mar 2020 .
9	Bhiwani 400/220kV S/s	6 nos. of 220kV bays	Commissioned	<ul style="list-style-type: none"> • 220kV Bhiwani (PG) - Isherwal (HVPNL) D/c line. Target completion – Nov, 2020
10	Jind 400/220kV S/s	6 nos. of 220kV bays	Commissioned	<ul style="list-style-type: none"> • LILO of both circuits of 220kV D/c Narwana – Mund line at Jind (PG). Target completion – Nov, 2020
11	400/220kV	4x 500	Commissioned	<ul style="list-style-type: none"> • RK Puram – Tughlakabad (UG Cable) 220kv D/c line. Scheme will be revised Target completion – March 2023

Annexure-AIII.I

Sl. No.	Substation	Downstream network bays	Commissioning status of S/s / Transformer	Planned 220 kV system and Implementation Status
	Tughlakabad GIS (10 no of 220kV bays)			<ul style="list-style-type: none">• Okhla – Tughlakabad 220kv D/c line.• Mehrauli – Tughlakabad 220kv D/c line.• BTPS – Tughlakabad 220kv D/c line. <p>Commissioned.</p> <ul style="list-style-type: none">• Masjid Mor – Tughlakabad 220kv D/c line. <p>Target completion – Dec, 2021.</p>
12	400/220kV Kala Amb GIS (TBCB) (6 nos. of 220kV bays)	7x105	Commissioned (Jul'17)	HPPTCL has planned one no. of 220kV D/c line from Kala Amb 400/220kV S/s to 220/132kV Kala Amb S/s. Details for remaining 4 nos. of line bays may be provided. Target completion – Dec, 2021



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

No. उ.क्षे.वि.स./प्रचालन/117/01/2020/496


Dated: 14.01.2020

Chief Engineer,
GM & NPC Division, CEA,
Sewa Bhawan, R. K. Puram, Sector-1,
New Delhi - 110 066

विषय: - Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd.- reg

This is in reference to GM Division's Letter No. 1/ए.आई./सी.ओ.आर./जी.एम.-2019 dated 04.12.2019 wherein a letter received from M/s IA Hydro Energy Private Limited was enclosed and the reply of HPSEB on the content of the letter was sought through NRPC Secretariat.

HPSLDC was requested to furnish the aforementioned information vide letter dated 06.12.2019 and their response has been received vide e-mail dated 13.01.2020. The response of HPSLDC is enclosed at **Annexure** of this letter for your information and necessary action at your end.


14/01/2020

(Saumitra Mazumdar)
SE (O)

Encl: - A/a

Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd.

From : pcshimla2003@gmail.com

Mon, Jan 13, 2020 02:09 PM

Subject : Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd.

 1 attachment

To : sehpsldc@gmail.com, ceeshamirpur@gmail.com, cesysophsebl@gmail.com, SE Operation <seo-nrpc@nic.in>, xenesjas@gmail.com, aeebathri87@gmail.com

--

Power Controller,
HP-ALDC,
Totu, Shimla-11.
0177-2838398
0177-2837543
www.hpaldc.org

 **IA constraints.pdf**
938 KB

Himachal Pradesh State Electricity Board Limited
(A State Govt. Undertaking)



CIN: U40109HP2009SGC031255
Address: Vidyut Bhawan, HPSEBL, Shimla-171004 (HP)
Phone No.: 0177-2838170 (Telefax)
Email address: pcshimla2003@gmail.com
Website Address: www.hpseb.com, www.hpaldc.org

No. HPSEBL/ PR&ALDC/ PC-10(OCC)/2019- 3084- 89

Dated: - 13/1/2020

To

**The Superintending Engineer (SLDC),
HPLDS, Totu,
Shimla-11**

Sub: Transmission Constraints Faced by M/s IA Hydro Energy Pvt. Ltd.

Ref.: Your office letter No.HPSLDC/SLDC-Vol-1/MSIC/2019-20-7364-66 Dated 21.12.2019

Sir,

In reference to your above referred letter dated 21.12.2019, please find enclosed herewith the details of transmission constraints faced by M/s IA Hydro Energy Pvt. Ltd. duly verified by AEE, HPSEBL, Bathri for taking further necessary action in the matter, please.

Yours faithfully,

DA:As above

s/dr
**Superintending Engineer,
PR &ALDC, HPSEBL,
Totu, Shimla- 171011.**

Copy of the above is forwarded to the following:

1. The Chief Engineer (ES), HPSEBL, Hamirpur for information, please.
2. The Chief Engineer (Sys. Op.), HPSEBL, Vidyut Bhawan, Shimla-04 for information, please.
3. ✓ The Superintending Engineer (Op.), NRPC, Katwaria Sarai, New Delhi in reference to his letter No.NRPC/Operation/117/01/2019/14925 Dated 06.12.2019 for information, please.

DA:As above

4. The Executive Engineer, ES Division, Jassure, HPSEBL in reference to his e-mail dated 10.01.2020 for information, please.
5. The Assistant Executive Engineer, 132 kV ES Sub-Division, HPSEBL, Bathri for information with reference to his letter dated 09.01.2020.

G. Anand 10/1/2020
**Superintending Engineer,
PR &ALDC, HPSEBL,
Totu, Shimla- 171011.**



HIMACHAL PRADESH STATE ELECTRICITY BOARD LIMITED

"A State Government undertaking"

Office: Assistant Executive Engineer,
132 kV S/Stn (ES) Sub-Division, HPSEB Ltd, Bathri
Phone: 01899-205290, Email: acebathri87@gmail.com

No. HPSEBL/SDB/W-4/2019-20-
To

426

Dated:- 09-01-2020

The Sr. Executive Engineer,
220kV SStn ES Division
HPSEBL, Jassur

Subject: -
Sir,

Transmission constraints by M/S IA Hydro Energy Pvt. Ltd.


'Jai Hind'

With reference to your office letter received through e-mail on dated 07/01/2020 on the subject cited above. The desired information required regarding Transmission constraints by M/S IA Hydro Energy Pvt. Ltd. is attached herewith on prescribed proforma as per record in respect of 132 kV ES Sub-Division, HPSEBL, Bathri and Kurthala.

Thanking you,

Encl: 2 attachements

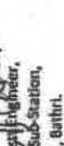
Yours faithfully,


Assistant Executive Engineer,
132 kV ES Sub-Division,
HPSEBL, Bathri.

HIMACHAL PRADESH STATE ELECTRICITY BOARD LTD.
TRANSMISSION CONSTRAINTS

JA Hydro Energy (P) Ltd.		H.P. State Electricity Board Ltd.			
Date	From	To	Duration	Reason/Remarks of 132 KV S/5tn Bathri	
08-07-2019	00:02	00:28	00:26	17.37	No failure found
-do-	08:35	09:02	00:27	18.04	Due to Kurhala Ckt.1 tripped on E/F.
-do-	11:25	11:41	00:16	10.89	No failure found
09-07-2019	13:31	13:51	00:20	12.96	Due to Kurhala Ckt.1 tripped on E/F & OC AB Phase
12-07-2019	08:22	10:25	02:03	29.70	132 KV supply failed from Jassure due to Kurhala Ckt.1 B Ph. Jumper burnt at Bathri S/5tn.
18-07-2019	10:16	10:26	00:10	6.58	No failure found
22-07-2019	08:16	20:30	12:14	177.66	Due to Shut down on 132 KV Jassur-Bathri line approved by SLDC vide approval no.320 dt.21/07/2019 for shifting of R Ph. from T-53 to 52-53A
22-07-2019	20:58	23:06	02:08	44.74	Due to 132 KV supply failed from 220 KV S/S Jassur due to LA of Power Tr.No.1 blast at Bathri S/5tn.
23-07-2019	07:46	08:16	00:30	9.21	Shut down taken at 10:47 hrs.
-do-	09:22	18:58	09:36	117.12	Due to Shut down on 132 KV Jassur-Bathri line approved by SLDC vide approval no.320 dt.21/07/2019 for shifting of R Ph. from T-53 to 52-53A
-do-	22:19	23:52	01:33	61.19	Due to Shut down on 132 KV Jassur-Bathri line approved by SLDC vide approval no.320 dt.21/07/2019 for shifting of R Ph. from T-53 to 52-53A
24-07-2019	09:02	16:00	06:58	0.00	Planned shut down
25-07-2019	08:14	18:51	10:37	112.52	Planned shut down
07-08-2019	14:02	14:36	00:34	21.34	Grid failure
23-08-2019	10:34	10:43	00:09	5.90	Grid failure
23-08-2019	23:25	23:42	00:17	11.70	-do-
24-09-2019	13:51	15:41	01:50	34.52	-do-
27-09-2019	06:58	07:52	00:54	16.50	-do-
28-09-2019	13:00	13:54	00:54	16.50	-do-
28-09-2019	14:14	15:39	01:25	25.08	-do-
16-10-2019	11:07	11:24	00:17	3.72	-do-
16-10-2019	13:10	13:27	00:17	3.72	-do-
19-10-2019	09:00	10:56	01:56	0.00	Planned shut down
02-11-2019	11:00	15:31	04:31	33.79	Planned shut down
09-11-2019	01:30	02:00	00:30	3.95	Grid failure
18-11-2019	09:40	09:56	00:16	1.99	-do-
18-11-2019	16:38	17:46	01:08	8.43	-do-


 Assistant Executive Engineer,
 132 KV S/5tn.(ES) Sub-Divn.,
 HPSEBI, Bathri.


 Addl. Asst. Engineer,
 132 KV Sub-Station,
 HPSEBI, Bathri.

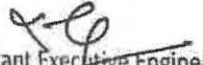
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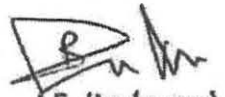
Outage attribute of 132 kV Kurthala Chanju circuit no. 2 as per record I. K. O. 132 kV
Sub Station HPSEBL Kurthala

Sr. No.	Date	Time From	Time To	Duration	remarks
1	03/07/2019	00-06	00-16	00-10	132kV Ckt. No. 1 breaker tripped at kurthala E/F
2	08/07/2019	08-37	08-57	00-20	132 kV kurthala Bathri Ckt. No. 1 tripped from bathri 132kV Ckt. No. 1 E/F
3	08/07/2019	11-24	11-40	00-16	132kV Ckt. no. 1 breaker tripped at kurthala E/F
4	09/07/2019	13-32	13-50	00-18	132 kV kurthala Bathri Ckt. No. 1 tripped from bathri E/F
5	12/07/2019	08-20	10-20	02-00	132 kV bus bar jumper broken at Bathri S/Str.
6	18/07/2019	10-15	10-25	00-10	132kV Ckt. No. 1 breaker tripped at Kurthala E/F
7	22/07/2019	08-22	20-23	12-01	132 kV Bathri Jassura EHV line under P.T.W.
8	22/07/2019	20-57	21-54	00-57	132 kV Ckt. No. 1 fail from 132 kv Bathri S/Str.
9	23/07/2019	07-45	08-14	00-29	132 kV Ckt. No.1 fail from 132 kv Bathri S/Str.
10	23/07/2019	09-20	18-50	09-30	132 kV Bathri Jassura EHV line under P.T.W.
11	23/07/2019	22-18	23-45	01-27	132 kV Ckt. No.1 fail from 132 kv Bathri S/Str.
12	24/07/2019	05-03	05-00	06-57	132 kV Bathri Jassura EHV line under P.T.W.
13	25/07/2019	08-15	18-50	10-35	132 kV Bathri Jassura EHV line under P.T.W.
14	07/08/2019	14-05	14-35	00-30	132 kV kurthala Bathri Ckt. No. 1 tripped from bathri
15	23/08/2019	10-35	10-45	00-10	132 kV change over from 220kv S/Str. Jassura
16	25/08/2019	23-25	23-40	00-15	132 kV kurthala Bathri Ckt. No. 1 tripped from bathri E/F
17	24/09/2019	13-55	15-30	01-35	132 kV supply fail from 220 kV S/Str. Jassura
18	24/09/2019	16-03	18-10	00-07	132 kV supply fail from 220 kV S/Str. Jassura
19	27/09/2019	06-58	07-33	00-40	132 kV kurthala Bathri Ckt. No. 2 tripped from bathri
20	28/09/2019	12-58	13-48	00-50	132 kV kurthala Bathri Ckt. No. 1 tripped from bathri

21	28/09/2019	14=10	15=15	01=05	132 KV kurthala Bathri Ckt. No. 1 tripped from bathri
22	16/10/2019	11=07	11=20	00=13	132 kV change over from 220kV S/Station Jassare
23	16/10/2019	13=10	13=27	00=17	132 kV change over from 220kV S/Station Jassare
24	02/11/2019	11=20	15=26	04=06	132 kV Kurthala Bathri Ckt. No. 2 under P.T. &
25	08/11/2019	01=30	01=50	00=20	132kV Ckt. No. 1 breaker tripped at Kurthala
26	18/11/2019	09=35	09=51	00=16	132kV Ckt no. 2 kurthala Chonju tripped at Kurthala

C/s

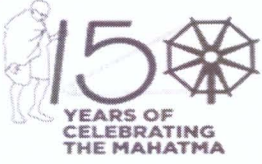

 Assistant Executive Engineer
 132 KV S/Station (ES) Sub-Divn.
 HPSEB Ltd. Kurthala


 J.E. (Incharge)
 132 KV S/Station
 HPSEBL Kurthala

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भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
ग्रिड प्रबंधन एवं एन.पी.सी. प्रभाग
Grid Management & NPC Division



विषय: Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd. – reg.

उपरोक्त विषय से सम्बन्धित टिप्पणियों का दस्तावेज आपकी जानकारी एवं आवश्यक कार्यवाही हेतु संलग्न है। यह पत्र सक्षम अधिकारी द्वारा अनुमोदित है।

संलग्नक : यथोपरि।

Prakash Khichi
23/01/2020
(प्रकाश खीची)

निदेशक (ग्रिड प्रबंधन)

✓ सदस्य सचिव, उ.क्षे.वि.स., कटवारिया सराय, नई दिल्ली

सं. 1/ए.आई/सी.ओ.आर/ग्रि.प्र/2020/44

दिनांक: 23.01.2020

प्रतिलिपि:

1. मुख्य अभियंता (एच.पी.पी. एंड आई.), के.वि.प्रा

Pls take up agenda as per para 2 of the enclosed letter in the upcoming OCC meeting. Minutes may be later sent to GM Division.

S/E (O)

I think we have replied. If not, pl. pr. urgently.

Sh. Akshay, AEE(O)

28/01

[Signature]

27/1

केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
ग्रिड प्रबंधन एवं एन.पी.सी. प्रभाग
Grid Management & NPC Division

Subject: Transmission Constraints faced by M/s IA Hydro Energy Pvt. Ltd. – reg.

Reference is invited to NRPC's letter no. उ.क्षे.वि.स./प्रचालन/117/01/2020/496 dated 14.01.2020 on the above cited subject, forwarding therewith the details of transmission constraints furnished by HPSEB in evacuation of power from hydro power project of M/s IA Hydro Energy Pvt. Ltd. for the period 08.07.2019 to 18.11.2019.

2. In this regard, it is requested that matter regarding transmission constraints in respect of 132 kV ES Sub-Division, HPSEBL, Bathri and Kurthala, may be taken up with HPSEB in the forthcoming OCC meeting to ensure that the generation of hydro project of the above cited IPP is not affected adversely. Further, HPSEB may be advised to undertake adequate/proper maintenance of the transmission system associated with the hydro project of M/s IA Hydro Energy Pvt. Ltd. so as to minimize the trippings and its impact on the evacuation of hydro generation.

P. Khichi
23/01/2020

(Prakash Khichi)
Director (GM)

Member Secretary ,NRPC, Katwaria Sarai, New Delhi

No. 1/AI/COR/GM/2020/44

Dated: 23/01/2020

Copy for kind information to:

1. Chief Engineer (HPP&I), CEA

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A Govt. of India Enterprise)



पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016
Registered & Corporate Office : 1st Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 41035696, Fax : 011- 26536901

Ref. No.: POSOCO/NLDC/SO/PMU/ 296

Date: 03rd Feb 2020

To,

Director (Operations)
Power Grid Corporation of India Limited
Saudamini, Sector 29,
Gurgaon (Haryana)

Sub: Provisioning of Phasor Measurement Units (PMU) on HVDC and FACTS device locations for understanding behavior of these devices during perturbations in the power system as well as study model validation

Reference:

1. POSOCO communication with Ref. POSOCO/NLDC/SO/1412 dated 17th Mar 2017
2. ED (RPT)-POWERGRID letter with Ref. RPT HVDC HQ-BLGR/RP 800/2020/10 dated 2nd Jan 2020

Madam,

HVDC and FACTS devices are important transmission components in Indian power system. As these power electronic devices are known to enhance the stability of the grid, therefore understanding behavior of these devices during perturbations or faults in the power system, is very important besides controller-controller interactions. Apart from local high resolution recording already available at these installations, the high resolution data provided by the Phasor Measurement Units (PMUs) can be very helpful in carrying out the necessary analysis/studies. The availability of PMU data will also enhance the visualization of the system parameters and help in taking appropriate timely actions by RLDCs/NLDC and also validation of study models by both RLDCs/NLDC as well as CTU/CEA.

The Unified Real Time Dynamic State Measurement (URTDSM) project is at near completion stage and PMUs have been installed at various locations across the Indian power system. It is important to mention that even with presence of such large number of PMUs, the visibility of HVDC and FACTS devices is still low at control centres. The status of availability of PMU data from HVDC and FACTS devices at RLDC/NLDC is enclosed as *Annexe-1*. It may be observed that many stations, though having PMU placed at AC bus of the station but non wired to record current of HVDC or FACTS devices. The wiring of bays associated with these devices to PMU would be helpful i.e. PMU placement at AC-DC interconnection feeder for HVDC or coupling transformer for STATCOM. It is also inferred from the

Narainha

contd/-

Annexe-1 that many stations associated with these elements do not have PMUs and therefore, require additional PMUs to be arranged to cover the relevant stations.

This issue of provisioning of PMU has been flagged by RLDCs at the Regional Power Committee fora also. The summary of discussions at RPC level on the subject issue and communications between RLDCs and POWERGRID is enclosed as *Annexe-2*. It may be observed that issue has regularly been deliberated at RPC level, though the effective implementation is yet to be realized on account of various minor operational issues. It is good to mention that in Eastern Region, the SVC & STATCOM PMU data has been wired and reporting to ERLDC. However, for Pugalur HVDC terminal, it was a surprise to receive a communication from Executive Director-RPT HVDC project to Executive Director-SRLDC requesting us to take up the issue in Standing Committee Meeting (Copy of communication enclosed at *Annexe-3*).

Significant investments have been undertaken in the commissioning of HVDC and FACTS devices like STATCOM, SVC etc. The controllers in these devices are expected to operate during the critical sub-second interval when there is a fault or perturbation in the system. In absence of PMUs, monitoring of these installations creates a gap in understanding the behavior of these devices besides validation of the study models. A similar requirement comes for the 765 / 400 / 220 kV pooling stations associated with wind and solar evacuation (at interconnection point, generally at 220 kV bus), to observe the Fault Ride Through(FRT) and other capabilities of Voltage and Frequency control.

It is requested that the matter of provisioning of PMUs at these locations may kindly be addressed at your level in the interest of better operation of the power system and proper utilization of these assets.

Thanking you

Yours sincerely,


(S. R. Narasimhan) 3/2/2020
Director (SO)-POSOCO

Encl: As above

Copy :

1. Member(PS), CEA, New Delhi
2. Chief Engineer,(GM & NPC),CEA, New Delhi
3. Chief Engineer, (SP & PA-1)/(SP & PA-2), CEA, New Delhi
4. Member Secretary, NRPC /WRPC /SRPC/ERPC /NERPC
5. COO-CTU, POWERGRID, Gurugram
6. Executive Director, NRLDC/WRLDC/SRLDC/ERLDC/NERLDC.

PMU Data Availability on HVDC installed in Indian Power System

S.No.	HVDC station	Region	PMU installed in Substation (Y/N)	PMU data of DC-AC Inter Connector Reporting to RLDC (Y/N)
1	Talcher	ER	Yes	No
2	Kolar	SR	Yes	Yes
3	Bhadravathi West Bus	WR-SR	Yes	Yes
4	Bhadravathi South Bus	WR-SR	Yes	No
5	Gazuwaka East Bus	ER-SR	Yes	Yes
6	Gazuwaka South Bus	ER-SR	Yes	No
7	Chandrapur	WR	Yes	Yes
8	Phadge	WR	No	No
9	Mundra	WR	No	No
10	Mahendergarh	NR	No	No
11	Champa	WR	Yes	Yes
12	Rihand	NR	yes	yes

PMU Data Availability on HVDC installed in Indian Power System

S.No.	HVDC station	Region	PMU installed in Substation (Y/N)	PMU data of DC-AC Inter Connector Reporting to RLDC (Y/N)
13	Dadri	NR	yes	yes
14	Balia	NR	yes	No
15	Bhiwadi	NR	yes	no
16	Kurukshetra	NR	Yes	Yes
17	Vindhyachal West Bus	WR-NR	No	No
18	Vindhyachal North Bus	WR-NR	No	No
19	Agra	NR	Yes	No
20	Alipurduar	ER	Yes	Yes
21	BNC	NER	No	No
22	Sasaram East Bus	ER-NR	Yes	Yes
23	Sasaram North Bus	ER-NR	Yes	Yes

Last updated on 17th January 2020

PMU Data Availability on STATCOM installed in Indian Power System

S.No.	Statcom station	Region	PMU installed in Substation (Y/N)	Coupling Transformer PMU data Reporting to RLDC (Y/N)
1	KISHANGANJ	ER	Yes	Yes
2	RANCHI	ER	Yes	Yes
3	JEYPORE	ER	Yes	Yes
4	ROURKELA	ER	Yes	Yes
5	LUCKNOW	NR	Yes	No
6	NALLAGARH	NR	Yes	No
7	TRICHY	SR	Yes	No
8	UDAMALPET	SR	No	No
9	Hyderabad	SR	No	No
10	NP KUNTA	SR	Yes	No
11	AURANGABAD	WR	Yes	No
12	SOLAPUR	WR	Yes	No
13	GWALIOR	WR	Yes	No
14	SATNA	WR	Yes	No

Last updated on 17th January 2020

PMU Data Availability on SVC installed in Indian Power System


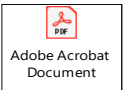
S.No.	Statcom station	ID	Rating	Region	PMU installed in Substation (Y/N)	Coupling Transformer PMU data Reporting to RLDC (Y/N)
1	400kV KANPUR	SVC-1	+140 / - 140	NR	Yes	No
2	400kV KANPUR	SVC-2	+140 / - 140	NR	Yes	No
3	400 kV Ludhiana	SVC-1	600	NR	Yes	No
4	400 kV Ludhiana	SVC-2	-400	NR	Yes	No
5	400 kV Kankroli	SVC-1	400	NR	Yes	No
6	400 kV Kankroli	SVC-2	-300	NR	Yes	No
7	400 kV New Wangpoh	SVC-1	300	NR	No	No
8	400 kV New Wangpoh	SVC-2	-200	NR	No	No


Last updated on 17th January 2020

PMU Data Availability on TCSC installed in Indian Power System

S.No.	Element Name	Compensation	TCSC station	Region	PMU installed in Substation (Y/N)	PMU data of TCSC Ckt at installed station reporting to RLDC (Y/N)
1	Gorakhpur-Muzaffarpur 1	40% (fixed) & 5-15% (Dynamic)	Gorakhpur	ER	NO	NO
2	Gorakhpur-Muzaffarpur 2	40% (fixed) & 5-15% (Dynamic)	Gorakhpur	ER	NO	NO
3	Raipur-Raigarh- 1	40% Fixed & 5-15% dynamic	Raipur	WR	Yes	Yes
4	Raipur-Raigarh- 2	40% Fixed & 5-15% dynamic	Raipur	WR	Yes	Yes
5	Purnea-Muzaffarpur 1	40% fixed, +15%/-5% dynamic	Purnea	ER	Yes	Yes
6	Purnea-Muzaffarpur 2	40% fixed, +15%/-5% dynamic	Purnea	ER	Yes	Yes

Last updated on 17th January 2020

WRPC deliberation regarding placement of PMU at HVDC/FACTS locations					
S.No.	Meeting	Date	Agenda Item No.	Brief about deliberation	Weblink to Agenda/MoM
1	505 OCC	21-03-18	8	POWERGRID was advised to install PMU at all the four STATCOM locations in WR for observability of composite response of STATCOM+MSR+MSC at WRLDC.	http://wrpc.gov.in/occ/505OCC_MINUTE.pdf
2	506 OCC	19-04-18	6	POWERGRID informed that feasibility for integration of STATCOM to existing PMUs would be checked and would be communicated to WRLDC.	http://wrpc.gov.in/occ/506OCC_MINUTE.pdf
3	9th PRM of URTDSM	27-04-19	3.5	WRLDC further raised the PMU data for STATCOM locations at Aurangabad, Satna, Solapur and Gwalior. GM(LD&C) suggested to get the preliminary survey done by GE team for assessing actual requirement of cable/ Hardware required. If the cables and required hardware is arranged by WR-I/II, GE shall help in making the STATCOM data available via PMUs.	
4	507 OCC	16-05-18	4	POWERGRID informed that installation of PMU at STATCOM locations is not in the scope of URTDSM, but has agreed to integrate the STATCOM in the existing PMU with extension of CT/PT wiring and joint survey by POWERGRID and GE would be done for feasibility of integration of STATCOM to existing PMUs. WRLDC informed that POWERGRID to consider the installation of PMU for future STATCOM projects in the planning stage itself for observability of dynamic performance of STATCOMs	http://wrpc.gov.in/occ/507OCC_MINUTE.pdf
5	508 OCC	14-06-18	12	POWERGRID informed that the STATCOMs can be integrated with the existing PMUs by replacing any one of the feeders integrated to PMU. WRLDC informed that the list of lines to be replaced with STATCOMs for integration with existing PMUs would be forwarded to POWERGRID.	http://wrpc.gov.in/occ/508occ_minute.pdf
6	509 OCC	17-07-18	8	WRLDC Informed feeders connections to PMU may be removed and extend to STATCOM 1.400 kV Satna-Bina ckt-1 or ckt-11 at Satna 2.400 kV Aurangabad-Boisarckt-1 or ckt-11 at Aurangabad 3.400 kV Solapur-Karad at Solapur	http://wrpc.gov.in/occ/509_OCC_MINUTE.pdf
7	510 OCC	10-08-18	3(iii)	POWERGRID informed that joint survey report on feasibility to extend the CT/PT wiring to PMU would be submitted soon and installation of PMUs shall be expedited.	http://wrpc.gov.in/occ/510_occ_minute.pdf
8	9th PRM of URTDSM	13-12-18	1	Issue of installation of PMUs at STATCOM locations of Solapur, Aurangabad, Gwalior & Satna was discussed. ED(LD&C) suggested that this work is under additional scope and shall be routed through WRPC. POWERGRID shall include PMU for these locations in URTDSM Phase-II or as new project as directed by WRPC.	
9	514 OCC	12-12-18	9.2	For observation and monitoring performance of STATCOM it is proposed to install PMUs at these locations. The matter has been discussed in various OCC meetings. Without sub second data, the dynamics of STATCOM could not be monitored and STATCOM cannot be utilized for real time grid operation.	http://www.wrpc.gov.in/occ/514_OCC_Minute.pdf

S.No.	Meeting	Date	Agenda Item No.	Brief about deliberation	Weblink to Agenda/MoM
10	Spl Meeting	22-01-19	3	PMU Installation at STATCOM locations: The installation of PMUs at STATCOM locations has been discussed in various forums like PRM-URTDSM, OCCM & also through separate communication with POWERGRID. However no PMU is available at any of the STATCOM locations for analysis of dynamic behaviour. During the discussion, WRLDC informed that one PMU is available at Satna site (which was earlier installed during pilot project) and PGCIL agreed to install the same at Satna PG STATCOM control room in HV side of the coupling transformer as an interim measure till PMUs are purchased for STATCOM separately. This may be taken up by PGCIL, WR-II on a priority basis.	
11	518 OCC	25-04-19	9.6	POWERGRID informed that PMU has been received at Satna substation. WRLDC enquired about target date for making PMU connections to STATCOM. POWERGRID informed that OEM support is required making PMU connection to STATCOM. POWERGRID stated that IVT voltage of Satna STATCOM shall be provided to WRLDC SCADA by June'19.	http://www.wrpc.gov.in/occ/518_OCC_MINUTE.pdf
12	519 OCC	15-05-19	9.2	POWERGRID informed that price quote from OEM M/s Kalkitech for installation of PMU at STATCOM was asked. After receiving price quote the work shall be started. WRTS-2, POWERGRID informed that IVT voltages of Gwalior and Satna STATCOMs shall be integrated to WRLDC SCADA by July'19.	http://www.wrpc.gov.in/occ/519_OCC_MINUTE.pdf
13	520 OCC	13-06-19	9.9	POWERGRID informed that before next OCCM the PMU would be commissioned and PMU shall report data to RLDC. IVT voltages of Satna and Gwalior STATCOMs shall be provided to WRLDC at the earliest.	http://www.wrpc.gov.in/occ/520_OCC_MINUTE.pdf
14	521 OCC	16-07-19	9.4	POWERGRID informed that commissioning of PMU at Satna STATCOM was completed and data was reporting to WRLDC. WRLDC informed that integration IVT voltage of STATCOM in WRLDC SCADA was still pending, POWERGRID stated that IVT voltage shall be integrated by end of July 19. However, presently data not reporting to WRLDC (it was informed to POWERGRID via saperate email, no update as on date.)	http://www.wrpc.gov.in/occ/521_OCC_MINUTE.pdf
15	During FTC	11-12-19	-	During FTC of Raigarh-Pugalur Pole-1,2,3,4. PMU requirement was informed to POWERGRID. Communiation in this regard attached saperately. Further letter dtd 02-01-2020 POWERGRID requested details where PMUs to be installed and number of PMUs, accordingly WRLDC WAMS mail dtd 16-01-2020 we have informed to POWERGRID. Installation is pending	Attachement shared sapertely

*Other nodes where PMUs installation in required in HVDCs and STATCOMs is mentioned in WRLDC Quarterly feedback on transmission Constraint dtd 23.01.2020 in. Chapter 7

SRPC deliberation regarding placement of PMU at HVDC/FACTS locations					
S.No.	Meeting	Date	Agenda Item No.	Brief about deliberation	Weblink to Agenda/MoM
1	36 SRPC	12-Jul-19	26	PGCIL (SR II) was requested to coordinate for the training on Analytical Applications by IITB. For PMU at STATCOM at Udumalpet, Hyderabad, Trichy, etc SRLDC was requested to identify the locations and possibility of shifting will be explored by PGCIL- SR I & SR II. SRLDC vide letter dated 01st July 2019 (Annexure-XXIX) requested PGCIL to look into the issues and take necessary actions to make all Analytical Applications operational at SRLDC. SRPC approved the recommendation of TCC that the charges towards shifting of PMU would be booked by PGCIL under O&M or any other project.	http://www.srpc.kar.nic.in/website/2019/meetings/srpc/m36srpcm.pdf
2	156 OCC	11-Jun-19	3.5	For PMU at STATCOM at Udumalpet, Hyderabad, Trichy, etc SRLDC was requested to identify the locations and possibility of shifting will be explored by SR I and SR II.	http://www.srpc.kar.nic.in/website/2019/meetings/occ/m156occm.pdf
3	160 OCC	15-Oct-19	4.46	SR I & SR II agreed to shift the PMUs to STATCOM locations (Hyderabad, Udumalpet and Trichy).	http://www.srpc.kar.nic.in/website/2019/meetings/occ/m160occm.pdf

ERPC deliberation regarding placement of PMU at HVDC/FACTS locations					
S.No.	Meeting	Date	Agenda Item No.	Brief about deliberation	Weblink to Agenda/MoM
1	39 TCC	16-11-18	3.1	Power Grid would first explore the possibilities by diverting the unutilized PMUs under URTDSM project and would complete the work on urgent basis.If adequate no. of PMUs are not available under URTDSM project, balance PMUs will be implemented under project "Upgradation of SCADA / RTUs / SAS in the Central sector stations and strengthening of OPGW network".	http://erpc.gov.in/wp-content/uploads/2018/06/39ERPC_TCC-Minutes.pdf
2	153 OCC	21-01-19	B.2	Powergrid informed that M/s GE had agreed to supply and install of 4 nos PMUs for 4 STATCOMs in the Eastern Region within the quantity variation clause under the existing URTDSM Project.	http://erpc.gov.in/wp-content/uploads/2019/01/153OCCMINUTES.pdf
3	154 OCC	21-02-19	B.6	In 153rd OCC, Powergrid informed that M/s GE had agreed to supply and install of 4 nos PMUs for 4 STATCOMs in the Eastern Region within the quantity variation clause under the existing URTDSM Project. And Powergrid informed that they would send the updated status to ERPC within a week	http://erpc.gov.in/wp-content/uploads/2019/03/154OCCMINUTES.pdf
4	157 OCC	20-05-19	C.14	Powergrid informed that the work would be completed by July 2019.	http://erpc.gov.in/wp-content/uploads/2019/06/157OCCMINUTES.pdf
5	158 OCC	27-06-19	C.14	In 157th OCC Meeting Powergrid informed that the work would be completed by July 2019.	http://erpc.gov.in/wp-content/uploads/2019/07/158OCCMINUTES-3.pdf
6	159 OCC	19-07-19	C.21	Powergrid informed that the work would be completed by 15 th August 2019.	http://erpc.gov.in/wp-content/uploads/2019/07/159OCCMINUTES.pdf
7	160 OCC	09-08-19	C.15	Powergrid informed that the work would be completed by 15th August 2019.	http://erpc.gov.in/wp-content/uploads/2019/07/160OCCMINUTES.pdf
8	161 OCC	20-09-19	C.14	In 159th OCC Meeting Powergrid informed that the work would be completed by 15th August 2019. PMU at Raurkela and Ranchi has been commissioned.	http://erpc.gov.in/wp-content/uploads/2019/10/161OCCMINUTES.pdf
9	162 OCC	22-10-19	C.9	PMU for STATCOMS at Rourkela and Jeypore have been commissioned in Aug 2019. Powergrid informed that material supplied at Ranchi and Kishanganj were damaged. New material would be supplied by November 2019.	http://erpc.gov.in/wp-content/uploads/2019/11/162nd-OCC-Minutes final.pdf
10	163 OCC	15-11-19	C.9	Powergrid informed that material supplied at Ranchi and Kishanganj were damaged. New material would be supplied by November 2019. Powergrid updated that the work would be completed by December 2019.	http://erpc.gov.in/wp-content/uploads/2019/12/163OCCMINUTES1.pdf
11	164 OCC	23-12-19	C.8	Powergrid informed that material supplied at Ranchi and Kishanganj were damaged. New material would be supplied by November 2019.	http://erpc.gov.in/wp-content/uploads/2020/01/164-OCC-MINUTES.pdf

****PMUs at Ranchi and Kishanganj were installed on 02/01/2020 and 19/11/19 respectively.**

Communication for PMU Placement between POSOCO and POWERGRID				
S.No.	From	To	Date	Subject
Southern Region				
1	GM(URTDSM,IT& TS)-SRLDC	CGM(AM)-SRTS-II,POWERGRID	08-Nov-19	Status of URTDSM PMU shifting as agreed in 36th SRPC meeting
2	GM(URTDSM,IT& TS)-SRLDC	CGM(AM)-SRTS-I,POWERGRID	08-Nov-19	Status of URTDSM PMU shifting as agreed in 36th SRPC meeting
3	Sr. GM(ULDC & IT)-SRTS-I	GM(URTDSM,IT& TS)-SRLDC	18-Nov-19	Status of shifting of URTDSM PMU
4	CGM(AM)-SRTS-II,POWERGRID	GM(URTDSM,IT& TS)-SRLDC	19-Nov-19	Status of shifting of URTDSM PMU
5	GM(URTDSM,IT& TS)-SRLDC	CGM(AM)-SRTS-II,POWERGRID	25-Nov-19	Status of URTDSM PMU shifting as agreed in 36th SRPC meeting
6	GM(URTDSM,IT& TS)-SRLDC	Sr. GM(ULDC & IT)-SRTS-I	25-Nov-19	Status of URTDSM PMU shifting as agreed in 36th SRPC meeting
7	ED(RPT Project)-HVDC	ED(SRLDC)	02-Jan-20	Regarding installation of PMUs at Pugalur HVDC station of RP 800 project
8	ED(SRLDC)	ED(RPT Project)-HVDC	17-Jan-20	Regarding installation of PMUs at Pugalur HVDC station of RP 800 project
Western Region				
1	GM(WRLDC)	GM(AM)-WRTS-I	26-Mar-18	Installation of PMU in coupling transformers at Satna,Aurangabad,Gwalior and Solapur
2	GM(WRLDC)	GM(AM)-WRTS-I	28-Jun-18	Installation of PMU at Satna,Aurangabad,Gwalior and Solapur on STATCOM coupling transformers HV side by extending CT/PT wiring
3	GM(WRLDC)	GM(AM)-WRTS-II	28-Jun-18	Installation of PMU at Satna,Aurangabad,Gwalior and Solapur on STATCOM coupling transformers HV side by extending CT/PT wiring
4	ED(RPT Project)-HVDC	ED(WRLDC)	02-Jan-20	Regarding installation of PMUs at Pugalur HVDC station of RP 800 project



Ref No: RPT HVDC HQ-BLGR/ RP 800/2020 /10

Date: 02/01/2020

Shri. Abhimanyu Gartia,
Executive Director, SRLDC
POSOCO, 29, Race Course Cross Road,
Bangalore – 560009

Sub.: Regarding Installation of PMU's at Pugalur HVDC Station of RP 800 Project – Reg.

Dear Sir

Wishing a Very Happy New Year 2020

It is our immense pleasure to inform that we have successfully completed Open Line Test of Bipole-1 (Pole-1 & Pole-2) of \pm 800kV Pugalur HVDC Terminals with your kind support and co-operation extended to us.

While processing our First Time Charging application request of Pugalur Bipole-1 HVDC Terminals, SRLDC/NLDC has raised a query about availability of PMU's at Pugalur HVDC Station. In this regard, it is to inform that No PMU's were envisaged in existing contract of \pm 800kV, 6000 MW Raigarh – Pugalur HVDC Terminals. However, the other sides of the line bays connected to Pugalur 400kV GIS S/s which is within the premises of Pugalur HVDC Station are envisaged with PMU's.

In view of SRLDC/NLDC opinion to install PMU's at Pugalur HVDC station, Kindly suggest us the Number of PMU's to be installed along with the detailed technical specification, Standards etc. for taking necessary action at our end to materialize the same. SLD of Pugalur HVDC Terminal is attached herewith for kind information.

Further, it is also requested to your Good Office to kindly flag your requirement of Installation of PMU's at Pugalur HVDC Terminals in the Standing Committee Meeting.

Thanking You,

Yours faithfully

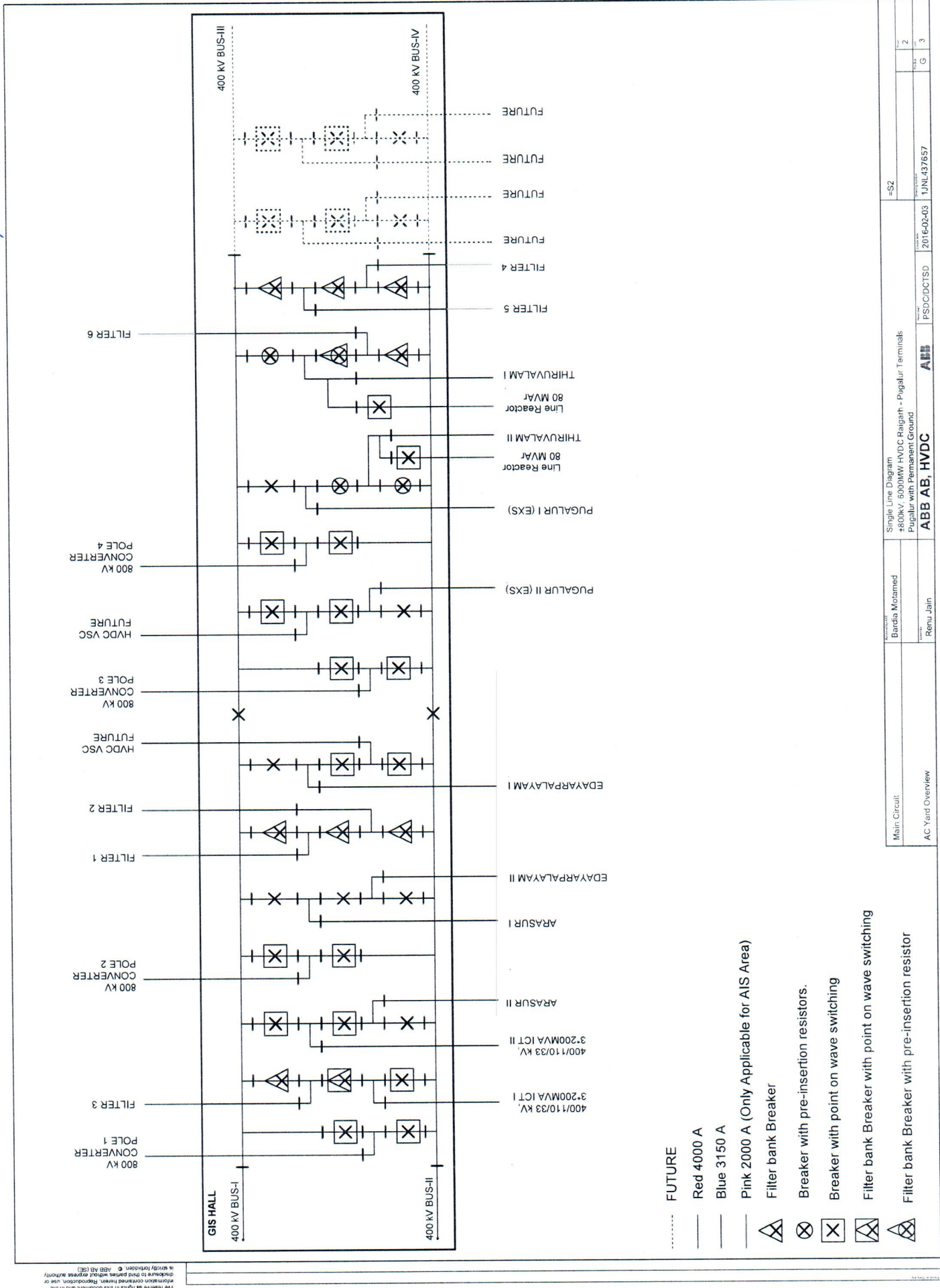
(A K Mishra)

Executive Director, RPT HVDC Project,
Bangalore

CC: Executive Director, NLDC, POSOCO

Executive Director, CC – HVDC Engg., POWERGRID

SLD of 400KV GIS S/S at PUGALUR HVDC STATION



- FUTURE
- Red 4000 A
- Blue 3150 A
- Pink 2000 A (Only Applicable for AIS Area)
- △ Filter bank Breaker
- ⊗ Breaker with pre-insertion resistors.
- ⊗ Breaker with point on wave switching
- ⊗ Filter bank Breaker with point on wave switching
- ⊗ Filter bank Breaker with pre-insertion resistor

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Project Name	Single Line Diagram	Revision	1
Client	400KV HVDC Raigarh - Pugalur Terminals	Revision	2
Author	Bardia Mohamed	Revision	3
Reviewer	Renu Jain	Project No.	JNL-437657
Project No.	PSDC/DCTSD / 2016-02-03	Sheet No.	G / 3
Company	ABB AB, HVDC	Scale	-S2
Document Title	AC Yard Overview		

Annex-I

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड

(भारत सरकार का उद्यम)

POWER SYSTEM OPERATION CORPORATION LIMITED

(A Govt. of India Enterprise)



केन्द्रीय कार्यालय : 61, आई एफ सी आई टावर, 7,8 एवं 9वीं मंजिल, नेहरु प्लेस, नई दिल्ली -110019
 Corporate Office : 61, IFCI Tower, 7,8 & 9th Floor, Nehru Place, New Delhi- 110019
 CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 40234672

संदर्भ संख्या: पोसोको/एनएलडीसी/2020/2910

दिनांक: 23rd Jan' 2020

सेवा में,

As per distribution list

विषय: Furnishing bank account details to POSOCO to facilitate payments of net benefits accrued in National Pool Account.

- संदर्भ:** 1.CERC order Petition No. 02/SM/2019 (Suo-Motu) dated 31st Jan' 2019
 2. CERC order Petition No. 08/SM/2019 (Suo-Motu) dated 11th Sep'2019
 3. पोसोको/एनएलडीसी/2019/152 dated 24th Sep'2019
 4. पोसोको/एनएलडीसी/2019/172 dated 18th Oct'2019

महोदय,

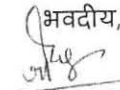
Hon'ble Commission, vide order Petition No. 08/SM/2019 (Suo-Motu) dated 11th Sep'2019 has given the methodology of sharing the SCED benefits accrued in National Pool Account (SCED). Based on the methodology, NLDC has published the provisional National net SCED benefit sharing statement for the month Apr'2019, May' 2019 and Jun' 2019. The statement is available in POSOCO website under following link <https://posoco.in/nation-sced-benefit-sharing-statement/>

NLDC, vide letter dated 24th Sep,2019 and dated 18th Oct,2019(Annex-1) requested beneficiaries to provide bank account details to facilitate payments to/from the beneficiaries on account of net benefits accrued in National Pool Account (SCED) along with the filled-up registration form complete in all respects.

Till date, we are yet to receive the bank account details along with the filled-up registration from your end. The registration form has also been uploaded on the POSOCO website (<https://posoco.in/bank-details/>) under the SCED tab on the home page.

You are kindly requested to provide the details as soon as possible so that the total net SCED benefit can be transferred to the beneficiaries' bank account as per the statement.

सादर धन्यवाद,

(भवदीय,

 23.1.2020
 (जी. चक्रवर्ती)

मुख्य महाप्रबंधक, रा.भा.प्रे.के

CC: Executive Director, NRLDC/WRLDC/NERLDC

पंजीकृत कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016
 Registered Office : First Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016

NORTH EASTERN REGION	
1	Chief Engineer(P) Western Elect. Zone Dept. of Power, Govt. of Ar. Pradesh, Bidyut Bhavan, Itanagar- 791111
2	Director (Distribution), MeECL, Lumjingshai Short Round Road, Integrated Office Complex, Shillong- 793001
3	Chairman & Managing Director, TSECL, Bidyut Bhavan, North Banamalipur, Agartala- 799001
WESTERN REGION	
4	Executive Director , (For Vindhyachal HVDC) WRTS-I, Power Grid Corporation of India Ltd., P O Uppalwadi Sampritinagar, Nagpur 440 026.

NORTHERN REGION	
5	General Manager STATE LOAD DESPATCH CENTRE Delhi Transco Limited 33 KV Sub Station Building Minto Road New Delhi - 110 002
6	Superintendent Engineer, Electricity Import - Export and Payment Circle, UP Power Corporation Limited, 11th Floor, Shakti Bhavan Extension, 14, Ashok Marg, Lucknow, UP, India
7	Chief Engineer HARYANA POWER PURCHASE CENTRE, Room 308, Shakti Bhawan, Sector-6, Panchkula Haryana 134109

8	Chief Engineer, Chandigarh (Electricity Department) Union Territories of Chandigarh, Sector 9 D, Chandigarh-160019
9	Divisional Senior Electrical Engineer (Traction Distribution), DRM Office North Central Railway Nawab Yusuf Rd, Civil Lines, Prayagraj, Uttar Pradesh 211001
10	Chief Engineer (Commercial and Survey Wing), Power development department, Narwal Bala , Gladini,Jammu,180004
11	Director (Operation), Vidyut Bhavan RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED VIDYUT BHAWAN, JYOTI NAGAR, JAIPUR-302015 RAJASTHAN
12	G.M (Commercial), NR-I, (For HVDC PG-AGRA, PG-BALLIA,, PG-KURUKSHETRA, PG-RIHAND) B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016



Annex-1
पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)



केन्द्रीय कार्यालय : 61, आई एफ सी आई टावर, 8 एवं 9वीं मंजिल, नेहरू प्लेस, नई दिल्ली - 110019
Corporate Office : 61, IFCI Tower, 8 & 9th Floor, Nehru Place, New Delhi - 110019
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 40234672

संदर्भ संख्या: पोसोको/एनएलडीसी/2019/ 152

दिनांक: 18th Oct' 2019

सेवा में,

As per distribution list

विषय: Furnishing bank account details to POSOCO to facilitate payments of net benefits accrued in National Pool Account.

- संदर्भ:** 1. CERC order Petition No. 02/SM/2019 (Suo-Motu) dated 31st Jan' 2019
2. CERC order Petition No. 08/SM/2019 (Suo-Motu) dated 11th Sep'2019
3. पोसोको/एनएलडीसी/2019/152 dated 24th Sep'2019

महोदय,

Hon'ble Commission, vide order Petition No. 08/SM/2019 (Suo-Motu) dated 11th Sep'2019 has given the methodology of sharing the SCED benefits accrued in National Pool Account (SCED). Based on the methodology, NLDC has published the provisional National net SCED benefit sharing statement for the month Apr'2019, May' 2019 and Jun' 2019. The statement is available in POSOCO website under following link <https://posoco.in/nation-sced-benefit-sharing-statement/>

NLDC, vide letter dated 24th Sep,2019 requested beneficiaries to provide bank account details to facilitate payments to/from the beneficiaries on account of net benefits accrued in National Pool Account (SCED) along with the filled-up registration form complete in all respects by 30th September 2019.

Till date, we are yet to receive the bank account details along with the filled-up registration from your end. The registration form has also been uploaded on the POSOCO website (<https://posoco.in/bank-details/>) under the SCED tab on the home page.

You are kindly requested to provide the details as soon as possible so that the total net SCED benefit can be transferred to the beneficiaries bank account as per the statement.

सादर धन्यवाद,

भवदीय,

देबाशिस दे
18/10/19
(देबाशिस दे)

कार्यपालक निदेशक

CC: Executive Director, NRLDC/WRLDC/SRLDC/ERLDC/NERLDC

पंजीकृत कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016
Registered Office : First Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016

POWER SYSTEM OPERATION CORPORATION LIMITED
8-9th Floor IFCI Tower 61, Nehru place, ,
NEW DELHI – 110019

REGISTRATION DETAILS FORM

1. Name of the Applicant: _____

2. a. Nationality _____

b. Status: For individuals : Resident Individual/Non Resident/ Foreign National
For Non Individual(please tick any one): Private Limited Co./Public Ltd. Co./
Partnership/Trust/ Government Body/BOI/Society/LLP/ Others (please specify)

4. a. PAN: _____ b. Registration No. (e.g. CIN): _____

5. PLACE OF BUSINESS: _____

6. a. GSTIN (if composite dealer, please specify): _____

b. Whether registered under MSMED Act(If yes ,Please mention Registration No.) _____

7. Business Address: _____

8. Contact details: Tel. Off. _____ Mobile No. _____

Email ID: _____

DECLARATION

I/We hereby declare that the details furnished above are true and correct to the best of my/our knowledge and belief and I/we undertake to inform you of any changes therein, immediately. In case any of the above information is found to be false or untrue or misleading or misrepresenting, I am/we are aware that I/we may be held liable for it.

Name & Signature of the Authorised Signatory

Date:

FOR OFFICE USE ONLY (POSOCO- Finance Dept.)

PARTY CODE:

DOCUMENTS RECEIVED:

(.....)

Name & Signature of the Authorized

Signatory Date

NEFT/RTGS/ECS DETAILS FOR PAYMENT

1.	Complete Bank Account No:
2.	Beneficiary Name (As per Bank Pass Book):
3.	Address:
4.	BANK & Branch Name:
5.	Bank Address & Phone Number:
6.	MICR Code:
7.	Branch Code :
8.	IFSC Code:
9.	CONTACT NO. & E MAIL ID:

The Beneficiary is requested to either provide the Photostat copy of Bank Pass book or to take attestation of the form from concerned Bank or provide a cancelled cheque of the account as a documentary support of the above.

Signature of the Beneficiary

Countersigned (EIC)

<u>FOR OFFICE USE (FINANCE DEPT. POSOCO)</u>	
PARTY CODE:	
DOCUMENTS RECEIVED: PASSBOOK COPY/CANCELLED CHEQUE/ BANK ATEESTED	
EMP./OFFICIAL SIGNATURE :	DATE:
EMP./OFF. CODE:	
EMP./ OFF. DESIGNATION:	

EASTERN REGION	
1	Chief Engineer (Commercial & Revenue) Jharkhand Bijli Vitran Nigam Limited , Engineering Building , HEC,Dhurwa, Ranchi – 834 004.
2	GM(Commercial), Power Grid Corporation of India Ltd. BSEB Colony,Regional Head Quarter, ERTS-I, Shashtri Nagar, Near TRW Patna-800023

SOUTHERN REGION	
3	The Chief Engineer (Commercial), Andhra Pradesh Power Co-ordination Committee Vidyuth Soudha, Gunadala, Vijayawada 520004, Andra Pradesh
4	The Chief Financial Controller (Revenue) 7th Floor, Eastern Wing, NPKRR Maaligai TANGEDCO, TNEB Ltd, 144 Anna Salai Chennai 600002, Tamil Nadu.
5	The Chief Engineer (Commercial) Telangana State Power Coordination Committee 4th Floor, Vidyuth Soudha, Khairatabad, Hyderabad 500082, Telangana.
6	The Superintending Engineer - I I Floor, Main Building, Electricity Department, Govt of Puducherry 605001 Puducherry.
7	The Additional Director (Projects) Power Company of Karnataka Ltd KPTCL Building, Kaveri Bhavan Bangalore 560009, Karnataka.

NORTH EASTERN REGION	
8	Chief Engineer(P) Western Elect. Zone Dept. of Power, Govt. of Ar. Pradesh, Bidyut Bhavan, Itanagar- 791111
9	Chairman, APDCL, Bijuli Bhavan, Paltan Bazar, Guwahati- 781001

10	Managing Director, MSPDCL, 3rd Floor New Directorate Building Near second M.R. Gate Imphal- Dimapur Road Imphal-795001
11	Director (Distribution), MeECL, Lumjingshai Short Round Road, Integrated Office Complex, Shillong- 793001
12	Engineer-in-Chief, P & E Dept., Govt. of Mizoram, Tuikhuahtlang, Aizawl- 796001.
13	Executive Engineer (Transmission), Electrical Circle, Dept. of Power Govt. of Nagaland, Dimapur- 797112.
14	Chairman & Managing Director, TSECL, Bidyut Bhavan, North Banamalipur, Agartala- 799001
WESTERN REGION	
15	The Chief Engineer (Commercial), C.S. Power Distribution Company Ltd., Danganiya, Raipur- 492013.
16	CE(SLDC) , MP Power Transmission Co. Ltd., Nayagaon, Rampur, Jabalpur, 482008, MP
17	Executive Engineer, Electricity Department, Daman & Diu, OI DC Corporate office Plot no. 35, Somnath, Daman-396210
18	Executive Director , WRTS-I, Power Grid Corporation of India Ltd., P O Uppalwadi Sampritinagar, Nagpur 440 026.
19	Chief Electrical Engineer, Goa Electricity Department, Vidyut Bhavan, 3rd Floor, Panaji, Goa- 403 001.

NORTHERN REGION

20	<p>General Manager STATE LOAD DESPATCH CENTRE Delhi Transco Limited 33 KV Sub Station Building Minto Road New Delhi - 110 002</p>
21	<p>Superintendent Engineer, Electricity Import - Export and Payment Circle, UP Power Corporation Limited, 11th Floor, Shakti Bhavan Extension, 14, Ashok Marg, Lucknow, UP, India</p>
22	<p>Chief General Manager (Commercial) Uttarakhand Power Corporation Ltd. Kanwali Road, Urja Bhawan , Dehradun-248001, Uttarakhand</p>
23	<p>Chief Engineer HARYANA POWER PURCHASE CENTRE, Room 308, Shakti Bhawan, Sector-6, Panchkula Haryana 134109</p>
24	<p>Chief Engineer, Chandigarh (Electricity Department) Union Territories of Chandigarh, Sector 9 D, Chandigarh-160019</p>
25	<p>Divisional Senior Electrical Engineer (Traction Distribution), DRM Office North Central Railway Nawab Yusuf Rd, Civil Lines, Prayagraj, Uttar Pradesh 211001</p>
26	<p>Chief Engineer (State Load Despatch Center) ALDC Complex , Near State Bank Of India, Totu, Shimla, Himachal Pradesh 171011</p>
27	<p>Chief Engineer (Commercial and Survey Wing), Power development department, Narwal Bala , Gladini, Jammu, 180004</p>

28	Superintendent Engineer Punjab State Power Corporation Ltd, Shed No. E1, A, Thermal Design, Patiala-147 001, Punjab
29	Director (Operation), Vidyut Bhavan RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED VIDYUT BHAWAN, JYOTI NAGAR, JAIPUR-302015 RAJASTHAN
30	A.G.M (Commercial), NR-I, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016



पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Government of India Enterprise)



केन्द्रीय कार्यालय : 61, आई एफ सी आई टावर, 8 एवं 9वीं मंजिल, नेहरु प्लेस, नई दिल्ली -110019
Corporate Office : 61, IFCI Tower, 8 & 9th Floor, Nehru Place, New Delhi - 110019
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 40234672

संदर्भ संख्या: पोसोको/एनएलडीसी/2019/152

दिनांक: 24th Sept' 2019

सेवा मे,

As per distribution list

विषय: National Pool Account (SCED) Bank Account details for Pilot on Security Constrained Economic Despatch (SCED) for Inter State Generating Stations pan India

संदर्भ: 1.CERC order Petition No. 02/SM/2019 (Suo-Motu) dated 31st Jan' 2019
2. CERC order Petition No. 08/SM/2019 (Suo-Motu) dated 11th Sep'2019

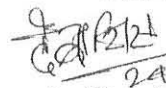
महोदय,

Hon'ble Commission, vide aforesaid orders, directed POSOCO to implement the Pilot on Security Constrained Economic Despatch (SCED) for Inter State Generating Stations pan India w.e.f. 01st April, 2019. In this connection, it was directed that NLDC would open a separate bank account called "National Pool Account (SCED)". All payments to/from on account of SCED is carried out from the said account. The details of bank account in available in POSOCO website under SCED tab (<https://posoco.in/bank-details/>).

Further, the net benefits accrued in the pool shall be shared in the ratio of 50:50 between the generators participating in SCED and the concerned beneficiaries on a monthly basis after adjusting compensation for part load operation of the generators. There is a need for providing beneficiaries bank account details to POSOCO to facilitate payments to/from the beneficiaries on account of net benefits accrued in National Pool Account (SCED). In this respect, it is requested to send the filled-up registration form complete in all respects by **30th September 2019**. The registration form has also been uploaded on the POSOCO website (<https://posoco.in/bank-details/>) under the SCED tab on the home page.

सादर धन्यवाद,

भवदीय,


24/09/19
(देबाशिस दे)

कार्यपालक निदेशक

CC: Executive Director, NRLDC/WRLDC/SRLDC/ERLDC/NERLDC

पंजीकृत कार्यालय : प्रथम तल, बी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली - 110016
Registered Office : First Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016

POWER SYSTEM OPERATION CORPORATION LIMITED
8-9th Floor IFCI Tower 61, Nehru place, ,
NEW DELHI – 110019

REGISTRATION DETAILS FORM

1. Name of the Applicant: _____

2. a. Nationality _____

b. Status: For individuals : Resident Individual/Non Resident/ Foreign National
For Non Individual(please tick any one): Private Limited Co./Public Ltd. Co./
Partnership/Trust/ Government Body/BOI/Society/LLP/ Others (please specify)

4. a. PAN: _____ b. Registration No. (e.g. CIN): _____

5. PLACE OF BUSINESS: _____

6. a. GSTIN (if composite dealer, please specify): _____

b. Whether registered under MSMED Act(If yes ,Please mention Registration No.) _____

7. Business Address: _____

8. Contact details: Tel. Off. _____ Mobile No. _____

Email ID: _____

DECLARATION

I/We hereby declare that the details furnished above are true and correct to the best of my/our knowledge and belief and I/we undertake to inform you of any changes therein, immediately. In case any of the above information is found to be false or untrue or misleading or misrepresenting, I am/we are aware that I/we may be held liable for it.

Name & Signature of the Authorised Signatory

Date:

FOR OFFICE USE ONLY (POSOCO- Finance Dept.)

PARTY CODE:

DOCUMENTS RECEIVED:

(.....)

Name & Signature of the Authorized

Signatory Date

NEFT/RTGS/ECS DETAILS FOR PAYMENT

1.	Complete Bank Account No:
2.	Beneficiary Name (As per Bank Pass Book):
3.	Address:
4.	BANK & Branch Name:
5.	Bank Address & Phone Number:
6.	MICR Code:
7.	Branch Code :
8.	IFSC Code:
9.	CONTACT NO. & E MAIL ID:

The Beneficiary is requested to either provide the Photostat copy of Bank Pass book or to take attestation of the form from concerned Bank or provide a cancelled cheque of the account as a documentary support of the above.

Signature of the Beneficiary

Countersigned (EIC)

FOR OFFICE USE (FINANCE DEPT. POSOCO)	
PARTY CODE:	
DOCUMENTS RECEIVED: PASSBOOK COPY/CANCELLED CHEQUE/ BANK ATEESTED	
EMP./OFFICIAL SIGNATURE :	DATE:
EMP./OFF. CODE:	
EMP./ OFF. DESIGNATION:	

EASTERN REGION

1	Chief Engineer (Commercial) Damodar Valley Corporation DVC Towers, VIP Road Kolkata – 700 054
2	Sr. Genl. Manager (PP) GRIDCO. 4 th Floor, Vidyut Bhavan, Janpath Bhubaneswar – 751 022
3	Chief Engineer, SLDC, West Bengal State Electricity Transmission Company Limited, Andul Road., P.O : Danesh Seikh Lane, Howrah – 711109.
4	Chief Engineer (Commercial & Revenue) Jharkhand Bijli Vitran Nigam Limited , Engineering Building , HEC,Dhurwa, Ranchi – 834 004.
5	Chief Engineer (HQ) Energy & Power Deptt., Govt. of Sikkim, Kazi Road, Gangtok, Pin - 737 101
6	Chief Engineer (Transmission-O&M), Bihar State Electricity Board, Vidyut Bhavan, Bailey Road, Patna – 800 021
7	General Manager (Commercial) ERTS-II, POWERGRID CF- 17, Action Area – 1C, New Town, Kolkata -700 156
8	GM(Commercial), Power Grid Corporation of India Ltd. BSEB Colony,Regional Head Quarter, ERTS-I, Shashtri Nagar, Near TRW Patna-800023
9	AGM(BD), NVVN Ltd, 7 th Floor, Core-3, SCOPE Complex, 7 Institutional Area, Lodhi Road, New Delhi-110003

SOUTHERN REGION

10	The Chief Engineer (Commercial), Andhra Pradesh Power Co-ordination Committee Vidyuth Soudha, Gunadala, Vijayawada 520004, Andra Pradesh
11	The Chief Engineer (Commercial & Tariff), Kerala State Electricity Board Vydyuthi Bhavanam, Pattom Thiruvananthapuram 695004, Kerala.
12	The Chief Financial Controller (Revenue) 7th Floor, Eastern Wing, NPKRR Maaligai TANGEDCO, TNEB Ltd, 144 Anna Salai Chennai 600002, Tamil Nadu.
13	The Chief Engineer (Commercial) Telangana State Power Coordination Committee 4th Floor, Vidyuth Soudha, Khairatabad, Hyderabad 500082, Telangana.
14	The Superintending Engineer - I I Floor, Main Building, Electricity Department, Govt of Puducherry 605001 Puducherry.
15	The Executive Engineer Electricity Department Division No: III, Curti, Ponda 403401, GOA.
16	The Executive Director Power Grid Corporation of India Ltd., SRTS - II, Near RTO Driving Track, Singanayakanahalli, Yelahanka-Doddaballapur Road, Bangalore 560064, Karnataka.
17	The Additional Director (Projects) Power Company of Karnataka Ltd KPTCL Building, Kaveri Bhavan Bangalore 560009, Karnataka.

NORTH EASTERN REGION

18	Chief Engineer(P) Western Elect. Zone Dept. of Power, Govt. of Ar. Pradesh, Bidyut Bhavan, Itanagar- 791111
19	Chairman, APDCL, Bijuli Bhavan, Paltan Bazar, Guwahati- 781001
20	Managing Director, MSPDCL, 3rd Floor New Directorate Building Near second M.R. Gate Imphal- Dimapur Road Imphal-795001
21	Director (Distribution), MeECL, Lumjingshai Short Round Road, Integrated Office Complex, Shillong- 793001
22	Engineer-in-Chief, P & E Dept., Govt. of Mizoram, Tuikhuahtlang, Aizawl- 796001.
23	Executive Engineer (Transmission), Electrical Circle, Dept. of Power Govt. of Nagaland, Dimapur- 797112.
24	Chairman & Managing Director, TSECL, Bidyut Bhavan, North Banamalipur, Agartala- 799001
25	The Executive Director Power Grid Corporation of India Ltd., NERTS, Dongtieh, Lower Nongrah, Lapalang, Shillong, 793006

WESTERN REGION

WESTERN REGION	
26	The Chief Engineer (Commercial), C.S. Power Distribution Company Ltd., Danganiya,Raipur- 492013.
27	CE(SLDC) , MP Power Transmission Co. Ltd., Nayagaon, Rampur, Jabalpur, 482008, MP
28	Chief Engineer(LD), Maharashtra State Electricity Transmission Co.Ltd., State Load Despatch Centre, Kalwa, Thane-Belapur Road, Airoli, Navi Mumbai 400 708
29	Chief Electrical Engineer, Goa Electricity Department, Vidyut Bhavan, 3rd Floor, Panaji, Goa- 403 001.
30	Executive Engineer, Electricity Department, Daman & Diu, OI DC Corporate office Plot no. 35, Somnath,Daman-396210
31	DNH Distribution Corporation Ltd, First floor, Vidhut Bhavan, Opp Secretariat, Silvassa-396230
32	Executive Director , WRTS-I, Power Grid Corporation of India Ltd., P O Uppalwadi Sampritinagar, Nagpur 440 026.
33	Executive Director ,NRTS-III, Power Grid Corporation of India Ltd., 12, Rana Pratap Marg, Parehta, Gokhale Vihar, Butler Colony, Lucknow, Uttar Pradesh 226001
34	Chief Engineer (LD), State Load Despatch Centre, GETCO, Gotri , Vadodara-390 021.

NORTHERN REGION

35	<p>General Manager STATE LOAD DESPATCH CENTRE Delhi Transco Limited 33 KV Sub Station Building Minto Road New Delhi - 110 002</p>
36	<p>Superintendent Engineer, Electricity Import - Export and Payment Circle, UP Power Corporation Limited, 11th Floor, Shakti Bhawan Extension, 14, Ashok Marg, Lucknow, UP, India</p>
37	<p>Chief General Manager (Commercial) Uttarakhand Power Corporation Ltd. Kanwali Road, Urja Bhawan , Dehradun-248001, Uttarakhand</p>
38	<p>Chief Engineer HARYANA POWER PURCHASE CENTRE, Room 308, Shakti Bhawan, Sector-6, Panchkula Haryana 134109</p>
39	<p>Chief Engineer, Chandigarh (Electricity Department) Union Territories of Chandigarh, Sector 9 D, Chandigarh-160019</p>
40	<p>Divisional Senior Electrical Engineer (Traction Distribution), DRM Office North Central Railway Nawab Yusuf Rd, Civil Lines, Prayagraj, Uttar Pradesh 211001</p>
41	<p>Chief Engineer (State Load Despatch Center) ALDC Complex , Near State Bank Of India, Totu, Shimla, Himachal Pradesh 171011</p>
42	<p>Chief Engineer (Commercial and Survey Wing), Power development department, Narwal Bala , Gladini, Jammu, 180004</p>

43	Superintendent Engineer Punjab State Power Corporation Ltd, Shed No. E1, A, Thermal Design, Patiala-147 001, Punjab
44	Director (Operation), Vidyut Bhavan RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED VIDYUT BHAWAN, JYOTI NAGAR, JAIPUR-302015 RAJASTHAN
45	A.G.M (Commercial), NR-I, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016

MVAR performance of generators

S.No.	Station	Unit No.	Fuel Type	Installed Capacity (MW)	Effective Capacity (MW)	Geographical location	MVAR performance (-) Absorption (+) Generation	Voltage absorption above (in KV)	Remarks
A. NTPC Ltd									
1	Dadri NCTPS	1	Thermal	210	210	Delhi-NCR	-	235	High voltage set point
		2		210	210		-40 to 30		
		3		210	210		-		
		4		210	210		-		
2	Dadri NCTPP	1	Thermal	490	490	Delhi-NCR	-60 to 120	420	Telemetry of Unit 1 incorrect
		2		490	490		-150 to 100		
3	Koldam	1	Hydro	200	200	Himachal Pradesh	-40 to 20		
		2		200	200		-40 to 20		
		3		200	200		-50 to 30		
		4		200	200		-50 to 20		
4	Rihand TPS	1	Thermal	500	500	Uttar Pradesh	-100 to 0	400	Different response from different units
		2		500	500		-60 to 60		
		3		500	500		-120 to -20		
		4		500	500		-80 to 0		
5	Singrauli STPS	1	Thermal	200	200	Uttar Pradesh	-40 to 0	402	Different response from different units
		2		200	200		-30 to 15		
		3		200	200		-40 to 5		
		4		200	200		-40 to 0		
		5		200	200		-50 to -10		
		6		500	500		-80 to 0		
		7		500	500		-80 to 0		
6	Unchahar -I,II & II TPS	1	Thermal	210	210	Uttar Pradesh	-15 to 25		Different response from different units
		2		210	210		-10 to 40		
		1	Thermal	210	210	Uttar Pradesh	-40 to 10		
		2		210	210		-30 to 10		
		1		210	210		-30 to 30		
B. NHPC Ltd									
1	Chamera HPS-I	1	Hydro	180	180	Himachal Pradesh	-	415	High voltage set point
		2	Hydro	180	180	Himachal Pradesh	-80 to 40		
		3	Hydro	180	180	Himachal Pradesh	-60 to 20		
2	Chamera HPS-II	1	Hydro	100	100	Himachal Pradesh	-	405	
		2	Hydro	100	100	Himachal Pradesh	-		
		3	Hydro	100	100	Himachal Pradesh	-50 to -10		
3	Dulhasti	1	Hydro	130	130	Jammu & Kashmir	-50 to 0	410	
		2	Hydro	130	130		-40 to 0		
		3	Hydro	130	130		-60 to 0		
4	Parbati-3	1	Hydro	130	130	Himachal Pradesh	-50 to 0		
		2		130	130		-		
		3		130	130		-		
		4		130	130		-20 to 0		
5	URI-I	1	Hydro	120	120	Jammu & Kashmir	-20 to 20	400	
		2	Hydro	120	120	Jammu & Kashmir	-40 to 20		
		3	Hydro	120	120	Jammu & Kashmir	-30 to 30		
		4	Hydro	120	120	Jammu & Kashmir	-40 to 30		

C. Adani Power								
1	Kawai	1	Thermal	660	660	Rajasthan	-100 to 40	400
		2		660	660		-120 to 0	400
D. ARAVALI POWER COMPANY PVT. LTD. (APCPL-A joint venture of NTPC,IPGCL & HPGCL)								
1	Jhajjar (IGSTPS)	1	Thermal	500	500	Haryana	0 to 120	773
		2		500	500		-	
		3		500	500		-	
E. Lalitpur Termal Power Generation (Bajaj Hindustan Limited)								
1	Lalitpur TPS	1	Thermal	660	660	Uttar Pradesh	-70 to 150	773
		2		660	660		-100 to 150	
		3		660	660		-100 to 40	
F. BBMB								
1	Dehar	1	Hydro	165	165	Himachal Pradesh		420
		2		165	165			
		3		165	165		-30 to 10	
		4		165	165		-40 to 40	
		5		165	165		-	
		6		165	165		-	
G. Haryana								
1	Mahatama Gandhi STPS	1	Thermal	660	660	Haryana	-140 to 0	410
		2		660	660		-140 to 0	
2	Khedar (Rajiv Gandhi STPS)	1	Thermal	600	600	Haryana	-	415
		2		600	600		-180 to 50	
H. Indraprastha Power Generation Corporation Ltd (IPPGCL)/ Pragati Power Corporation Ltd (PPCL)								
1	Bawana CCGT	GT#1	Gas	216	216	Delhi-NCR	-40 to 40	420
		GT#2		216	216		-40 to 40	
		GT#3		216	216		-50 to 20	
		GT#4		216	216		-	
		ST#1		253.6	253.6		-40 to 40	
		ST#2		253.6	253.6		-40 to 40	
I. Jindal South West Energy (JSW Energy)								
1	Karcham Wangtoo	1	Hydro	250	250	Himachal Pradesh	-100 to 50	415
		2		250	250		-	
		3		250	250		-80 to 40	
		4		250	250		-80 to 0	
J. M/S Lanco Anpara Power Private Ltd (A SPV formed by M/s Lanco Kondapalli Power Private Ltd)								
1	Anpara-C	1	Thermal	600	600	Uttar Pradesh	-100 to 50	765
		2		600	600		-120 to 0	
K. L&T Power Development Limited (A wholly owned subsidiary of L&T)								
1	Rajpura TPS	1	Thermal	700	700	Punjab	50 to 200	415 (if MVAR sign reversal considered)
		2	Thermal	700	700		50 to 200	
L. Prayagraj Power Generation (JAYPEE group)								
1	Bara	1	Thermal	660	660	Uttar Pradesh	-80 to 20	772
2	Bara	2	Thermal	660	660	Uttar Pradesh	-	
3	Bara	3	Thermal	660	660	Uttar Pradesh	-40 to 120	

Data needs check.
Unit III Telemetry incorrect

M. Rajasthan Rajya Vidyut Utapadan Nigam Ltd (RRVUNL)									
1	Chhabra Stage-I	1	Thermal	250	250	Rajasthan, Baran	-50 to 20	404	
		2		250	250		-50 to 0		
2	Chhabra Stage-2	3	Thermal	250	250	Rajasthan, Baran	-70 to 0		
		4		250	250		-60 to 40		
3	Chhabra Supercritical	1	Thermal	660	660	Rajasthan, Baran	-40 to 140	412	Data needs check
		2	Thermal	660	660		-40 to 140		
7	Kalisindh	1	Thermal	600	600	Rajasthan	-130 to 150	420	Different response from different units
		2		600	600		-150 to 20		
N. SJVN Ltd									
1	Nathpa-Jhakri	1	Hydro	250	250	Himachal Pradesh	-80 to 20	-	Data needs check
		2		250	250		50 to 200		
		3		250	250		-80 to 0		
		4		250	250		-70 to 0		
		5		250	250		-60 to 0		
		6		250	250		-50 to 30		
O. Talwandi Sabo Power Limited (TSPL) (Sterlite Energy Limited)									
1	Talwandi Saboo	1	Thermal	660	660	Punjab	0 to 200		Data needs check
		2		660	660		60 to 220		
		3		660	660		-		
P. THDC									
1	Tehri	1	Hydro	250	250	Uttarakhand	0 to 60	412	High voltage set point
		2		250	250		-30 to 50		
		3		250	250		-50 to 50		
		4		250	250		-30 to 60		
2	Koteshwar	1	Hydro	100	100	Uttarakhand	20 to 60		Data needs check
		2		100	100		60 to 100		
		3		100	100		-		
		4		100	100		-		

S.No.	Utility	Plant	Generator	Exciter	Governer	Stabilizer	Remarks (data not given)
1	NHPC	Chamera-1	Yes	Yes	Partial	Yes	Governor data is not in defined model/format, not able to process that data
		Chamera-2	Yes	Yes	Yes	No	T ¹ q0,XI & S(1.0)
		Chamera-3	Yes	Yes	Yes	Yes	S(1.0) & S(1.2)
		Dhauliganga	Yes	Yes	Yes	Yes	Exhaustive data for excitation and stabilizer but not in defined model/format
		Bairasuil	Yes	Yes	Partial	Yes	Exciter & stabilizer coupled in excitation system
		Uri-1	Yes	Yes	Yes	Yes	
		Uri-2	Yes	Partial	Yes	Yes	Exhaustive data given for AVR , though not in defined model.
		Dulhasti	Partial	Partial	yes	No	Excitation data is not in defined model
		Parbati-III	Partial	No	Partial	No	Only block diagram given for excitation system, rest data is not in defined format
		Salal	Partial	Partial	No	Partial	Excitation system block diagram with and without PSS is given. Some partial data for excitation system is given only. Data not in format
		Sewa-II	Partial	No	Yes	Yes	Governor and stabilizer block diagram has given and data is also shared. As the data is not defined for any standard model, we are checking the data
2	NTPC	Rihand	Yes	Yes	No	Yes	Stabilizer data only for Rihand -1 is given
		Dadri Thermal-2	Yes	Yes	No	No	
		Singrauli	Yes	Yes	No	No	
		Unchahar-1	Yes	Yes	No	No	
		Badarpur	Yes	Yes	No	No	Unit # 1,2,3 of 95 MW each
		Unchahar-4	Yes	Yes	Yes	No	
3	SJVNAL	NJPC	Yes	Yes	No	Yes	T ¹ d0, T ¹ q0 & S(1.2)
		Rampur	Yes	No	No	No	
4	UPRVUNL	Parichha	Partial	Yes	No	No	Time constants & Unit#7
		Harduaganj	Partial	No	No	No	Unit#2
		Anpara-1,2,3	Yes	Yes	No	Yes	
		Anpara- 4,5	Yes	Yes	No	Yes	
		Obra	Yes	No	No	No	
		Harduaganj Unit#7 (120 MW)	Yes	No	No	No	Model name has been given (Transfer function diagram of static excitation system also shared) [Governor model not defined]
5	HPGCL	Yamuna nagar	Yes	Yes	No	Yes	Inertia
		Panipat-1,2	Yes	Yes	No	Yes	
		Khedar	Yes	No	No	Yes	
6	PSTCL	Ropar	Yes	Yes	Yes	Yes	
		Rajpura	Yes	Yes	Yes	No	
		Talwandi Saboo	Yes	No	No	No	Model name has been given for excitation system, governor though data has not submitted
7	Karcham	Karcham Wangtoo	Yes	No	No	No	
8	Everest	Malana-2	Yes	No	No	No	
9	AD Hydro	AD Hydro	Yes	No	No	No	
10	Shree Cement	Shree Cement	Yes	No	No	No	
11	Roza-IPP	Roza	Yes	No	No	No	
12	Lalitpur-IPP	Lalitpur	Yes	Yes	No	Yes	
13	RRVPNL		Partial	yes	Partial	No	XI, S(1.0),S(1.2)
14	DTL	Indra Prastha PPS-I	Partial	No	No	No	
		PPS-III	Partial	Partial	Partial	No	Not in any standard model, exhaustive data has given. Checking the data
15	HPPCL	Sainj HEP	Yes	Partial	Partial	Partial	Proposed settings are not given
16	THDC	Tehri	Yes	Yes	Yes	Yes	
		Koteshwar	Yes	Yes	Yes	Yes	

S.No.	Utility	Plant Name	Plant Capacity
1	NTPC	Dadri thermal-1	1820
		Unchahar-2,3	1050
		Dadri GPS	830
		Anta GPS	419
		Auraiya GPS	663
		Faridabad GPS (NTPC)	432
		Koldam	800
2	NHPC	Tanakpur-HPS	690
3	NPC	NAPS	440
		RAPS A (NPC)	300
		RAPS- B	440
		RAPS- C	440
4	BBMB	Bhakra HPS	1379
		Dehar HPS	990
		Pong HPS	396
5	IPP	Budhil HPS(IPP)	70
6	PSTCL	Guru Nanak Dev TPS(Bhatinda)	460
		Guru Hargobind Singh TPS(L.mbt)	920
			1320
7	Haryana	Jhajjar(CLP)	1320
8	J&K	Baglihar HPS (IPP)	1240
9	Uttarakhand	All hydro plants	1500
10	Rajasthan	kota TPS	1240
		Suratgarh TPS	1500
		Chabra TPS	1660
		Dholpur GPS	330
		Ramgarh GPS	271
		Barsingsar (NLC)	250
		Giral LTPS	250
		Rajwest LTPS (IPP)	1080
		Kalisindh	1200
11	UPPTCL	Panki TPS	210
		Tanda TPS (NTPC)	440
		Anpara-C (IPP)	1200
		Bajaj Energy Pvt.Ltd(IPP) TPS	450
		Anpara-D	1000
		Bara	1980
		Vishnuparyag HPS (IPP)	440
		Alaknanda	330
12	Delhi	Rajghat TPS	135
		Delhi Gas Turbine	282
		Rithala GPS	108
		Bawana GPS	1370
13	HPSEB	Baspa HPS (IPP)	300
		Malana HPS (IPP)	86

Rajasthan RE generators

1	PSS_132KV_DALOT_KANGARH
2	PSS_132KV_KOLAYAT_RAYS
3	PSS_132KV_NOKHADHAIYA_3No_33KV
4	PSS_132KV_PS2_GODAWARI_GREEN
5	PSS_132KV_PS2_PRECISION
6	PSS_132KV_PS3_8NO_33KV
7	PSS_132KV_PS3_WELSPUN
8	PSS_132KV_RANI_RANI
9	PSS_132KV_SHEO_SUZLON
10	PSS_220KV_BADISID_EDEN
11	PSS_220KV_BADISID_TERRAFORM
12	PSS_220KV_BALOTRA_BALOTRA
13	PSS_220KV_BAP_MAHI_NDRA
14	PSS_220KV_BHAWAD_SNCA
15	PSS_220KV_GULABPURA_GULABPURA
16	PSS_220KV_KHINWSAR_KHI_NWSAR
17	PSS_220KV_PRATAPGARH_DEVGARH
18	PSS_220KV_PRTAPGRH_WELSPUN_TATA
19	PSS_220KV_TINWARI_3NO_33KV
20	PSS_400KV_AKAL_AKAL
21	PSS_400KV_AKAL_DEVIKOT
22	PSS_400KV_AKAL_JAJIYA
23	PSS_400KV_AKAL_BHU
24	PSS_132KV_DALOT_33KV_DALOT
25	PSS_220KV_DECHU_DSPPL
26	PSS_220KV_DECHU_RSTEPL
27	PSS_220KV_NEEMRANA_NEEM_RANA
28	PSS_220KV_TINWARI_KETUKALAN
29	PSS_132KV_AAU_AAU
30	PSS_132KV_KOLAYAT_8NO_33KV
31	PSS_132KV_OSIAN_DUNDHARA
32	PSS_132KV_SHAHPURA_SHAHPURA_BHILWA
33	PSS_400KV_AKAL_DANGRI
34	PSS_400KV_AKAL_RAJGARH
35	PSS_400KV_AKAL_MULANA
36	PSS_220KV_AMARSAGAR_MOKALA
37	PSS_220KV_AMARSAGAR_LUDARWA
38	PSS_220KV_AMARSAGAR_KALADUNGAR
39	PSS_220KV_BHOPALGARH_DEBARI
40	PSS_220KV_RAMGARH_TEJUWA_II
41	PSS_220KV_RAMGARH_RAMGARH
42	PSS_132KV_CHAMU_DERI_A
43	PSS_132KV_PS8_SALODI
44	PSS_132KV_JAYAL_JAYAL

S. NO.	Element Name	Outage Date	Outage Time	Reason/Remarks
1	400 KV Aligarh-Mainpuri (UP) Ckt-1	01-Jan-20	17:00	Over voltage. As per PMU, No fault observed.
		03-Jan-20	17:02	Over voltage. As per PMU, No fault observed.
		15-Jan-20	23:46	Over voltage. As per PMU, No fault observed.
		16-Jan-20	13:02	Over voltage. As per PMU, No fault observed.
		19-Jan-20	17:03	Over voltage. As per PMU, No fault observed.
		20-Jan-20	17:01	Over voltage. As per PMU, No fault observed.
		22-Jan-20	12:59	Over voltage. As per PMU, No fault observed.
2	400 KV Baspa(JP)-Karcham Wangtoo(JSW) (HBPL) Ckt-2	07-Jan-20	0:00	Due to earth fault zone-1, 19.9 km. As per PMU, No fault observed.
		09-Jan-20	21:07	B-N fault, dist. 3.3km (from Karcham).As per PMU, B-N fault and unsuccessful auto-reclosing observed.
		17-Jan-20	10:58	B-N fault. As per PMU, B-N fault occurred, no auto-reclosing observed.
		28-Jan-20	18:29	At wangtoo end: Zone-2,Fault distance-17.08km. As per PMU, R-Y fault is observed.
3	400 KV Bawana-Mundka (DV) Ckt-1	29-Jan-20	6:05	Y-B fault. As per PMU, Y-B fault is observed.
		19-Jan-20	0:18	Relay mal operation. As per PMU, No fault observed.
		22-Jan-20	1:01	Over voltage. As per PMU, No fault observed.
		26-Jan-20	15:01	Over voltage. PMU data not available.
4	400 KV Kishenpur-NewWanpoh (PG) Ckt-3	28-Jan-20	3:55	Over voltage. As per PMU, No fault observed.
		29-Jan-20	1:29	Over voltage. As per PMU, No fault observed.
		07-Jan-20	1:18	R-N fault. As per PMU, R-N fault and unsuccessful auto-reclosing with delayed clearance is observed.
		08-Jan-20	13:16	R-N fault; 94.7km from Kishenpur end. As per PMU, R-N fault and unsuccessful auto-reclosing with delayed clearance is observed.
5	400/220 kv 315 MVA ICT 1 at Makhu(PS)	13-Jan-20	19:50	R-N fault. As per PMU, R-N fault and unsuccessful auto-reclosing with delayed clearance is observed.
		13-Jan-20	21:06	R-N fault. As per PMU, R-N fault and unsuccessful auto-reclosing observed.
		14-Jan-20	12:30	R-N fault. As per PMU, No fault observed.
		13-Jan-20	3:15	Over voltage. As per PMU, No fault observed.
		14-Jan-20	1:26	Over-Fluxing. As per PMU, No fault observed.
6	400 KV Kishenpur-NewWanpoh (PG) Ckt-1	16-Jan-20	1:25	Over voltage.As per PMU, No fault observed.
		19-Jan-20	2:59	Over fluxing. As per PMU, No fault observed.
		20-Jan-20	3:30	Over voltage. As per PMU, No fault observed.
		09-Jan-20	8:13	Y-N fault. As per PMU, Y-N fault occurred and delayed clearance with no auto-reclosing observed.
7	400 KV Akal-Jodhpur (RS) Ckt-1	13-Jan-20	9:06	B-N fault. As per PMU, No fault observed.
		13-Jan-20	11:01	Y-B fault . As per PMU, Y-B fault is observed.
		17-Jan-20	5:22	Y-N fault. As per PMU, Y-N fault occurred and delayed clearance with no auto-reclosing observed.
8	400 KV Aligarh-Sikandrabad (UP) Ckt-1	06-Jan-20	4:52	B-N fault. As per PMU, No fault observed.
		20-Jan-20	2:25	B-N fault.As per PMU, No fault observed.
		20-Jan-20	2:25	Pole discrepancy at Jodhpur end.As per PMU, No fault observed.
9	400 KV Banda-Rewa Road (UP) Ckt-1	12-Jan-20	2:21	R-N fault.As per PMU, R-B fault is observed.
		17-Jan-20	20:27	R-N fault.As per PMU, R-B fault is observed.
		25-Jan-20	20:58	R-N fault.As per PMU, R-B fault is observed.
10	400 KV Bareilly-Unnao (UP) Ckt-2	03-Jan-20	14:13	R-N fault. As per PMU, R-N fault occurred and no auto-reclosing observed.
		11-Jan-20	2:38	400kv Banda orai ckt 2 tie cb CT busted. As per PMU, B-N fault followed by Y-N fault is observed.
		29-Jan-20	12:43	Tripped from Banda end. As per PMU, No fault observed.
11	400 KV Kishenpur-NewWanpoh (PG) Ckt-4	25-Jan-20	12:05	Y-N fault. As per PMU, Y-N fault occurred, no auto-reclosing observed.
		28-Jan-20	18:51	B-N fault. As per PMU, B-N fault occurred, no auto-reclosing observed.
		30-Jan-20	15:14	R-B fault. As per PMU, R-B fault is observed.
12	400 KV Merta-Heerapura (RS) Ckt-1	07-Jan-20	1:06	B-N fault. As per PMU, B-N fault and unsuccessful auto-reclosing with delayed clearance is observed.
		08-Jan-20	13:04	B-N fault; 97.3km from Kishenpur end. As per PMU, B-N fault and unsuccessful auto-reclosing with delayed clearance is observed.
		13-Jan-20	16:38	B-N fault. As per PMU, B-N fault and unsuccessful auto-reclosing with delayed clearance is observed..
13	400 KV Obra_B-Rewa Road (UP) Ckt-1	03-Jan-20	6:24	Y phase pole of 652 T CB Blasted. As per PMU, fluctuations observed in the phase voltages.
		15-Jan-20	16:49	R-N fault, 167.51km AT Merta end. As per PMU, R-N fault occurred and delayed clearance with no auto-reclosing observed.
		16-Jan-20	17:07	R-N fault. As per PMU, R-N fault occurred, no auto-reclosing observed.
14	400 KV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-1	03-Jan-20	0:31	Over voltage. As per PMU, No fault observed.
		03-Jan-20	16:59	Over voltage. As per PMU, No fault observed.
		11-Jan-20	2:38	Over voltage. As per PMU, B-N fault followed by Y-N fault is observed.
15	400 KV Suratgarh(RVUN)-Ratangarh(RS) (RS) Ckt-2	14-Jan-20	8:25	Y-N fault, 116.7km from Ratangarh end. As per PMU, R-N fault and no autoreclosing observed.
		18-Jan-20	23:58	B-N fault, 18.8km from Ratangarh end. As per PMU, R-N fault and no autoreclosing observed.
		24-Jan-20	23:48	B-N fault, 102.7km from Ratangarh end. As per PMU, Y-N fault and no autoreclosing observed.
16	765/400 kv 1500 MVA ICT 2 at Phagi(RS)	13-Jan-20	22:15	R-N fault, 52.5km from Ratangarh end. As per PMU, B-N fault and no autoreclosing observed.
		14-Jan-20	16:45	B-N fault. As per PMU, Y-N fault and no autoreclosing observed.
		19-Jan-20	3:32	R-N fault, 52.2km from Ratangarh end. As per PMU, B-N fault and no autoreclosing observed.
16	765/400 kv 1500 MVA ICT 2 at Phagi(RS)	06-Jan-20	17:22	NEUTRAL O/C PROT OPERATED.
		07-Jan-20	15:57	86A,86B,PRD.
		08-Jan-20	9:55	TRIPPED ON PRD .

S.No.	Region	Name of Elements (Tripped/Manually opened)	Owner/ Agency	Outage		Event (As reported)	Generation Loss (MW)	Load Loss (MW)	Category as per CEA Grid Standards	Energy Unsewed (in MU)	Preliminary Report receipt status			DR/EL receipt status		Detailed Report receipt status		Fault Clearance time (in ms)		
				Date	Time						within 24hrs	after 24hrs	Not Received	within 24hrs	after 24hrs	Not Received	Received		Not Received	
1	NR	1) 220 KV Debari(RS)-RAPS_A(INP) (RS) Ckt-1 2) 220 KV RAPS_B(INP)-Debari(RS) (PG) Ckt-1	POWERGRID, RRVPL	1-Jan-20	20:20	All 220kV lines and ICTs at 220kV Debari(RS) tripped due to Y-Ph. CT blast of 220kV Debari-Madri line at Debari end. As per PMU, Y-N fault with delayed clearance is observed in the system. In antecedent conditions, 220kV Debari-Amberi, 220kV Debari-Chittorgarh, 220kV Debari-RAPP A carrying 14MW, 82MW & 45MW respectively.	0	90	GD-1	0.14		Y(Raj)	Y(NPCL), Y(PG)		Y(Raj)	Y(NPCL), Y(PG)	Y(Raj)	240ms		
2	NR	1) 220 KV Mohana(HV)-Sonipat(PG) (HVPNL) Ckt-1 2) 220 KV Mohana(HV)-Sonipat(PG) (HVPNL) Ckt-2	HVPNL	2-Jan-20	9:55	220 KV Mohana(HV)-Sonipat(PG) (HVPNL) Ckt-1 & 2 tripped due R & Y- Phase CT of 220kV Mohana - Sampala ckt-2 damaged at Mohana end. As per PMU, R-N fault followed by R-Y fault with delayed clearance is observed in the system. In antecedent conditions, 220 KV Mohana(HV)-Sonipat(PG) (HVPNL) Ckt-1 & 2 carrying 137MW & 131MW respectively.	0	150	GD-1	0.23		Y(Har)	Y(PG)		Y(Har)	Y(PG)	Y(Har)	320ms		
3	NR	1) 220KV Samba(PG)-Hiranagar(PDD) (PG) Ckt-1 2) 220/132kV ICT 1 & ICT 2 at 220kV Hiranagar(JK)	POWERGRID	2-Jan-20	11:10	R-phase jumper snapped resulted in bus fault at 220KV Hiranagar(JK) and subsequent bus bar protection operation. This resulted in tripping of 220/132kV ICT 1 & ICT 2 at 220kV Hiranagar(JK) and load loss of approx 200MW. As per PMU, R-B fault with delayed clearance is observed in the system. In antecedent conditions, 220KV Samba(PG)-Hiranagar(PDD) (PG) Ckt-1 carrying 193MW.	0	200	GD-1	0.23					Y(JK), Y(PG)		Y(JK)	160ms		
4	NR	1) 400KV Bus 1 at Banda(UP) 2) 400 KV Banda-Oral (UP) Ckt-2 3) 400 KV Odra, B-Rewa Road (UP) Ckt-1 4) 400 KV Rewa Road-Masool (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	2:38	Due to 400KV Banda-Oral ckt 2 tie CB CT busted at Banda end, caused tripping of 400KV Bus 1 and 400KV Banda-Rewa road ckt 1 on Bus bar protection. Whereas at Rewa road, all the 400kv elements along with ICTs are connected on Bus 1 only, due to blast of CT at Banda, Bus 1 along with ICTs tripped on Bus bar protection at Rewa road. As per PMU, B-N followed by Y-N fault is observed in the system.	0	0	GI-2	0.00		Y(UP)			Y(UP)		Y(UP)	120ms		
5	NR	1) 400 KV Chamera_2(NH)-Chamera_1(NH) (PG) Ckt-1 2) 400 KV Chamera_2(NH)-Kishenpur(PG) (PG) Ckt-1 3) 220 KV Wagoora(PG)-Pampore(PDD) (PDD JK) Ckt-2 4) 220 KV Wagoora(PG)-Pampore(PDD) (PDD JK) Ckt-1	PDD JK, POWERGRID	13-Jan-20	13:21	220 KV Wagoora(PG)-Pampore(PDD) (PDD JK) Ckt-1 & 2 tripped on B-N fault and 400 KV Chamera_2(NH)-Chamera_1(NH) (PG) Ckt-1, 400 KV Chamera_2(NH)-Kishenpur(PG) (PG) Ckt-1 tripped on overvoltage. As per PMU, B-N fault with delayed clearance of 560ms is observed in the system. In antecedent conditions, 220 KV Wagoora(PG)-Pampore(PDD) (PDD JK) Ckt-1 & 2 carrying 121MW & 125MW respectively.	0	300	GD-1	0.00				Y(JK), Y(PG), Y(NHPC)		Y(JK), Y(PG), Y(NHPC)	Y(JK), Y(PG), Y(NHPC)	560ms		
6	NR	1) 220 kv Kishenganga(NH)-Wagoora(PG) (PG) Ckt-1 2) 220 kv Kishenganga(NH)-Wagoora(PG) (PG) Ckt-2	POWERGRID	16-Jan-20	9:18	220 KV Kishenganga(NH)-Wagoora(PG) (PG) Ckt-2 tripped on R-N fault and 220 KV Kishenganga(NH)-Wagoora(PG) (PG) Ckt-1 tripped on B-N fault. As per PMU, R-B fault is observed in the system. In antecedent conditions, 220 KV Kishenganga(NH)-Wagoora(PG) (PG) Ckt-1 & 2 carrying 9MW & 8MW respectively.	0	0	GI-2	0.00			Y(NHPC)	Y(PG)		Y(NHPC)	Y(PG)	Y(PG)	80ms	
7	NR	1) 400 KV Moga-Hissar (PG) Ckt-2 2) 765/400 kv 1500 MVA ICT 1 at Moga(PG)	POWERGRID	20-Jan-20	20:12	400 KV Moga-Hissar (PG) Ckt-2 & 765/400 kv 1500 MVA ICT 1 at Moga(PG) tripped due to relay maloperation. As per PMU, fluctuations observed in the phase voltages. In antecedent conditions, 765/400 kv 1500 MVA ICT 1 at Moga(PG) carrying 292MW.	0	0	GI-2	0.00			Y(PG)			Y(PG)		Y(PG)	NA	
8	NR	1) 400 KV Anpara-Sarnath (UP) Ckt-1 2) 400/220 kv 315 MVA ICT 1 at Sarnath(UP)	UPPTCL	26-Jan-20	12:32	400 KV Anpara-Sarnath (UP) Ckt-1 tripped due to R-B fault. At the same time, 400/220 kv 315 MVA ICT 1 at Sarnath(UP) also tripped. As per PMU, R-B fault with delayed clearance of 440ms is observed. In antecedent conditions, 400 KV Anpara-Sarnath (UP) Ckt-1 & 400/220 kv 315 MVA ICT 1 at Sarnath(UP) carrying 405MW & 123MW respectively.	0	0	GI-2	0.00			Y(UP)			Y(UP)		Y(UP)	440ms	
9	NR	1) 400/220 kv 315 MVA ICT 2 at Malerkotla(PG) 2) 400/220 kv 500 MVA ICT 3 at Malerkotla(PG)	POWERGRID	27-Jan-20	14:44	220 KV BUS BAR protection operated at Malerkotla PSTCL Sub-station resulting in tripping of 400/220 kv 315 MVA ICT 2 & 500MVA ICT 3 at Malerkotla(PG). As per PMU, R-N fault is observed in the system. In antecedent conditions, 400/220 kv 315 MVA ICT 2 & 500MVA ICT 3 at Malerkotla(PG) carrying 80MW & 123MW respectively.	0	300	GD-1	1.03			Y(PG), Y(Pun)		Y(PG), Y(Pun)		Y(PG), Y(Pun)	80ms		
10	NR	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-Patala (PG) Ckt-1	POWERGRID	28-Jan-20	19:27	At 220kV Substation Malerkotla all 220kV elements tripped from Remote end due to damage of 220kV Dhuri 2 upper Bus Bar insulator string of R phase at 1927hrs during heavy rain and lightning. As per PMU, R-N fault with delayed clearance of around 2320ms is observed in the system. In antecedent conditions, 315 MVA ICT 1, 315 MVA ICT 2 & 500 MVA ICT 3 at 400/220kV Malerkotla(PG) carrying 75MW, 70MW & 114MW respectively.	0	250	GD-1	0.46		Y(PG)		Y(Pun)		Y(PG)	Y(Pun)	Y(PG)	Y(Pun)	2320ms
11	NR	1) 400/220 kv 315 MVA ICT 1 at Chittorgarh(RS) 2) 400/220 kv 315 MVA ICT 2 at Chittorgarh(RS)	RRVPL	29-Jan-20	9:01	315 MVA ICT 1 & 315 MVA ICT 2 at 400/220kV Chittorgarh(RS) tripped on overloading. As per PMU, no fault is observed in the system. In antecedent conditions, 315 MVA ICT 1 & 315 MVA ICT 2 at 400/220kV Chittorgarh(RS) carrying 305MW & 300MW respectively.	0	400	GD-1	0.51			Y(Raj)			Y(Raj)		Y(Raj)	NA	
12	NR	1) 400 KV Bareilly-Unnao (UP) Ckt-2 2) 400/220 kv 315 MVA ICT 2 at Bareilly(UP)	UPPTCL	30-Jan-20	15:14	400 KV Bareilly-Unnao (UP) Ckt-2 tripped on R-B fault. At the same time, 315 MVA ICT 2 at 400/220kV Bareilly(UP) tripped due to operation of Backup Overcurrent Protection on HV side. As per PMU, R-B fault is observed in the system. In antecedent conditions, 400 KV Bareilly-Unnao (UP) Ckt-2 & 315 MVA ICT 2 at 400/220kV Bareilly(UP) carrying 254MW & 65MW respectively.	0	0	GI-2	0.00			Y(UP)			Y(UP)		Y(UP)	80ms	

Northern Regional inter regional lines tripping for Jan-20

Annexure-B.VI

S. No.	Name of Transmission Element Tripped	Owner/ Utility	Outage		Load Loss/	Brief Reason (As reported)	Category as per CEA Grid	Restoration		# Fault Clearance Time	*FIR Furnished	DR/EL provided	Other Protection Issues and Non	Suggestive Remedial Measures	Remarks
			Date	Time				Date	Time						
1	400 KV Varanasi-Biharshariff (PG) Ckt-2	POWERGRID	2-Jan-20	11:22	Nil	DT received at Varanasi end.	NA	2-Jan-20	12:00	NA	YES(After 24Hrs)	YES(After 24Hrs)			From PMU, No fault observed in the system.
2	220 KV Sahupuri(UP)-Pusauli(BS) (UP)	UPPTCL	14-Jan-20	6:30	Nil	B-N fault.	NA	14-Jan-20	11:37	NO	NO	NO		Details of tripping yet to be received.	From PMU, No fault observed in the system.
3	220 KV Ranpur(RS)-Bhanpura(MP) (RS)	RRVPL	16-Jan-20	10:30	Nil	R-N fault.	NA	16-Jan-20	13:00	NA	YES	YES(After 24Hrs)	No auto-reclosing observed.		From PMU, No fault observed in the system.
4	220 KV Auraiya(NT)-Mehgaon(MP) (PG)	POWERGRID	20-Jan-20	7:49	Nil	R-N fault , Z-1, 34.43 KM from Auraiya(NT) end.	NA	20-Jan-20	9:12	NA	NO	NO	No auto-reclosing observed.	Details of tripping yet to be received.	From PMU, R-N fault observed and auto-reclosing not observed.
5	220 KV Auraiya(NT)-Mehgaon(MP) (PG)	POWERGRID	28-Jan-20	9:11	Nil	Y-N fault.	NA	28-Jan-20	9:26	NA	NO	NO		Details of tripping yet to be received.	From PMU, No fault observed in the system.
6	132 KV Rihand(UP)-Garwa(JS) (UP)	UPPTCL	3-Jan-20	6:03	Nil	B-N fault.	NA	3-Jan-20	8:01	NA	NO	NO	No auto-reclosing observed.	Details of tripping yet to be received.	From PMU, B-N fault observed and auto-reclosing not observed.
7	132 KV Rihand(UP)-SoneNagar(BS) (UP)	UPPTCL	29-Jan-20	13:17	Nil	Y-N fault.	NA	30-Jan-20	23:15	NA	NO	NO		Details of tripping yet to be received.	From PMU, No fault observed in the system.
# Fault Clearance time has been computed using PMU Data from nearest node available and/or DR provided by respective utilities															
*Yes, if written Preliminary report furnished by constituent(s)															
R-Y-B phase sequencing (Red, Yellow, Blue) is used in the list content.All information is as per Northern Region unless specified.															
^^ tripping seems to be in order as per PMU data, reported information. However, further details may be awaited.															
Reporting of Violation of Regulation for various issues for above tripping															
1	Fault Clearance time(>100ms for 400kV and >160ms for 220kV)	1. CEA Grid Standard-3.e 2. CEA Transmission Planning Criteria													
2	DR/EL Not provided in 24hrs	1. IEGC 5.2(r) 2. CEA Grid Standard 15.3													
3	FIR Not Furnished	1. IEGC 5.9.6.a 2. CEA Grid Standard 12.2 (Applicable for SLDC, ALDC only)													
4	Protection System Mal/Non Operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.A 2. CEA (Technical Standards for connectivity to the Grid) Regulation, 2007: Schedule Part 1. (6.1, 6.2, 6.3)													
5	A/R non operation	1. CEA Technical Standard of Electrical Plants and Electric Lines: 43.4.C 2. CEA Technical Planning Criteria													

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