U.P. Power Transmission Corporation Limited
उ0 प्र0 पावरट्रान्समिशनकार्पोरेशनलिमिटेड

(उ0 प्र0 सरकारका उपक्रम)

कार्यालय ::
निदेशक (नियोजनएवंवाणिज्य)
5वांतल, शक्तिभवन,
14–अशोक मार्ग, लखनऊ–226001
रैक्स–8511फोन नं0–0522 2288530

CIN No.- U40101UP2004SGC028687
GSTIN- 09AAACU8823E1Z9

Office of the
Director (Planning&Commercial)
5th floor, Shakti Bhawan,
14- Ashok Marg, Lucknow-226001
Phone- 0522 2218511
Email- Director_comm @upptcl.org

No. 805 Dir(P&C)/UPPTCL/2022 Date: 19th Novmber, 2022

To,
The Secretary
Central Electricity Regulatory Commission
3rd & 4th Floor, Chanderlok Building
36, Janpath, New Delhi- 110001.

Sub: Petition for Truing up Tariff for 2014-19 tariff block and for determination of transmission tariff for 2019-24 tariff block in respect of Uttar Pradesh Power Transmission Corporation Limited (UPPTCL) owned Transmission Lines/System conveying electricity to other States.

Sir,

This application is filed under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations'1999 and Regulation-8 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations'2014 for determination of Truing up Tariff for 2014-19 tariff block and Regulation-9 of Central Electricity Regulatory Commission (Term and Condition of Tariff) Regulation' 2019 for determination of transmission tariff for 2019-24 tariff block may please be registered. The applicable filing fee is already submitted to the Hon'ble Commission and details of the same are provided in the attached Form I.

Submitted for kind consideration of Hon'ble Commission please.

Thanking you,

Encl:- As Above (1+2 Copies)

Yours Faithfully,

Manoj Singh
Superintending Engineer,
Attach to
Director (Planning & Commercial),

CC:

1- PS to Managing Director, UPPTCL.
2- Director (P&C), UPPTCL, Lucknow.

BEFORE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

PETITION NO. ...../TT/2022

Petition For:

Approval under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations'1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2014 for Truing up Transmission Tariff for 2014-19 Tariff Block and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2019 for determination of Transmission Tariff for 2019-24 Tariff Block for in respect of Uttar Pradesh Power Transmission Corporation Limited (UPPTCL) owned Transmission Lines/System conveying electricity to other States.

PETITION NO. _____

TRUING UP TARIFF FOR CONTROL PERIOD 2014–2019 AND TARIFF FOR CONTROL PERIOD 2019-24

Uttar Pradesh Power Transmission Corporation Limited

Registered Office:

5th Floor, Shakti Bhawan,

14 Ashok Marg, Lucknow – 226001 (Uttar Pradesh)

(मनोज सिंह)
अधिशासी अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
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BEFORE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

PETITION NO. ...../TT/2022

Petition For:

Approval under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations'1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2014 for Truing up Transmission Tariff for 2014-19 Tariff Block and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2019 for determination of Transmission Tariff for 2019-24 Tariff Block for in respect of Uttar Pradesh Power Transmission Corporation Limited (UPPTCL) owned Transmission Lines/System conveying electricity to other States.

Uttar Pradesh Power Transmission Corporation Limited,
5th Floor, Shakti Bhawan, 14 Ashok Marg,
Lucknow – 226001 (Uttar Pradesh) **Petitioner**

Power Grid Corporation of India Ltd.,
Saudamini, Plot No.2. Sector-29, Near IFFCO Chowk,
Gurgaon (Haryana)- I 2200 I and Others **Respondent**

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FILED BY
Uttar Pradesh Power Transmission Corporation Limited

Represented by

Manoj Singh
Superintending Engineer,
Attach to
Director (Planning & Commercial)

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
उ०प्र०पा०ट्रा०का०लि०

Place: Lucknow
Dated: 19th November 2022

U.P. Power Transmission Corporation Limited
उ0 प्र0 पावरट्रान्समिशनकार्पोरेशनलिमिटेड
(उ0 प्र0 सरकारका उपकम)

कार्यालय :
निदेशक (नियोजनएवंवाणिज्य)
5वांतल, शक्तिभवन,
14–अशोक मार्ग, लखनऊ–226001
फैक्स–8511फोन नं0–0522 2288530

CIN No.- U40101UP2004SGC028687
GSTIN- 09AAACU8823E1Z9

Office of the
Director (Planning&Commercial)
5th floor, Shakti Bhawan,
14- Ashok Marg, Lucknow-226001
Phone- 0522 2218511
Email- Director_comm @upptcl.org

No. 805 Dir(P&C)/UPPTCL/2022 Date: 19th Novmber, 2022

To,
The Secretary
Central Electricity Regulatory Commission
3rd& 4th Floor, Chanderlok Building
36, Janpath, New Delhi- 110001.

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Thanking you,

Encl:- As Above (1+2 Copies)

Yours Faithfully,

Manoj Singh
Superintending Engineer,
Attach to
Director (Planning & Commercial),

CC:
1- PS to Managing Director, UPPTCL.
2- Director (P&C), UPPTCL, Lucknow.

BEFORE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

PETITION NO. ……/TT/2022

Petition For:

Approval under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations'1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2014 for Truing up Transmission Tariff for 2014-19 Tariff Block and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2019 for determination of Transmission Tariff for 2019-24 Tariff Block for in respect of Uttar Pradesh Power Transmission Corporation Limited (UPPTCL) owned Transmission Lines/System conveying electricity to other States.

Uttar Pradesh Power Transmission Corporation Limited,
5th Floor, Shakti Bhawan, 14 Ashok Marg,
Lucknow – 226001 (Uttar Pradesh) **Petitioner**

Vs

1. **Power Grid Corporation of India Ltd.,**
   Saudamini, Plot No.2. Sector-29, Near IFFCO Chowk,
   Gurgaon (Haryana)- I 2200 I

2. **U.P. Power Corporation Limited (UPPCL)**
   Shakti Bhawan, 14 Ashok Marg, Lucknow- 226001
   Represented by Managing Director

3. **Noida Power Company Ltd., (NPCL)**
   Commercial Complex, H Block, Alpha -II Sector
   Greater Noida City- 201308

4. **Delhi Transco Ltd.**
   Shakti Sadan, Kotla Road, New Delhi- 110002

(मनोज सिंह)
अधिशासी अभियन्ता
सम्बद्ध निदेशक (विद्युत क्रय परियोजना)
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5. **Power Transmission Corporation of Uttarakhand Ltd.**
   Basant Vihar Enclave, Dehradun-248002

6. **Rajsthan Rajya Vidyut Pareshan Nigam Ltd**
   Vidyut Bhawan, Vidyut Marg, Jaipur- 302005

7. **Bihar State Power Transmission Company Ltd.**
   Vidyut Bhawan, Bailey Road, Patna -l- 800001

8. **MP Power Transmission Company Limited**
   Block No.2, Shakti Bhawan, Rampur, Jabalpur 482 008 (M.P.)

___ **Respondents**

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
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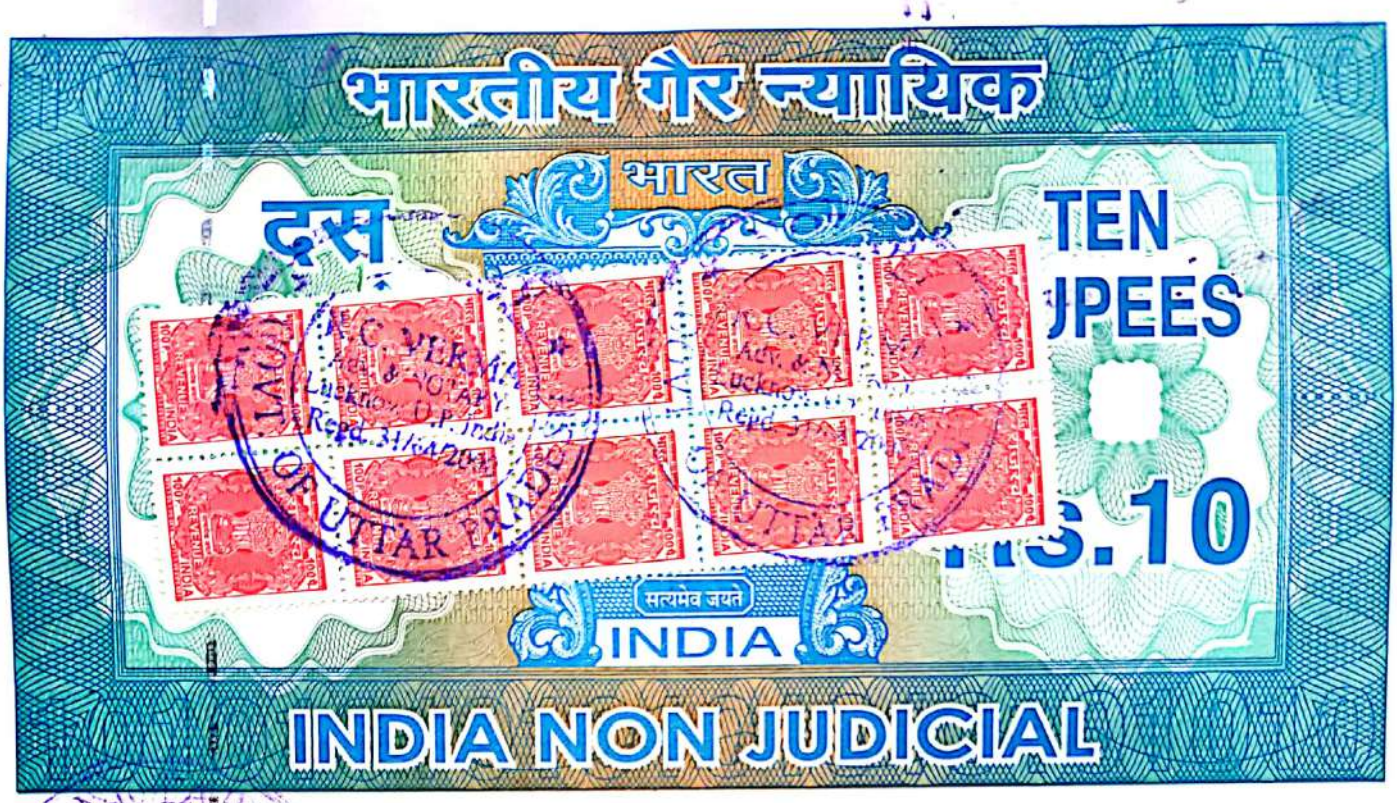

उत्तर प्रदेश UTTAR PRADESH 65AE 192725

Affidavit on behalf of Uttar Pradesh Power Transmission Corporation Limited

I, Shri Manoj Singh S/o Dr. U. B. Singh, aged 56 years, having my office at 5th Floor, Shakti Bhawan, 14 Ashok Marg, Lucknow – 226001 (Uttar Pradesh) do solemnly affirm and say as follows: -

1. I am the Superintending Engineer, (Planning & Commercial) of the Uttar Pradesh Power Transmission Corporation Limited and the Petitioner in the above matter and I am duly authorized by the said petitioner to make this affidavit.

2. I submit that an enclosed Petition is being filed for Determination of tariff in respect of UPPTCL owned Transmission Lines/System conveying electricity to other States for the period from 1st April, 2019 to 31st March, 2024 in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019. Further, it is also filed for True-Up tariff for Tariff period 2014-19,

3. I submit that no other Petition except this Petition has been filed directly or indirectly for approval of tariff in respect of UPPTCL owned Transmission Lines/System conveying electricity to other States for the period from 1st April, 2019 to 31st March, 2024 and True-Up tariff for Tariff period 2014-19.

4. The statements made in the enclosed submission are based on the information from the concerned officers of the organization and I believe them to be true.

Sworn and Verified
Before me

R.C. VERMA
Adv. & NOTARY
Lucknow U.P. INDIA
Regd No 31/64/2006
29/9/2022

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्पद निदेशक (नियोजन एवं वाणिज्य)
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5. I say that there are no proceedings pending in any court of law tribunal or arbitrator or any other authority, wherein the Petitioners are a party and where issues arising and/or reliefs sought are identical or similar to the issues arising in the matter pending before the Hon'ble Commission.

I solemnly affirm at Lucknow on this 28th day of September 2022 that the contents of the above affidavit are true to my knowledge, no part of it is false, and nothing material has been concealed there from.

(मनोज सिंह)
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Identified before me:

Superintending Engineer,
(Planning & Commercial)
UPPTCL, Lucknow

Date: 28th September 2022

NOTARY
R.C. VERMA
Adv. & NOTARY
Collectorate Court
Lucknow (U.P.) INDIA

SIGNATURE ATTESTED
R.C. VERMA
Adv. & NOTARY
Collectorate Court
Lucknow (U.P.) INDIA
28/9/2022

BEFORE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

PETITION NO. ...../TT/2022

Petition For:

Approval under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations'1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2014 for Truing up Transmission Tariff for 2014-19 Tariff Block and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2019 for determination of Transmission Tariff for 2019-24 Tariff Block for in respect of Uttar Pradesh Power Transmission Corporation Limited (UPPTCL) owned Transmission Lines/System conveying electricity to other States.

Uttar Pradesh Power Transmission Corporation Limited,
5th Floor, Shakti Bhawan, 14 Ashok Marg,
Lucknow – 226001 (Uttar Pradesh) **Petitioner**

Power Grid Corporation of India Ltd.,
Saudamini, Plot No.2. Sector-29, Near IFFCO Chowk,
Gurgaon (Haryana)- 122001 and Others **Respondent**

MOST RESPECTFULLY SHOWETH:

1. The Petitioner, Uttar Pradesh Power Transmission Corporation Limited, incorporated in 2006 under the Companies Act 1956, having its registered office at Shakti Bhawan, 14 Ashok Marg, Lucknow – 226001 (Uttar Pradesh) .

2. UPPTCL is also a State Transmission Utility in the State of Uttar Pradesh with a dedicated responsibility of planning, developing, operating and maintaining the State Transmission System to facilitate transmission of electricity from its source to load centers.

3. In pursuance of the reforms and restructuring, Uttar Pradesh Power Corporation Limited (UPPCL) was formed as a successor entity of the erstwhile Uttar Pradesh State Electricity

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Board (UPSEB) through the first statutory transfer scheme notified by the State Government of Uttar Pradesh on 14.01.2000 to manage the transmission and distribution business within the state. Subsequently, the State Government notified the second transfer scheme on 12.08.2003 wherein UPPCL retained the transmission, SLDC and Bulk Supply business of the state with itself, while transferring the distribution and retails supply of the state to the four distribution companies.

4. Under this scheme, the role of UPPCL was specified as "Bulk Supply Licensee" as per the license granted by the Uttar Pradesh Electricity Regulatory Commission (UPERC) and as "State Transmission Utility". Subsequently, the Uttar Pradesh Power Transmission Corporation Limited (UPPTCL), was incorporated under the Companies Act, 1956. Further, Government of Uttar Pradesh vide notification dated 18.07.2007 notified UPPTCL as STU of Uttar Pradesh. Subsequently, on 23.12.2010, the Government of Uttar Pradesh notified the Uttar Pradesh Electricity Reforms Scheme, 2010 which provided for the transfer of assets and Liabilities from UPPCL to UPPTCL. The UPPTCL is entrusted with the business of transmission of electricity energy to various utilities within the state of Uttar Pradesh.

5. The Hon'ble Commission in its order dated 14.03.2012 in Petition No. 15/SM/2012 had identified 11 (eleven) regional transmission lines and three (3) inter-regional lines as mentioned below, for inclusion in the PoC transmission charges computation and directed UPPTCL to file petition accordingly:

S. No.	Name of Line	Connecting States	CERC Ref No.
1	400KV line from Roorkee-Muzaffarnagar	Uttarakhand-Uttar Pradesh	NR-1
2	220 KV line from Khodri-Saharanpur-1	Uttarakhand-Uttar Pradesh	NR-2
3	220 KV line from Khodri-Saharanpur-2	Uttarakhand-Uttar Pradesh	NR-3
4	400KV line from Kashipur-Moradabad	Uttarakhand-Uttar Pradesh	NR-4
5	220KV line from Pantnagar-Bareilly	Uttarakhand-Uttar Pradesh	NR-5
6	220KV line from Patarganj-Sahibabad	Delhi-Uttar Pradesh	NR-6
7	220KV line from Gazipur-Noida Sec.-62	Delhi-Uttar Pradesh	NR-7
8	220KV line from Bharatpur-Agra	Rajasthan-Uttar Pradesh	NR-8
9	220KV line from Noida-Gazipur-BTPS	Uttar Pradesh- Delhi	NR-20
10	400KV line from Manduala-Bawana-1	Uttar Pradesh- Delhi	NR-24
11	400KV line from Manduala-Bawana-2	Uttar Pradesh- Delhi	NR-25

(मनोज सिंह)
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सलाहकार निदेशक (नियोजन एवं वाणिज्य)
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S. No.	Name of Line	Connecting States	CERC Ref No.
12	220KV line from Pusauli-Sahupuri	Power Grid (ER)-Uttar Pradesh	IR-9
13	220KV line from Malanpur-Auraiya	Madhya Pradesh - Uttar Pradesh	IR-10
14	220KV line from Meghgaon-Auraiya	Madhya Pradesh - Uttar Pradesh	IR-11

6. Excluding Line No. NR-24, NR-25, IR-10 & IR-11 since not owned and maintained by UPPTCL, for remaining lines UPPTCL had filed Petition No.286/TT/2013 for determination of tariff for inclusion in PoC charges as noted below:

S. No.	CERC Ref. No.	Asset	Type of line	S/C or D/C	Voltage(KV)	No. of Bay maintained by UPPTCL	Line Length(ckm.)	Remarks (Ownership with UPPTCL)
1	NR-1	400KV Roorkee-Muzaffarnagar	AC	S/C	400	1	70.80	------
2	NR-2	220KV SC Khodri-Saharanpur-1 Line	AC	S/C	220	1	83.33	83.33km
3	NR-3	220KV SC Khodri-Saharanpur-2 Line	AC	S/C	220	1	81.05	81.05km
4	NR-4	400KV Moradabad-Kashipur Line	AC	S/C	400	1	110.89	-----
5	NR-5	220KV SC Bareilly-Pantnagar Line	AC	S/C	220	1	5.50	5.501km
6	NR-6	220KV DC Sahibabad-Patarganj Line	AC	D/C	220	2	7.00	7.002km
7	NR-7	220KV SC Noida Sec 62-Ghazipur Line	AC	S/C	220	1	3.00	3.00km
8	NR-8	220KV Bharatpur-Agra Line	AC	S/C	220	1	49.00	------
9	NR-20	220KV SC Noida Sec 20-Ghazipur Line	AC	S/C	220	-	4.35	4.354km
10	NR-20	220KV SC Noida Sec 20-BTPS Line	AC	S/C	220	1	13.30	13.303km
11	IR-9	220KV SC Sahupuri Pasuali Line	AC	S/C	220	1	72.00	36.70km

7. Subsequently, Hon'ble Commission, vide order dated 15.02.2016 in Petition No. 286/TT/2013 determined and allowed the annual transmission charges to be considered in YTC as per Sharing of inter-State Transmission Charges and Losses Regulation, 2010 for following lines:

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S. No.	CERC Ref. No.	Asset	Type of line	S/C or D/C	Voltage(KV)	No. of Bay maintained by UPPTCL	Line Length (ckm.)	Remarks (Ownership with UPPTCL)
1	NR-2	220KV SC Khodri-Saharanpur-1 Line	AC	S/C	220	1	83.33	83.33 km
2	NR-3	220KV SC Khodri-Saharanpur-2 Line	AC	S/C	220	1	81.05	81.05 km
3	NR-5	220KV SC Bareilly-Pantnagar Line	AC	S/C	220	1	5.50	5.501 km
4	NR-6	220KV DC Sahibabad-Patarganj Line	AC	D/C	220	2	7.00	7.002 km
5	NR-7	220KV SC Noida Sec 62-Ghazipur Line	AC	S/C	220	1	3.00	3.00 km
6	NR-20	220KV SC Noida Sec 20-Ghazipur Line	AC	S/C	220	-	4.35	4.354 km
7	NR-20	220KV SC Noida Sec 20 BTPS Line	AC	S/C	220	1	13.30	13.303 km
8	IR-9	220KV SC Sahupuri-Pasauli Line	AC	S/C	220	1	72.00	36.70 km

8. Further, the 220 kV Muzaffarnagar (Nara)-Roorkee line was identified and certified by the NRPC as assets of non ISTS licensees being used for inter-State transmission in accordance with Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulation, 2010. NRPC vide letter no. NRPC/SE(C)/Implementation Committee/2010 dated 22.10.2010 issued the record of discussion of meeting held on 13.10.2010 at NRPC, New Delhi regarding identification of assets of non-ISTS licensees being used for inter-state transmission. The copy of the NRPC minutes is provided in the **Annexure 1**.

9. Subsequently, the Petitioner had sought approval of tariff for the 220 kV Muzaffarnagar (Nara)-Roorkee line in the Petition No. 168/TT/2016, in compliance of the Commission's order dated 15.02.2016 in Petition No. 286/TT/2013.

10. Accordingly, the Hon'ble Commission vide order dated 19.12.2017 in Petition No. 168/TT/2016 had approved the tariff for the following 9 ISTS lines:-

S. No.	Name of Line	COD	Line length (in Ckt-km)
1	220 kV Roorkee - Muzaffarnagar Line	17.9.1979	58.000

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S. No.	Name of Line	COD	Line length (in Ckt-km)
2	220 kV SC Khodri-Saharanpur-1 Line	12.4.1972	83.330
3	220 kV SC Khodri-Saharanpur-2 Line	31.3.1980	81.050
4	220 kV SC Bareilly-Pantnagar Line	4.3.2003	5.501
5	220 kV DC Sahibabad-Patparrganj Line	31.3.1983	7.002
6	220 kV SC Noida Sec 62-Gazipur Line	26.3.2009	3.000
7	220 kV SC Noida Sec 20-Gazipur Line	31.3.1983	4.354
8	220 kV SC Noida Sec 20 BTPS Line	30.9.1985	13.303
9	220 kV SC Sahupuri-Pasauli Line	26.4.1979	36.700

11. Further, during the 34th Meeting of Technical Coordination Sub-Committee & 38th Meeting of Northern Regional Power Committee, the following lines were identified as natural Interestate lines and which are not required to be certified as ISTS:

S. No.	Name of the Transmission Line	Owner STU
1	220kV S/C Chirawa – Hissar Line	RVPN
2	132KV S/C Sadalpur (Rajgarh)-Hissar line	RVPN
3	132KV S/C Khandar-Sheopur line	RVPN
4	132KV S/C Amrapura-Sirsa Line	RVPN
5	220 KV Muzaffarnagr(Nara)-Roorkee	UPPTCL
6	132 KV SAHUPURI-KARMNASHA	UPPTCL
7	132 KV CHANDAULI- KARMNASHA	UPPTCL
8	132 KV Kiratpur-Manglore	UPPTCL
9	132 KV Chandak-Luksar	UPPTCL
10	132 KV Afzalgarh-Kalagarh	UPPTCL
11	132 KV Dhampur-Kalagarh	UPPTCL
12	132 KV LALITPUR-RAJGHAT	UPPTCL
13	132 KV ANPARA-MORWA	UPPTCL
14	132 KV BINA-MORWA	UPPTCL
15	220 kV Sarna-Udhampur	PSTCL
16	132 kV HPSEB TAP (Kangra-Kangra PS)	PSTCL

12. A copy of the 34th Meeting of Technical Coordination Sub-Committee & 38th Meeting of Northern Regional Power Committee agenda and minutes are provided in the **Annexure 2 & 3** respectively.

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13. However, the above lines (S. No. 6 to 14) were not considered by the Hon'ble Commission while approving the tariff for the ISTS lines of UPPTCL in the order dated 19.12.2017 in Petition No. 168/TT/2016.

14. The Petitioner in the current petition has considered the above lines of UPPTCL and is seeking Truing up Tariff for 2014-19 tariff block and determination of transmission tariff for 2019-24 tariff block for the following 18 (eighteen) ISTS lines:

Asset No.	DOCO	Line Name	Voltage Level (kV)	Line Length (Ckt kms)
Asset I	17-Sep-79	220 kV Muzaffarnagar (Nara)-Roorkee line	220	58.00
Asset II	12-Apr-72	220 kV SC Khodri-Saharanpur-1 Line	220	83.33
Asset III	31-Mar-80	220 kV SC Khodri-Saharanpur-2 Line	220	81.05
Asset IV	4-Mar-03	220 kV SC Bareilly - Pantnagar Line	220	5.50
Asset V	31-Mar-83	220 kV DC Sahibabad-Patparganj Line	220	7.00
Asset VI	26-Mar-09	220 kV SC Noida Sec 62-Gazipur Line	220	3.00
Asset VII	31-Mar-83	220 kV SC Noida Sec 20-Gazipur Line	220	4.35
Asset VIII	30-Sep-85	220 kV SC Noida Sec 20-BTPS Line	220	13.30
Asset IX	26-Apr-79	220 kV SC Sahupuri-Pasauli Line	220	36.70
Asset X	1-Jan-1962	132 KV SAHUPURI-KARMNASHA	132	38.40
Asset XI	1-Jan-1992	132 KV CHANDAULI-KARMNASHA	132	17.70
Asset XII	1-Jan-1964	132 KV Kiratpur-Manglore	132	72.00
Asset XIII	1-Jan-1964	132 KV Chandak-Luksar	132	32.00
Asset XIV	1-Jan-1975	132 KV Afzalgarh-Kalagarh	132	6.09
Asset XV	1-Jan-1975	132 KV Dhampur-Kalagarh	132	45.00
Asset XVI	1-Jan-1995	132 KV LALITPUR-RAJGHAT	132	25.00
Asset XVII	1-Jan-1985	132 KV ANPARA-MORWA	132	11.50
Asset XVIII	1-Jan-1978	132 KV BINA-MORWA	132	11.50

Capital Cost of Lines:

15. All the natural ISTS lines of UPPTCL were constructed at different time prior to 2011. Hence, the cost of these lines are not identifiable in the books of UPPTCL account

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separately. These lines are maintained by UPPTCL to keep them active and with 100% availability to transmit the power at their rated capacity. The Hon'ble Commission in its order dated 19.12.2017 in petition No. 168/TT/2016 has also observed the difficulty faced by other state petitioners also in case of the ISTS lines as below:

> *"13. Commission has, in general, observed that petitioner States have been submitting the necessary information, required for determining the annual transmission charges of their inter-state transmission lines, in contrasting manner thereby causing divergence in working out the tariff. In some cases it was observed that the data related to funding and depreciation was not available and in other cases the assets have already completed, or nearing, their useful life. In most of the petitions, the states have expressed their inability in furnishing the audited capital cost of transmission lines where the lines are older. In such a scenario, tariff workings for older assets are believed to be ending in skewed results. It has been observed that the YTC figures emerging out by the existing methodology are on the higher side.*
>
> ..
>
> ....."

16. Accordingly, the Hon'ble Commission in the said order has designed a methodology for allowing the tariff of the ISTS lines as indicated below:

> "...
>
> .....
>
> *Considering these facts, Commission has conceptualized a modified methodology for determining the tariff of States' Interestate transmission lines.*
>
> *14. The methodology is broadly based on the following:*
> *(a) PGCIL's Annual Report data has been used as the reference data; based on which, year wise benchmark cost has been derived.*
> *(b) Useful life of TL shall be considered as 25 years. Thus, if life is more than or equal to 25 years as on 01.04.2014, only O & M and Interest on Working Capital (IWC) shall be allowed as per the existing Tariff Regulations, in lieu of complete tariff.*
> *(c) It is expected that the States do have the audited financial data of recently commissioned (i.e. on or after 01.04.2014) lines."*

17. Further, for estimating the capital cost of the ISTS lines the Hon'ble Commission in the order dated 19.12.2017 in Petition No. 168/TT/2016 has observed the following methodology:

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"15. As per the petitions filed by the states, their ISTS lines generally have the configuration of 132 kV, 220 kV or 400 kV. In the absence of an established tariff data base, in order to develop this methodology Annual Reports of PGCIL from 1989-90 to 2013-14 have been referred to. The Annual Reports depict, inter alia, the information pertaining to year wise total transmission lines' length in ckt-km and corresponding Gross Block. This pan-India data represents all the five transmission regions and is a composite mix of parameters like terrains, wind-zones, tower and conductor type etc. +/- 500 kV HVDC and 765 kV & above voltage level AC lines too have come up in between and the data also includes those lines. Voltage level-wise data as on 30th April 2017, obtained from PGCIL indicates that the percentage of 220 kV, 132 kV and 66 kV TL taken together makes it around 8.3 % of the total line length owned by PGCIL. Further, 132 kV TLs were established in NER prior to 1990, and Transmission Lines of 220 kV voltage levels were last commissioned in around the year 2004 in NR. Majority of the transmission lines consist of 400 kV which corresponds to 66% of the total transmission line lengths. Thus, the 400 kV and lesser voltage levels account for approximately 75% of the transmission lines. Assuming the above referred spread of voltage wise percentages for earlier years too, it can be said that the year wise average TL cost figures derived from PGCIL data, when further reduced by 25%, fairly represent the average transmission line capital cost corresponding to a 400 kV S/C line. Considering 400 kV S/C transmission line cost as reference cost, Analysis of PGCIL's indicative cost data (P/L Feb 2017) suggests the following:

S. No.	Reference cost of 400 kV S/C TL	Rs X lakh/km
1	400 kV D/C TL	1.39 X
2	220 kV D/C TL	0.57 X
3	220 kV S/C TL	0.36 X
4	132 kV D/C TL	0.43 X
5	132 kV S/C TL	0.31 X

Therefore, for arriving at the costs of transmission lines of other voltage levels and circuit configurations, the average TL cost data shall be multiplied by the factors illustrated in the above table. Lower voltage levels can be treated as part of 132 kV. The above table contemplates Twin Moose conductor which is widely used in States' transmission lines.

16. Based on respective year end data, average transmission line length during the year has been worked out. Difference between a particular year's average TL length figures and that for the immediate preceding year provides us the transmission line length added during that year. Average gross block corresponding to transmission lines has been divided by the average TL length to arrive at the Average Cost of TL (in Rs lakh per ckt-km) during the year. Thus, considering the year of COD of a state's ISTS line and its ckt-km, its cost would be worked out by relating it to PGCIL's TL cost during that year. Although the Commission has relied on PGCIL's Annual Reports, there are

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certain deviations in the cost data worked out. The year 1989-90 was the year of incorporation for PGCIL, and the transmission assets of NTPC, NHPC, NEEPCO etc were taken over by PGCIL by mid-1991-92. Thus, as the base data for these years was not available, the corresponding average cost of TL could not be worked out. The average cost from 1992-93 onwards up to 2013-14 shows an increasing trend at a CAGR of 5.17%. Therefore, for the years 1989-90, 1990-91 and 1991-92, the average cost of TL has been back derived considering the 1992-93 average cost. Similarly, abnormal dip/spikes in the TL cost for the years 1996-97, 2001-02 and 2004-05 has been corrected by considering the average values of the TL costs in the immediate preceding and succeeding years."

18. Out of the 18 ISTS lines for which the tariff is claimed under this petition, the Petitioner has claimed the O&M expenses and O & M and Interest on Working Capital (IoWC) expenses only for the 16 lines which have competed their useful life, in line with the methodology devised in the Para 14 of the order dated 19.12.2017 in Petition No. 168/TT/2016 as quoted above.

19. Further, for the ISTS lines 220 kV SC Bareilly - Pantnagar Line and 220 kV SC Noida Sec 62-Gazipur Line as mentioned in the table above are yet to complete their useful life and their capital cost is derived based on the factor as discussed by the Hon'ble Commission in Para 15 & 16 of the order dated 19.12.2017 in Petition No. 168/TT/2016 as quoted above for computation of the Depreciation, Interest on Loan and Return on Equity. Accordingly, the capital cost of the lines is estimated as follows:

Asset No.	Asset IV	Asset IV
Line Name	220 kV SC Bareilly - Pantnagar Line	220 kV SC Noida Sec 62-Gazipur Line
COD	4-Mar-03	26-Mar-09
Age as on 31.3.2014	11.08	5.02
Balance Life	13.92	19.98
Age as on 31.3.2019	16.08	10.02
Balance Life	8.92	14.98
Line Length (ckm)	5.50	3.00
Capital Cost Factor (K)	12.24	17.11
Capital Cost in Rs. Lakh	67.33	51.34
Debt: Equity	70:30	70:30
Debt	47.13	35.94
Equity	20.20	15.40
Cumulative. Depreciation upto 31.3.2014	39.11	13.55
Opening Loan as on 31.3.2014	8.03	22.39

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Other Key Consideration of the Tariff Methodology:

20. The Hon'ble Commission in the order dated 19.12.2017 in Petition No. 168/TT/2016 has made the following considerations for approving the tariff of ISTS lines:

> *"(i) Useful life of the transmission line shall be deemed to be 25 years.*
> *(ii) Prevailing depreciation rates as per the CERC (Terms & Conditions of Tariff) Regulations, 2014 shall be considered uniformly for all the previous tariff periods so as to do away with the Advance Against Depreciation which was in vogue during earlier tariff periods. Notwithstanding the depreciation considered as recovered earlier, for the purpose of these tariff calculations, remaining depreciable value shall be spread over the remaining useful life of the transmission line, where the elapsed life is more than or equal to 12 years.*
> *(iii) Normative Debt-Equity ratio shall be 70:30.*
> *(iv) Normative loan repayment during a year shall be deemed to be equal to the depreciation allowed for that year.*
> *(v) Rate of Interest on normative loan shall be the weighted average rate of interest as derived on the basis of PGCIL's Balance Sheet.*
> *(vi) In order to avoid complexity, grossing up of rate of Return on Equity with tax rate is being dispensed with.*
> *(vii) Bank rate [as defined in CERC (Terms & Conditions of Tariff) Regulations, 2014] as on 1.4.2014 shall be applied for calculating the rate of interest on working capital on normative basis.*
> *(viii) O & M expenses as per the CERC (Terms & Conditions of Tariff) Regulations, 2014 shall be considered.*
> *(ix) Where the life of TL is more than or equal to 25 years as on 01.04.2014, only O & M expenses and IWC shall be allowed in lieu of complete tariff."*

21. The Petitioner, while claiming the tariff for the 18 ISTS lines (Asset I to Asset XVIII) for the tariff period from FY 2014-15 to FY 2023-24 has followed the above methodology of the Hon'ble Commission as per the order dated 19.12.2017 in Petition No. 168/TT/2016. The key assumptions and considerations in the current petition are as follows:

a. The Petitioner has not claimed any additional capitalization towards the 18 lines (Asset I to Asset XVIII) for the tariff period from FY 2014-15 to FY 2023-24.
b. Assets where the useful life is complete (i.e. Asset I to III, V, VII to XVIII), the Petitioner has claimed the O&M and IoWC expenses in line with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff)

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Regulations' 2014 for 2014-19 Tariff period and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2019 for 2019-24 Tariff Period.

c. Capital cost of the Asset IV & VI as discussed in the Para 19 above.

d. Return on Equity @ 15.50%

e. Rate of Interest on loan has been considered as per the actual weighted average rate of interest on long-term loan portfolio of UPPTCL for the period form FY 2014-15 to FY 2020-21. Further, the weighted average rate of interest on long-term loans has been considered for FY 2021-22 to FY 2022-23 as per the weighted average rate applicable for the FY 2020-21. Computation of the year-wise weighted average rate of interest is provided in the **Annexure 4.**

f. Depreciation is claimed in line with the applicable tariff regulations.

22. The Tariff for the tariff period from FY 2014-15 to FY 2023-24 is summarized as below:

True-up Tariff for Asset I to XVIII for the period from FY 2014-15 to FY 2018-19:

Amount in Rs. Lakh)

Asset	Asset I: 220 kV Muzaffarnagar (Nara)-Roorkee line				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	11.72	12.12	12.53	12.93	13.34
Interest on Working Capital (IoWC)	0.65	0.67	0.69	0.71	0.74
Total AFC	**12.36**	**12.79**	**13.22**	**13.65**	**14.08**

Amount in Rs. Lakh)

Asset	Asset II: 220 kV SC Khodri-Saharanpur-1 Line				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	16.83	17.42	18.00	18.58	19.17
Interest on Working Capital (IoWC)	0.93	0.96	0.99	1.03	1.06
Total AFC	**17.76**	**18.38**	**18.99**	**19.61**	**20.22**

Amount in Rs. Lakh)

Asset	Asset III: 220 kV SC Khodri-Saharanpur-2 Line				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	16.37	16.94	17.51	18.07	18.64

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Interest on Working Capital (IoWC)	0.90	0.94	0.97	1.00	1.03
Total AFC	**17.28**	**17.88**	**18.47**	**19.07**	**19.67**

Amount in Rs. Lakh)

Asset	Asset IV: 220 kV SC Bareilly - Pantnagar Line				
FY	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity (RoE)	3.13	3.13	3.13	3.13	3.13
Depreciation	3.56	1.38	1.38	1.38	1.38
Interest on Loan (IoL)	0.79	0.47	0.31	0.11	0.02
Operation and Maintenance (O&M)	1.11	1.15	1.19	1.23	1.27
Interest on Working Capital (IoWC)	0.23	0.18	0.18	0.17	0.17
Total AFC	**8.82**	**6.31**	**6.18**	**6.03**	**5.97**

Amount in Rs. Lakh)

Asset	Asset V: 220 kV DC Sahibabad-Patparganj Line				
FY	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.12	2.19	2.27	2.34	2.42
Interest on Working Capital (IoWC)	0.12	0.12	0.13	0.13	0.13
Total AFC	**2.24**	**2.31**	**2.39**	**2.47**	**2.56**

Amount in Rs. Lakh)

Asset	Asset VI: 220 kV SC Noida Sec 62-Gazipur Line				
FY	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity (RoE)	2.39	2.39	2.39	2.39	2.39
Depreciation	2.71	2.71	2.71	2.71	2.71
Interest on Loan (IoL)	2.66	2.29	1.99	1.44	1.09
Operation and Maintenance (O&M)	0.61	0.63	0.65	0.67	0.69
Interest on Working Capital (IoWC)	0.21	0.20	0.20	0.19	0.18
Total AFC	**8.58**	**8.22**	**7.94**	**7.39**	**7.06**

Amount in Rs. Lakh)

Asset	Asset VII: 220 kV SC Noida Sec 20-Gazipur Line				
FY	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	0.88	0.91	0.94	0.97	1.00
Interest on Working Capital (IoWC)	0.05	0.05	0.05	0.05	0.06
Total AFC	**0.93**	**0.96**	**0.99**	**1.02**	**1.06**

Amount in Rs. Lakh)

Asset	Asset VIII: 220 kV SC Noida Sec 20-BTPS Line				
FY	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.69	2.78	2.87	2.97	3.06
Interest on Working Capital (IoWC)	0.15	0.15	0.16	0.16	0.17
Total AFC	**2.84**	**2.93**	**3.03**	**3.13**	**3.23**

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Amount in Rs. Lakh)

Asset	Asset IX: 220 kV SC Sahupuri-Pasauli Line				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	7.41	7.67	7.93	8.18	8.44
Interest on Working Capital (IoWC)	0.41	0.42	0.44	0.45	0.47
Total AFC	**7.82**	**8.09**	**8.37**	**8.64**	**8.91**

Amount in Rs. Lakh)

Asset	Asset X: 132 KV SAHUPURI-KARMNASHA				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	7.76	8.03	8.29	8.56	8.83
Interest on Working Capital (IoWC)	0.43	0.44	0.46	0.47	0.49
Total AFC	**8.19**	**8.47**	**8.75**	**9.04**	**9.32**

Amount in Rs. Lakh)

Asset	Asset XI: 132 KV CHANDAULI- KARMNASHA				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	3.58	3.70	3.82	3.95	4.07
Interest on Working Capital (IoWC)	0.20	0.20	0.21	0.22	0.22
Total AFC	**3.77**	**3.90**	**4.03**	**4.17**	**4.30**

Amount in Rs. Lakh)

Asset	Asset XII: 132 KV Kiratpur-Manglore				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	14.54	15.05	15.55	16.06	16.56
Interest on Working Capital (IoWC)	0.80	0.83	0.86	0.89	0.91
Total AFC	**15.35**	**15.88**	**16.41**	**16.94**	**17.47**

Amount in Rs. Lakh)

Asset	Asset XIII: 132 KV Chandak-Luksar				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	6.46	6.69	6.91	7.14	7.36
Interest on Working Capital (IoWC)	0.36	0.37	0.38	0.39	0.41
Total AFC	**6.82**	**7.06**	**7.29**	**7.53**	**7.77**

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Amount in Rs. Lakh)

Asset	Asset XIV: 132 KV Afzalgarh-Kalagarh				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	1.23	1.27	1.32	1.36	1.40
Interest on Working Capital (IoWC)	0.07	0.07	0.07	0.07	0.08
Total AFC	**1.30**	**1.34**	**1.39**	**1.43**	**1.48**

Amount in Rs. Lakh)

Asset	Asset XV: 132 KV Dhampur-Kalagarh				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	9.09	9.41	9.72	10.04	10.35
Interest on Working Capital (IoWC)	0.50	0.52	0.54	0.55	0.57
Total AFC	**9.59**	**9.92**	**10.26**	**10.59**	**10.92**

Amount in Rs. Lakh)

Asset	Asset XVI: 132 KV LALITPUR-RAJGHAT				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	5.05	5.23	5.40	5.58	5.75
Interest on Working Capital (IoWC)	0.28	0.29	0.30	0.31	0.32
Total AFC	**5.33**	**5.51**	**5.70**	**5.88**	**6.07**

Amount in Rs. Lakh)

Asset	Asset XVII: 132 KV ANPARA-MORWA				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.32	2.40	2.48	2.56	2.65
Interest on Working Capital (IoWC)	0.13	0.13	0.14	0.14	0.15
Total AFC	**2.45**	**2.54**	**2.62**	**2.71**	**2.79**

Amount in Rs. Lakh)

Asset	Asset XVIII: 132 KV BINA-MORWA				
FY	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.32	2.40	2.48	2.56	2.65
Interest on Working Capital (IoWC)	0.13	0.13	0.14	0.14	0.15
Total AFC	**2.45**	**2.54**	**2.62**	**2.71**	**2.79**

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Tariff for Asset I to XVIII for the period from FY 2019-20 to FY 2023-24:

Amount in Rs. Lakh)

Asset	Asset I: 220 kV Muzaffarnagar (Nara)-Roorkee line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	14.62	15.08	15.66	16.18	16.76
Interest on Working Capital (IoWC)	0.64	0.66	0.68	0.71	0.73
Total AFC	**15.25**	**15.74**	**16.34**	**16.89**	**17.49**

Amount in Rs. Lakh)

Asset	Asset II: 220 kV SC Khodri-Saharanpur-1 Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	21.00	21.67	22.50	23.25	24.08
Interest on Working Capital (IoWC)	0.92	0.95	0.98	1.01	1.05
Total AFC	**21.91**	**22.61**	**23.48**	**24.26**	**25.13**

Amount in Rs. Lakh)

Asset	Asset III: 220 kV SC Khodri-Saharanpur-2 Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	20.42	21.07	21.88	22.61	23.42
Interest on Working Capital (IoWC)	0.89	0.92	0.95	0.99	1.02
Total AFC	**21.31**	**21.99**	**22.84**	**23.60**	**24.44**

Amount in Rs. Lakh)

Asset	Asset IV: 220 kV SC Bareilly - Pantnagar Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	3.13	3.13	3.13	3.13	3.13
Depreciation	1.38	1.38	1.38	1.38	1.38
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	1.39	1.43	1.49	1.53	1.59
Interest on Working Capital (IoWC)	0.13	0.13	0.13	0.13	0.14
Total AFC	**6.03**	**6.07**	**6.13**	**6.18**	**6.24**

Amount in Rs. Lakh)

Asset	Asset V: 220 kV DC Sahibabad-Patparganj Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.64	2.74	2.83	2.93	3.03
Interest on Working Capital (IoWC)	0.12	0.12	0.12	0.13	0.13
Total AFC	**2.75**	**2.86**	**2.95**	**3.06**	**3.16**

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Amount in Rs. Lakh)

Asset	Asset VI: 220 kV SC Noida Sec 62-Gazipur Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	2.39	2.39	2.39	2.39	2.39
Depreciation	2.71	2.71	2.71	0.84	0.84
Interest on Loan (IoL)	0.82	0.56	0.24	0.04	0.00
Operation and Maintenance (O&M)	0.76	0.78	0.81	0.84	0.87
Interest on Working Capital (IoWC)	0.12	0.12	0.12	0.09	0.09
Total AFC	**6.79**	**6.56**	**6.27**	**4.20**	**4.18**

Amount in Rs. Lakh)

Asset	Asset VII: 220 kV SC Noida Sec 20-Gazipur Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	1.10	1.13	1.18	1.21	1.26
Interest on Working Capital (IoWC)	0.05	0.05	0.05	0.05	0.05
Total AFC	**1.15**	**1.18**	**1.23**	**1.27**	**1.31**

Amount in Rs. Lakh)

Asset	Asset VIII: 220 kV SC Noida Sec 20-BTPS Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	3.35	3.46	3.59	3.71	3.84
Interest on Working Capital (IoWC)	0.15	0.15	0.16	0.16	0.17
Total AFC	**3.50**	**3.61**	**3.75**	**3.87**	**4.01**

Amount in Rs. Lakh)

Asset	Asset IX: 220 kV SC Sahupuri-Pasauli Line				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	9.25	9.54	9.91	10.24	10.61
Interest on Working Capital (IoWC)	0.40	0.42	0.43	0.45	0.46
Total AFC	**9.65**	**9.96**	**10.34**	**10.69**	**11.07**

Amount in Rs. Lakh)

Asset	Asset X: 132 KV SAHUPURI-KARMNASHA				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	9.68	9.98	10.37	10.71	11.10
Interest on Working Capital (IoWC)	0.42	0.44	0.45	0.47	0.48
Total AFC	**10.10**	**10.42**	**10.82**	**11.18**	**11.58**

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Amount in Rs. Lakh)

Asset	Asset XI: 132 KV CHANDAULI- KARMNASHA				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	4.46	4.60	4.78	4.94	5.12
Interest on Working Capital (IoWC)	0.19	0.20	0.21	0.22	0.22
Total AFC	**4.65**	**4.80**	**4.99**	**5.15**	**5.34**

Amount in Rs. Lakh)

Asset	Asset XII: 132 KV Kiratpur-Manglore				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	18.14	18.72	19.44	20.09	20.81
Interest on Working Capital (IoWC)	0.79	0.82	0.85	0.88	0.91
Total AFC	**18.93**	**19.54**	**20.29**	**20.96**	**21.71**

Amount in Rs. Lakh)

Asset	Asset XIII: 132 KV Chandak-Luksar				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	8.06	8.32	8.64	8.93	9.25
Interest on Working Capital (IoWC)	0.35	0.36	0.38	0.39	0.40
Total AFC	**8.42**	**8.68**	**9.02**	**9.32**	**9.65**

Amount in Rs. Lakh)

Asset	Asset XIV: 132 KV Afzalgarh-Kalagarh				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	1.53	1.58	1.64	1.70	1.76
Interest on Working Capital (IoWC)	0.07	0.07	0.07	0.07	0.08
Total AFC	**1.60**	**1.65**	**1.72**	**1.77**	**1.84**

Amount in Rs. Lakh)

Asset	Asset XV: 132 KV Dhampur-Kalagarh				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	11.34	11.70	12.15	12.56	13.01
Interest on Working Capital (IoWC)	0.49	0.51	0.53	0.55	0.57
Total AFC	**11.83**	**12.21**	**12.68**	**13.10**	**13.57**

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Amount in Rs. Lakh)

Asset	Asset XVI: 132 KV LALITPUR-RAJGHAT				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	6.30	6.50	6.75	6.98	7.23
Interest on Working Capital (IoWC)	0.27	0.28	0.29	0.30	0.31
Total AFC	**6.57**	**6.78**	**7.04**	**7.28**	**7.54**

Amount in Rs. Lakh)

Asset	Asset XVII: 132 KV ANPARA-MORWA				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.90	2.99	3.11	3.21	3.32
Interest on Working Capital (IoWC)	0.13	0.13	0.14	0.14	0.14
Total AFC	**3.02**	**3.12**	**3.24**	**3.35**	**3.47**

Amount in Rs. Lakh)

Asset	Asset XVIII: 132 KV BINA-MORWA				
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (RoE)	0.00	0.00	0.00	0.00	0.00
Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Loan (IoL)	0.00	0.00	0.00	0.00	0.00
Operation and Maintenance (O&M)	2.90	2.99	3.11	3.21	3.32
Interest on Working Capital (IoWC)	0.13	0.13	0.14	0.14	0.14
Total AFC	**3.02**	**3.12**	**3.24**	**3.35**	**3.47**

23. It is prayed to Hon'ble Commission to allow the tariff as claimed above.

24. Under the CGST Act, 2017 implemented w.e.f. 01.07.2017, the Govt. of India vide notification no. 12/2017 — Central Tax (Rate) dated 28.06.2017 at serial no. 25 under the heading 9969 "Transmission or distribution of electricity by an electric transmission or distribution utility" has exempted the charges of transmission of electricity. Hence, the Transmission Charges as indicated at Para 16 above is exclusive of GST. Further, if GST is levied at any rate and at any point of time in future on Charges of Transmission of Electricity, the same shall be borne and additionally paid by the respondent(s) to UPPTCL and the same shall be charged & billed separately by UPPTCL. Further additional taxes, if any, are to be paid by the UPPTCL on account of demand from Govt. / Statutory authorities, the same may be allowed to be recovered from the beneficiaries.

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25. That as per regulation 35(3)(c) of Tariff Regulation 2019, the Security Expenses and Capital Spares for transmission system shall be allowed separately after prudence check. In this regard, it is submitted that as of now UPPTCL is not claiming any such expenditure in this petition. However, UPPTCL may claim the same at the time of truing up based on actual expenditure incurred for the Tariff period 2019-24.

26. The application filing fee, expenses incurred on publication of Notices in Newspapers and License fee may be allowed to be recovered separately from the respondents in terms of Regulation 70(1) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019. The fees and charges to be paid by UPPTCL as ISTS licensee (deemed ISTS licensee) under Central Electricity Regulatory Commission (Fees and Charges of RLDC and other matters) Regulations as amended from time to time shall also be recoverable from the Designated ISTS Customers'(DICs) as provided under clause 70(3) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.

27. The Transmission Charges and other related Charges indicated above, is exclusive of incentive, late payment surcharge, FERV, any statutory taxes, levies, duties, cess, filing fees, license fee, RLDC fees and charges or any other kind of imposition (s) and/ or other surcharges etc. whatsoever imposed / charged by any Government (Central/State) and / or any other local bodies/authorities/regulatory authorities in relation to transmission of electricity, environmental protection, and/or in respect of any of its installation associated with the Transmission System and the same shall be borne and additionally paid by the beneficiaries(s) to UPPTCL and the same shall be charged, billed separately by UPPTCL on the beneficiaries.

Sharing of Transmission Charges

28. The transmission charges for the 2014-19 period shall be recovered on monthly basis in accordance with Regulation 42 and shall be shared by the beneficiaries in accordance with regulation 43 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and shall be shared by the beneficiaries and long term transmission customers in Central Electricity Regulatory Commission (Sharing of Inter-

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State Transmission Charges and Losses) Regulation, 2010 dated 15.06.2010 or as amended/repealed from time to time.

29. Tariff for Transmission of Electricity (Annual Fixed Cost) for 2019-24 as above shall be recovered on monthly basis in accordance with Regulation 57 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and shall be shared by the beneficiaries and long term transmission customers in Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 and Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 as applicable.

Prayers

30. It is respectfully prayed that the Hon'ble Commission may be pleased to

a. Admit the instant petition and approve the Trued up Transmission Tariff for the tariff period 2014-19 and the transmission tariff for tariff period 2019-24 for the Asset I to XVIII covered under this petition.

b. Allow UPPTCL to recover the shortfall or refund the excess Annual Fixed Charges after Truing-up exercise as specified under Regulation 8 of Tariff Regulation 2014.

c. Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on the publishing of notices in newspapers in terms of Regulation 70(1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of the petition.

d. Allow UPPTCL to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 70(3) and (4) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.

e. Allow UPPTCL to claim the capital spares & security expenses at the time of truing up for tariff period 2019-24 as per actuals.

f. Allow UPPTCL to bill and recover GST on Transmission Charges separately from the beneficiaries, if GST on the transmission is levied, at any rate in future. Further, any taxes including GST and duties including cess, etc. imposed by any statutory/Govt. municipal authorities shall be allowed to be recovered from the beneficiaries.

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g. Condone any shortcomings/deficiencies and allow UPPTCL to submit additional information/data at a later stage as may be required,

h. Pass other such relief as the Hon'ble commission deems fit and appropriate under the circumstances of the case and in the interest of justice.

FILED BY
Uttar Pradesh Power Transmission Corporation Limited

Represented by

Manoj Singh
Superintending Engineer,
Attach to
Director (Planning & Commercial)

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Place: Lucknow
Dated: 19th November 2022

Annexure 1

Ph. : 26513265
Fax : 26567341

e-mail : nrebops@yahoo.com
Website : www.nrpc.gov.in

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

No: NRPC/SE(C)/Implementation Committee/2010/ दिनांक 22.10.2010

To,

1. CMD, Delhi Transco Ltd., New Delhi.
2. Managing Director, Haryana Vidyut Prasaran Nigam Ltd., Panchkula
3. CMD, HPSEB Ltd, Shimla
4. CMD, Punjab State Transmission Corporation Ltd., Patiala
5. Principal Secretary (Power), Civil Secretariat, Jammu/Srinagar
6. Chairman & Managing Director
   Rajasthan Rajya Vidyut Prasaran Nigam Ltd. Jaipur.
7. Managing Director, U.P. Power Transmission Corporation Ltd., Lucknow
8. Managing Director, Power Transmission Corporation of Uttarakhand Limited (PTCUL), Dehradun
9. Chief Engineer, Electricity Department, UT of Chandigarh

Subject:- **Record of the discussions held in the meeting held on 13.10.2010 at NRPC, New Delhi regarding identification of assets of non-ISTS licensees being used for inter-State Transmission**

Sir,

A meeting was held at NRPC, New Delhi on 13.10.2010 to identify the assets of non-ISTS licensees being used for inter-State Transmission. The record of discussions held in the aforesaid meeting is enclosed. As discussed in the meeting, a list of 132 kV lines connecting two contiguous States, which form part of meshed network and are normally kept under closed condition should be submitted to NRPC Secretariat at the earliest. It is also requested that the list of identified transmission lines at 220 kV and

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above enclosed as Annex-II to the record of discussions may be examined and discrepancy, if any, along with additional information about these transmission lines such as length, part/full ownership etc may also be conveyed to NRPC Secretariat.

Yours faithfully,

(Ajay Talegaonkar)

SE(O),NRPC

Copy to:

1. Development Commissioner (Power), Jammu & Kashmir, Bemina, Srinagar (J&K).
2. Director (Technical), HPSEB Ltd., Vidyut Bhawan, Kumar House Complex,Block – II, SHIMLA – 171 004.
3. Director (Operations), Delhi Transco Limited, Shakti Sadan, Kotla Road, NEW DELHI-110 002
4. Director (Technical), *Haryana Vidyut Prasaran Nigam Ltd., Shakti Bhawan, Sector-6, PANCHKULA - 134 109.*
5. Director (Tech.) , PSTCL, The Mall, PATIALA-147 001.
6. Director (Technical), Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Vidyut Bhawan, Jyoti Nagar, Janpath, JAIPUR-302 005
7. Executive Director, Power Transmission Corporation of Uttarakhand Ltd. (PTCUL), 7-B, Lane No-1, Vasant Vihar Enclave, DEHRADUN - 248 001.
8. Chief Engineer (Transmission), U.P. Power Transmission Corporation Limited, Shakti Bhawan, 14 Ashok Marg, LUCKNOW-226 001.
9. Executive Director, National Load Dispatch Centre, B-9, Qutub Institutional Are, New Delhi - 110 016
10. General Manager, N.R.L.D.C, 18-A, Shaheed Jit Singh Marg, Katwaria Sarai, NEW DELHI – 110 016

Copy for information to:

1. Member Secretary, WRPC, Mumbai
2. Member Secretary, SRPC, Bangaluru
3. Member Secretary, ERPC, Kolkata
4. Member Secretary, NERPC, Shillong

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Record of the discussions held in the meeting held on 13.10.2010 at NRPC, New Delhi regarding identification of assets of non-ISTS licensees being used for inter-State Transmission

List of Participants is enclosed as Annex-I.

1. Member Secretary, NRPC welcomed the participants to the meeting. Explaining the purpose of the meeting, he stated that in accordance with Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010, RPCs are required to certify assets of non-ISTS Licensees which are being used for inter-state transmission. This meeting has been called so as to evolve criteria for identification of such assets and also to identify such assets by applying the agreed criteria. He informed that in the meeting of the Implementation Committee held on 12.10.2010, the issue was discussed in the context of uniformity in approach in various regions, but it was decided that since Southern Region constituents have agreed for a particular approach, the issue may be left to respective RPCs as prescribed in the CERC regulations.

2. Member Secretary, NRPC informed that CERC regulations already preserve the existing arrangement for evacuation of power from Central generating Stations using STU lines such as evacuation system for Narora Atomic Power Station in U.P. SE(O), NRPC read relevant part of the CERC Regulations namely last sentence of regulation 7 (1)(t) (vii) as reproduced below:

> *"Long term beneficiaries of ISGS connected to STU network shall continue to pay the transmission charges for the STU network as per the existing mechanisms."*

3. Detailed deliberation took place regarding criteria to be adopted for identification of assets of non-ISTS Licensees which are being used for inter-state transmission. It was agreed that since it is first time the mechanism is being implemented and also since there is hardly any time left for furnishing list of such lines to the Implementing Agency (IA), a criteria, which is simple to implement can be adopted. Since this exercise is to be repeated every year, elaborate and scientific criteria, perhaps based on system studies can be adopted later. It was agreed that generally, transmission lines operating at 220 kV and above and connecting two contiguous States need to be included since such lines can contribute substantially towards regional grid operation. As regards 132 kV lines, there was general agreement that lines connecting two contiguous States, which are being used in radial mode should not be included in ISTS lines for the purpose of implementation of CERC regulation since such lines hardly make any impact at regional level.

4. After detailed deliberation, there was consensus for adopting following criteria for identification of assets of non-ISTS Licensees which are being used for inter-state transmission:

(i) All lines owned by non-ISTS licensees with voltage level of 220 kV and above and connecting two contiguous States would be certified as assets being used for inter-State transmission.

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However, following transmission lines shall be excluded from the above category:

(a) Transmission lines which are dedicated in nature

(b) Transmission lines emanating from sub-station of an ISTS licensee, if transmission line of no other non-ISTS licensee emanates from this sub-station.

(ii) A transmission line connecting two contiguous States and operating at 132 kV level would be certified as ISTS only if it forms part of meshed network and is normally kept under closed condition.

(iii) Lines below 132 kV level, even if they connecting two contiguous States would not be treated as ISTS for this purpose.

(iv) In addition, list of transmission lines which form part of STU network and are used for evacuation of power generated at ISGS, shall also be intimated to IA, even though transmission charges for such lines will be continued to be paid as per existing mechanism.

5. Based on the above criteria, most of the transmission lines fulfilling the above criteria were identified in the meeting. However, in respect of few 132 kV lines, there was lack of information as to whether these lines are normally closed and also whether or not they form part of meshed network. It was decided that list of such lines duly certified by respective SLDC will be sent to NRPC Secretariat by 18.10.2010. A list of lines, which can be clearly identified based on the above criteria, is enclosed as Annex-II. Also, enclosed as Annex-III is list of STU owned transmission lines, which are being used for evacuation of power from ISGS and sharing of charges for these transmission lines shall continue to be governed as per existing practice. Member Secretary, NRPC clarified that since in accordance with CERC regulations, these lines are to be certified by NRPC, the list of lines being forwarded to IA will be put up to NRPC for ratification in the upcoming meeting.

6. Member Secretary, NRPC stated that non-ISTS licensees are also required to furnish information regarding Yearly Transmission Charges (YTC). It was pointed out that generally SERCs work out ARR for the entire transmission network in the State and furnishing of YTC for individual line may be an issue. Member Secretary, NRPC stated that even though ARR is worked out for entire transmission system, historical cost may be available in submissions made to SERC. States were advised to get the details regarding date of commercial operation and historical cost of such lines so that YTC for such lines can be worked out. Participants from the States were of the opinion that a common methodology for working out YTC for such lines may be evolved by NRPC Secretariat. SE(O), NRPC pointed out that the CERC regulation requires YTC to have regulatory approval. After deliberation, it was decided that Member Secretary, NRPC may take up the issue regarding submission of YTC in the next meeting of Implementation Committee, so that a common approach to obviate the above mentioned difficulties may be found out.

The meeting ended with vote of thanks to the Chair.

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Annex-I

List of Participants

Shri A.K. Aggarwal, Member Secretary, NRPC ..... in Chair

Sl. No.	Name	Organistation	Designation	Mobile	E-Mail
1.	Suman Guchh	UPPTCL	EE	9415005397	sumang@721.ac.in
2.	Davindra Singh	UPPTCL	EE	9415220565	singh.davindra@gmail.com
3.	Dharam Pal Thakur	HPSEB Ltd.	AE	9418497105	thakurdp.thakur3@ gmail.com
4.	C.N. Pal	HPSEB Ltd.	AE	9418310587	-
5.	N.K. Makkar	HVPN	EE	9466219042	hvpncecomi@yahoo.com
6.	AK Matharu	PSTCL	Dy. CE	9646118004	-
7.	Vardeep S.	PSTCL	EE	9646118011	ddpc_pseb@rediffmail.com
8.	A.K.Kaul	DTL	Director (T)	9818100692	ashokk_kaul@yahoo.com
9.	V.Venugopal	DTL	DGM (SO)	9871093902	dttdate@yahoo.com
10.	Sanjeev kumar	DTL	AM (SO)	9540040917	sanjeevkumar2474@gmail.com
11.	D.K.Jain	NRLDC	DGM	9910344127	dkj2009@yahoo.co.in
12.	U.K. Tyagi	POWERGRID	GM	9910344118	umesh@powergridindia.com
13.	V.K. Aggarwal	NRLDC	GM	9818933799	vka1996@gmail.com
14.	Rajiv Porwal	NRLDC	Ch. Manager	9871581133	Rajivporwal@gmail.com
15.	Ajay Talegaonkar	NRPC	SE(O)	9910728144	ajay.talegaonkar@gmail.com
16.	P.S. Mhaske	NRPC	SE(C)	9968667741	psmhaske@yahoo.com

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Annex-II

List of transmission lines (220 kV and above) of non-ISTS licensees being used for inter-State transmission : Identified based on criteria agreed in the meeting

S.No.	Name of the line		Voltage Level (kV)
1	Bamnauli-Ballabgarh ckt-I	DTL	400
2	Bamnauli-Ballabgarh ckt-II	DTL	400
3.	Sahupuri-Pasauli	UPPTCL/BSEB	220
4.	Sahibabad-Patparganj	UPPTCL	220
5.	Noida sec 62- Gazipur	UPPTCL	220
6.	Noida sec 20- BTPS	UPPTCL	220
7.	Noida sec 20- Gazipur	UPPTCL	220
8.	Muzaffarnagar (Nara)- Roorkee	UPPTCL/PTCUL	220
9.	Bareilly-Pantnagar	UPPTCL/PTCUL	220
10.	Saharanpur-Khodri ckt-I	UPPTCL/PTCUL	220
11.	Saharanpur-Khodri ckt-II	UPPTCL/PTCUL	220
12.	Kashipur-Moradabd	UPPTCL/PTCUL	400
13.	Muzaffarnagar-Roorkee	UPPTCL/PTCUL	400
14.	Bareilly-Pantnagar	UPPTCL/PTCUL	220
15.	Kunihar-Panchkula	HPSEB Ltd/HVPNL	220
16.	Baddi-Panchkula	HPSEB Ltd/HVPNL	220
17.	Alwar- Badarpur	RRVPNL	220
18.	Bharatpur –Agra(sikandra)	RRVPNL	220
19.	Khetri -Hissar	RRVPNL	220
20.	Khetri -Dadri- Ckt-I	RRVPNL	220
21.	Khetri- Dadri- Ckt-II	RRVPNL	220
22	Kota -Badod	RRVPNL/MPPTCL	220
23	Morak-Badod	RRVPNL/MPPTCL	220
24	Udhampur-Sarna	PDD J&K	220
25	RSD-Jessore	Punjab/HPSEB Ltd	220
26	220 kV Bhiwadi-Rewari	HVPNL	220
27	220 kV Bhiwadi-Badshahpur	HVPNL	220

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Annex-III

List of STU owned lines being used for evacuation of power from ISGS and being paid for as per existing practice

S.No.	Name of the line	Name of non-ISTS licensee		Voltage Level (kV)
1.	NAPP-Sambhal	UPPTCL		220
2.	NAPP-Atrauli	-do-		220
3.	NAPP-Simbholi	-do-		220
4.	NAPP-Khurja-I	-do-		220
5.	NAPP-Khurja-II	-do-		220
6.	Unchahar-Raibareilly -I	-do-		220
7.	Unchahar-Raibareilly -II	-do-		220
8.	Unchahar-Fatehpur-I	-do-		220
9.	Unchahar-Fatehpur-II	-do-		220
10.	Pampore-Kishanpur -I	PDD, J&K		220
11.	Pampore-Kishanpur -II	PDD, J&K		220
12.	Anta-Kota	RRVPNL		220
13	RAPP(B)-Kota	-do-		220
14	RAPP (B)-RAPP (A)	-do-		220

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Annexure 2

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उत्तर क्षेत्रीय विद्युत समिति
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नई दिल्ली- 110016
Government of India
Ministry of Power
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

सं. उक्षेविस/वाणिज्यिक/209/आरपीसी (38वीं)/2016/ 9535-9622
No. NRPC/Comml/209/RPC (38th)/2016/

दिनाँक : 17 अक्तूबर, 2016
Dated: 17th October, 2016

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य
Members of NRPC/TCC

विषय: उत्तरी क्षेत्रीय विद्युत समिति की 38 वीं तथा तकनीकी समंवय उप-समिति की 34 वीं बैठक की कार्यसूची

Subject: 38th meeting of Northern Regional Power Committee and 38th meeting of TCC– Agenda.

महोदय / Sir,

उत्तर क्षेत्रीय विद्युत समिति की 38 वीं बैठक दिनांक 25 अक्तूबर, 2016 को 1000 बजे टीएचडीसी इंडिया लिमिटेड, बाईपास रोड़, ऋषिकेश में आयोजित की जाएगी। एन आर पी सी कि बैठक से पहले तकनीकी समन्वय उप-समिति की 34 वीं बैठक दिनांक 24 अक्तूबर, 2016 को पूर्वाह्न 10 बजे उसी स्थान पर आयोजित होगी। बैठकों की कार्यसूची संलग्न है।

The 38th meeting of Northern Regional Power Committee (NRPC) will be held at 10 AM on 25th October, 2016 at THDC India Limited Campus, Bypass Road, Rishikesh. NRPC meeting shall be preceded by 34th meeting of Technical Coordination Sub-committee (TCC) at 10 AM on 24th October, 2016 at the same venue. Agenda for the meetings is attached herewith.

भवदीय/Yours faithfully,

प्रकाश मस्के 17/10/2016

(पी.एस. मस्के/P.S. Mhaske)
सदस्य सचिव/Member Secretary

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D. ITEMS FOR NRPC ONLY

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उत्तर क्षेत्रीय विद्युत समिति

NORTHERN REGIONAL POWER COMMITTEE

AGENDA
FOR
34th MEETING OF TECHNICAL COORDINATION SUB-COMMITTEE
&
38th MEETING OF NORTHERN REGIONAL POWER COMMITTEE

Time & Date of TCC meeting : 10:00 Hrs. on 24.10.2016
Time & Date of NRPC meeting: 10.00 Hrs. on 25.10.2016
Venue: THDC India Limited Campus, Bypass Road, Rishikesh.

CONFIRMATION OF MINUTES (TCC)

A.1 Minutes of 33rd meeting of TCC

Minutes of 33rd meeting of TCC & 37th meeting of NRPC held on 21st and 22nd March, 2016 respectively, were circulated vide letter No. NRPC/Comml/209/RPC(37th)/2016/5417-5505 dated 13th June, 2016. No comments have been received on the minutes.

TCC may confirm the minutes.

CONFIRMATION OF MINUTES (NRPC)

A.2 Minutes of 37th meeting of NRPC

Minutes of 33rd meeting of TCC & 37th meeting of NRPC held on 21st and 22nd March, 2016 respectively, were circulated vide letter No. NRPC/Comml/209/RPC(37th)/2016/5417-5505 dated 13th June, 2016. No comments have been received on the minutes.

NRPC may confirm the minutes.

OPERATIONAL ISSUES

B.1 New Special Protection Scheme(SPSs) for Northern Region

Section 5.2 (o) of Indian Electricity Grid Code requires System Protection (SPS) Schemes to be finalized by RPCs. Accordingly, based on requirements,

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various SPSs are recommended by Operation Coordination Sub-Committee or Protection Coordination Sub-Committee and are put up to TCC and NRPC for approval.

Subsequent to last TCC/NRPC meetings held in March 2016, following SPSs have been recommended by OCC for approval of NRPC:

A. SPS for Kawai-Kalisindh-Chhabra generation complex recommended in 122nd OCC meeting held on 22nd April, 2016.

B. SPS for Anpara generation Complex recommended in 122nd OCC meeting held on 22nd April, 2016.

C. SPS for the Tehri complex for the contingency of any of the circuit of 400 kV Koteshwar-Merrut line recommended in 127th OCC meeting held on 23rd Sept., 2016

The logic for these SPSs is enclosed as Annex-I. RVPNL, vide email dated 26.07.2016 has confirmed that the SPS for Kawai-Kalisindh-Chhabra generation complex has been put into operation. However, it is understood that the automatic load shedding recommended in part (c) of the scheme has not been implemented by RRVPNL.

UPPTCL has intimated that SPSs for Tripping of either one or both ICT(s) (1000MVA, 765/400kV ICT at Unnao) or tripping of 765kV Anpara-Unnao line would be implemented by 31.12.2016.

In the 127th OCC meeting, THDC had requested that till the time SPS is implemented, there should be staggering of peaking power from Tehri HEP and Koteshwar HEP so as to keep combined output within 1100-1150 MW. Representative of UP -SLDC had stated that staggering can be done provided that SPS is implemented expeditiously and in a time bound manner. THDC had assured that SPS for Tehri complex would be implemented by 30.11.2016. Other states had requested for some more time to submit their views. After deliberations it was agreed that members of OCC would submit their view on staggering positively by 30.09.2016. It was decided in the OCC that if no comments are received from the states by 30.09.2016, then it would be presumed that they are agreeable to the proposal of staggering of peaking power from Tehri Complex up to 30.11.2016. However, till date none of the NRPC constituent has submitted any comment on this issue.

In view of foregoing discussions, following is proposed:

- TCC and NRPC may grant post fact approval to the SPSs for Kawai-Kalisindh-Chhabra generation complex and Anpara generation complex. TCC/NRPC may seek from RVPNL the time frame for implementation of automatic load shedding of 750 MW envisaged in part (c) of the SPS for Kawai-Kalisindh-Chhabra generation complex.

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- Approval of SPSs for Tehri complex . Staggering of peaking from Tehri Complex may also be approved till 30.11.2016.

Members may deliberate and approve.

B.2 Report of the Group Constituted for suggesting measures for the improvement in protection system among the utilities of Northern Region

Power system protection plays a v ital role to ensure reliable and s ecure operation of the Grid. Several issues related to power system protection were observed after the twin grid disturbances in July 2012. These issues also featured prominently in the meetings of Protection Sub-Committee from time to time. It has been observed that many of these issues/tripping could have been avoided by ensuring well-functioning protection system. Therefore, need was felt to explore ways and means to bring about improvement in the field of Power System Protection among the utilities in Northern Region.

In an effort to ensure improvement in the protection system among the utilities of Northern Region, a g roup was constituted to suggest measures for improvement in protection system among the utilities of Northern Region. The group has submitted its report (copy of report enclosed at Annex-II). The report was deliberated in the 30th meeting of Protection Subcommittee held in September 2015 and the sub-committee had recommended that the report may be placed before TCC/NRPC for approval.

A summary of recommendations by the group are as under:

(i) Capacity Building:

- The group recommended three levels of training modules for three different target faculties of engineers.

Basic Training on Protection System for Substation Engineers (Level 0).

Advanced Training on Protection System for Protection System Engineers (level 2).

Advanced Training on Protection System for Protection System Engineers (level 2):

(ii) Resource Deployment

- Due to manpower constraints and limited resources protection group may be deployed at Circle/Zone level. The guidelines for minimum manpower to be deployed are:
  - 400 kV Substations: One executive, One Junior Engineer and Two Technicians for 20 bays.
  - 220 kV Substations: One executive, One Junior Engineer and Two Technicians for 30 bays.

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- 132kV Substations: One executive, One Junior Engineer and Two Technicians for 40 bays

- Minimum requirement of Tools and plants - The list of indicative tools and plants is provided in the report.

(iii) Protection System Maintenance

Protection systems need periodic monitoring and maintenance to ensure reliable and healthy operation. Indicative list of activities for Monthly Maintenance and Annual maintenance is provided in report.

(iv) Event Reporting & Monitoring

- A mechanism may be developed by the Utility for analysis of tripping by identifying nodal officer at Circle/Zone with an assigned responsibility to file an initial trip report with DR and E L details to the management, NRLDC and NRPC within 24hrs of the incident.
- A detailed report with analysis, defects observed and rectifications carried out should follow within 15 days.
- Feasibility may be envisaged to develop a web based event reporting system at NRPC/NRLDC website. The entities may log in and upload the Report, DR and EL.

(v) Talent Recognition Mechanism.

- The protection engineers have to often work in odd hours and under short response times. The efforts of the protection engineers need to be acknowledged by the management and rewarded as well. The reward may not necessarily be monetary. Utilities may develop mechanism of annually identifying and r ewarding "Protection Circle" and "Protection Engineer" for their significant contribution towards healthy protection system.
- Similarly, at regional level, NRPC may also institute award for best performing utility and best protection engineer. Such recognitions help to boost the morale of the protection engineers and e ncourage them to continue excellent work.

Members may deliberate and approve the recommendations of the Group.

B.3 System Study for Capacitor Requirement in Northern Region for the year 2016-17 and 2017-18

In the 37th NRPC meeting held in March 2016, it was decided that the task of System Studies for assessment of Capacitor requirements in Northern Region would be entrusted to CPRI. It was also decided that Member Secretary would proceed further in the matter with the approval of Chairperson, NRPC. This

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decision was taken as states of Haryana, Punjab, J&K and U.P. (MVVNL) had submitted the scheme for installation of capacitor in their respective state to the Appraisal Committee of PSDF for its funding through PSDF. Based on the decision of the Techno-Economic sub-group of PSDF, the schemes had been forwarded to NRPC for assessment.

Accordingly, Letter of Award was issued to CPRI for carrying out the studies with consultancy charges of Rs 20 Lakh plus Service tax after due approval from Chairperson, NRPC. To carry out capacitor studies, CPRI had submitted format for submission of data which were circulated to the SLDCs vide letter dated 13.07.2016. The formats were also circulated in 125th OCC meeting held on 22nd July, 2016. Further a separate letter dated 19.08.2016 was written by Member Secretary, NRPC to TCC members of STUs with a request for submission of data. The issue of non-submission of data was discussed in the 127th OCC meeting held on 23rd September, 2016 wherein it was highlighted that without the availability of the data, capacitor requirement studies cannot be carried out. OCC was concerned about the non- submission of data even though some of the state has submitted the proposal for installation of capacitor in their states through PSDF. It was decided that all utilities would submit the data for capacitor studies by 30.09.2016. It was also decided that in case data is not submitted, it would be informed to PSDF nodal agency that Capacitor studies could not be carried out due to non- availability of the data for finalisation of capacitor requirement . H owever, only HPSEB Ltd, RRVPNL and PSTCL have submitted that data whereas partial data has also been received from HVPNL.

It may be mentioned that under Section 2.4.2(g) of Indian Electricity Grid Code, one of the functions of RPC is to review the reactive power compensation requirement and monitor installation of capacitors. Therefore, non-submission of data for carrying out the aforesaid study constitutes non-compliance to IEGC.

In view of the foregoing, following is proposed for approval of TCC/NRPC:

- To Inform Hon'ble CERC and P SDF nodal agency that capacitor requirement could not be finalized due to non- availability of the data.
- To cancel the Letter of Award issued to CPRI for carrying out capacitor studies for 2016-17 and 2017-18.

Members may deliberate

B.4 Maintenance / Replacement of RTUs installed under ULDC Phase-I Project

Remote Terminal Units (RTUs) are primary source of data acquisition, which is further communicated to various Control Centres to facilitate supervision / control of the grid by the RLDC. Most of the presently working RTUs (AREVA make S900) were installed at the EHV sub-stations/switchyards of state and

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Central Sector utilities in the year 2002 under ULDC Phase-I and will complete their fair life in July 2017. The maintenance of these RTUs is presently being carried out by POWERGRID. In a letter dated 01.07.2016 by Executive Director (NR-I) addressed to all the utilities of Northern Region, POWERGRID had intimated that M/s AREVA has already phased out above mentioned RTUs from production and has stopped support services for the same. POWERGRID had also informed that the replacement/maintenance of these RTUs after completion of useful life of 15 years will have to be carried out by utilities concerned. This issue was deliberated in the 7th and 8th meetings of TeST sub-committee held in January 2016 and July 2016 respectively. This issue was again highlighted by Director (Operations), POWERGRID in the letter dated 25.07.2016.

It needs no emphasis that without properly functioning RTUs, the system operators at SLDCs and NRLDC would not be able to visualize system parameters, line flows etc., which can be catastrophic for present day complex system. It may be mentioned that under the Indian Electricity Grid Code (Clause 4.6.2), it is the responsibility of the Users, STU and CTU to provide Systems to telemeter power system parameter such as flow, voltage and status of switches/ transformer taps etc. in line with interface requirements and other guideline made available by RLDC.

These issues were highlighted by Member Secretary, NRPC vide letter dated 17.08.2016 addressed to members of TCC representing transmission utilities, and generating companies.

In view of the facts that less than a year's time is available for replacement of these RTUs and no support services will be available from OEM, following is proposed:

a) A time bound action plan may please be prepared immediately for replacement of above mentioned RTUs to ensure uninterrupted telemetry to respective SLDC and NRLDC.

b) As a contingency measure, options for maintenance of these RTUs till they get replaced may also be explored.

Members may deliberate

B.5 Compliance to recommendations of Task Force on 'Power System Analysis under Contingencies'

B.5.1 As a follow up of one of the recommendations of Enquiry Committee headed by Chairperson, CEA on grid disturbances that took place on 30th and 31st July 2012, Ministry of Power had constituted a 'Task Force on Power System Analysis under Contingencies' in December 2012. The Task Force

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had submitted its report in August 2013. In a meeting taken by Secretary (Power), GoI on 11.03.2014, it was decided that the report be given wide circulation and its recommendations be implemented in a time bound manner. The report of the Task Force as also Guidelines for Protection settings recommended by the Task force had been uploaded on NRPC website (links http://www.nrpc.gov.in/reports/other/taskforce_analysis.pdf and http://www.nrpc.gov.in /reports/other/ps_guidelines.pdf). Member Secretary, NRPC vide letter dated 31st July 2014 had requested members of NRPC to initiate action for implementation of recommendations of the Task Force.

The issue was also deliberated in the 33rd NRPC meeting held on 11th November, 2015 wherein it emerged that some of the recommendations had been complied with and some of them had been implemented partially. Some of the decisions taken in the above mentioned meeting, which have not yet been fully implemented and the status thereof are as under:

(i) Decision: "Concerted efforts should be made to operationalize EMS application under recently commissioned ULDC phase-II. Further, Pradhan Committee's recommendation in regard to deployment of manpower and their emoluments, incentives in SLDCs be implemented."

Status: EMS package procured under ULDC phase –II is meant to carry out state estimation, contingency analysis and security enhancement. NRLDC has been able to run EMS at 400 kV level network. However, SLDCs have not been able to run EMS at voltage levels below 400 kV due to poor telemetry.

Manpower deployed at most of the SLDCs is far below the strength recommended by the Pradhan Committee.

(ii) Decision: "Transformer Tap Position adjustment should be done on seasonal basis. Provision of adequate reactors, study of impact of 220 kV lightly loaded lines & their compensation and absorption of reactive power by generating units etc would help in controlling voltages."

Status: The tap positions of transformers in ISTS network are changed on the advice of NRLDC. NRLDC had enumerated a methodology for arriving at optimal tap position for transformers and STUs were requested to give feedback on transformers tap changed in intra-state system. However, feedback from states is not forthcoming.

Generating stations are helping in absorption of reactive power but there appears to be further scope for improvement.

(iii) Decision: POWERGRID had informed that exercise of tuning of HVDC and TCSC controllers is done regularly. POWERGRID was to inform periodicity of such tuning.

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Status: No response has been received from POWERGRID in this regard.TCC/NRPC may impress upon utilities concerned to implement above mentioned decisions of NRPC.

B.5.2 One of the recommendations of the above mentioned Task Force was related to maintaining protection related database which is reproduced as under:

> *"There is also a need for creating and maintaining data base of relay settings. Data regarding settings of relays in their network should be compiled by the CTU and STUs and furnished to the RLDC and SLDC respectively and a copy should also be submitted to RPC for maintaining the data base."*

This issue was deliberated in the Protection Sub-committee (PSC) meetings and it was decided that data regarding settings of relays shall be compiled by the CTU and STUs for their respective network and furnished to RLDC and SLDC respectively with a copy to RPC for maintaining the database. The database was to be kept updated and verified during the audit. Accordingly, a format for submission of protection related database was prepared and same was agreed in 30th PSC meeting held on 21.09.2015. The format is available on NRPC website. However, none of the utilities have submitted the database of the protection relays setting. The issue of protection data base is being regularly discussed in National Power Committee (NPC) meeting wherein emphasis was laid to maintain the database.

TCC/NRPC may impress upon the utilities to submit the protection related database so that same can be maintained as per the recommendation of the Task Force.

B.6 Renovation and up-gradation of Protection System of various Sub-stations and Power Houses of Bhakra Beas Management Board.

BBMB has submitted a proposal for funding from Power System Development Fund (PSDF) for Renovation and up-gradation of Protection System of various Sub-stations and Power Houses. Appraisal committee of the PSDF has requested BBMB to get the proposal appraised from NRPC. Accordingly, the proposal was submitted by BBMB to NRPC for appraisal. The salient points of the proposal are:

- In line with the observations of protection audit , it is proposed to provide Bus Bar Protection at two 220 kV sub-stations namely Delhi & Kurukshetra.
- At 220 kV Ganguwal s/s, 220 kV Switchyard of Bhakra Right Bank, Dehar Power House & Pong Power House, existing old Electromechanical realys

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are being proposed to be replaced with Numerical ones to comply with Protection audit observations.

- The old electromechanical Unit Protections provided at Bhakra right & Pong Power Houses are also being proposed to be replaced.
- Redundant DC sources are required to be provided at 220KV substations of BBMB to ensure reliable grid operation.
- At some of the substations, existing CTs are required to be replaced because of High Tan Delta. Also some of the CTs, which are quite old and have oil leakage, are also proposed to be replaced.
- PTs/CVTs at some of the substations are required to be replaced in view of providing synchronizing facility and ageing.
- Synchronising trolleys at 220kV GSS Dhulkote and Sangrur are to be provided to ensure trouble free operation during restoration of the Grid.
- Replacement of existing old and obsolete PLC terminals along with protection couplers have been proposed for smooth operation of PLCC equipment.

The scheme is slated for discussions in 128th OCC meeting to be held on 17th October, 2016. TCC/NRPC will be apprised about deliberations in the OCC meeting.

Members may deliberate.

B.7 Certification of Non-ISTS line for inclusion in PoC Charges

Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) (Third Amendment) Regulations, 2015 provides as under:

> *"Certification of non-ISTS lines carrying inter-State power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. RPC Secretariat, in consultation with RLDC, using WebNet Software would examine the proposal. The results of the load flow studies and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter State transmission. The software in the considered scenario will give percentage of usage of these lines by home State and other than home State. For testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home State and other than home State. Based on percentage usage of ISTS in base case, RPC will approve whether the particular State line is being used as ISTS or not. Concerned STU will submit asset-*

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wise tariff. If asset wise tariff is not available, STU will file petition before the Commission for approval of tariff of such lines. The tariff in respect of these lines shall be computed based on Approved ARR and it shall be allocated to lines of different voltage levels and configurations on the basis of methodology which is being done for ISTS lines."

Accordingly, it was decided in 31st TCC/ 35th NRPC meeting held on 08th /09th July, 2015 to constitute a group to recommend a methodology for the study to be conducted by NRPC Secretariat, in consultation with RLDC. Based on the methodology suggested by the group, the study was carried out for certification of the non-ISTS lines submitted by UP, Punjab and Rajasthan.

The transmission lines, which fulfil the criteria recommended by the group and are recommended for certification as ISTS for the current Financial Year by NRPC Secretariat are listed below:

S.No.	Name of Transmission Line	Owner STU
1.	400 kV S/C Jodhpur – Merta Line-I	RVPN
2	400 kV S/C Jodhpur – Merta Line-II	RVPN
3	400kV S/C Merta-Ratangarh Line	RVPN
4	400kV S/C Merta-Heerapura Line	RVPN
5	220kV D/C Aau – Baithwasia Line	RVPN
6	220kV D/C Baithwasia - BhawadLine	RVPN
7	220kV D/C Gajner – Bikaner(400kV GSS)Line	RVPN
8	220 KV Nahtaur-Matore (PG)	UPPTCL
9	400 KV Sultanpur- KURSI RD(PGCIL)	UPPTCL

The complete list of transmission lines submitted by STU can be sub-divided in following categories:

(i) Transmission lines, which fulfil the criteria recommended by the Group and hence are recommended to be certified as ISTS

(ii) Transmission lines, which do not fulfil the criteria recommended by the Group and hence may not be certified as ISTS

(iii) The lines, which were claimed to be us ed for inter-state transmission by STUs but were not modelled in the PoC transmission charge calculation and hence exercise to see whether or not these lines carry inter-state power could not be carried out. I t may be mentioned that the responsibility to submit the requisite details for modelling the lines in PoC transmission charge study rests with STU concerned.

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(iv) The transmission lines are, which are natural inter-state lines and hence eed not be certified as ISTS.

The complete category wise list of transmission lines submitted by STUs is enclosed at Annex- III.

Fresh claims for certification of non-ISTS lines being used for inter-state power will have to be submitted by end of December 2016. The result of the study would be shared with member utilities in 128th OCC meeting to be held on 17th October, 2016 and TCC/NRPC will be briefed about deliberations therein.

TCC/NRPC may approve proposal to certify the transmission lines in table above.

B.8 Overview of Grid Operation

NRLDC shall brief members about highlights of grid operation during July, 2016-September, 2016

The actual Power Supply Position (PSP) for July, 2016 & August, 2016 and Provisional Power Supply Position for September, 2016 are enclosed at Annex-IV. Northern Region had a peak power shortage in the range of 0 to 1.3% and energy shortage in the range of 0 to 1%. J&K faced higher peak power as well as energy shortage (of the order of 18%).

The anticipated Power Supply Position (PSP) for the period November-December, 2016 as per LGBR is enclosed at Annex-V.

B.9 Important Regulation/ Orders from Hon'ble CERC (Agenda by POWERGRID)

Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 came into force with effect from date of publication in Official Gazette i.e. from 29.04.2016.

Following new provisions (Clause 4(iii)) have been included w.r.t. transmission

"Where the transmission system executed by a transmission licensee is required to be connected to the transmission system executed by any other transmission licensee and both transmission systems are executed in a manner other than through tariff based competitive bidding, the transmission licensee shall endeavor to match the commissioning of its transmission system with the transmission system of the other licensee as far as practicable and shall ensure the same through an appropriate Implementation Agreement(IA)".

Members may note.

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B.10 Establishment of new 400/220kV substations in Northern Region (Agenda by POWERGRID):

Following new substations were planned under various transmission schemes & are under implementation:

S.No	Name of Substation	MVA Capacity	Expected Schedule
1	400/220kV Kurukshetra S/Stn. (GIS)	2x500	440kV bay and 1no. ICT are ready for commissioning. 2nd ICT expected by Dec'17.
2	400/220kV Bagpat Gas Insulated Stn.	2x500	Commissioned
3	400/220 kV Saharanpur Sub station	2x315	Commissioned
4	400/220kV S/s at Patran	2x500	Commissioned
5	400/220kV Parbati Pooling Station	2x315	Feb'17
6	400/220kV Dehradun Sub station	2x315	Dec'16
7	400/220kV Rajghat Sub station (GIS)	4x500	Land yet to be transferred
8	400/220kV Papankalan -I Sub station (GIS)	4x500	July'17
9	400/220kV Tughlakabad Sub station (GIS)	4x500	July'17
10	220/66kV GIS S/s at Sector 47,Chandigarh	2x160	24 months from investment approval (planned in Feb'17)
11	400/220kV S/s at Kala Amb	7x105	July'17
12	400/220kV S/s at Amargarh	7x105	Oct.'18(Sterlite Grid planning to prepone)
13	400/220kV Kadarpur S/s in Gurgaon area (GIS)	2x500	May'19
14	400/220kV Sohna Road S/s in Gurgaon area (GIS)	2x500	Sep'19
15	400/220kV Prithala S/s in Palwal area (GIS)	2x500	May'19
16	400/220kV Baram(Jauljivi) S/s	2x315	33 months from IA IA planned in Mar'17

For the above 400/220kV substations, implementation of down below 220kV system needs to be commissioned for utilization of the system. Accordingly, CTU requests the states to implement the 220kV system in matching time frame and inform the status of planned 220kV system from these substations to CTU.

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B.11 Augmentation of transformation capacity in existing sub-stations (Agenda by POWERGRID)

In addition to the new sub-stations under implementation/ planned at various locations in Northern Region, augmentation of transformation capacity has also been planned in various existing sub-stations along with bays for downstream network. A List of ICTs along with associated bays of such existing sub-stations is given below.

Sr No.	Substation	Transformation Capacity (MVA)	Commissioning Schedule
1	Shahajanpur 400/220 kV Sub-station	2x 315 MVA	Commissioned (Sep'14)
2	Hamirpur 400/220 kV Sub-station	3x 105 MVA	Feb'17
3	Jalandhar 400/220 kV Sub-station	1x 500 MVA	Commissioned (Jun'16)
4	Kaithal 400/220 kV Sub-station	1x 315 MVA	July'17 (Best effort by Mar/Apr'17)

States are requested to implement the 220kV system for proper utilization of the bays and i nform the status of planned 220kV system identified with the augmentation of transformation capacity in the above sub-stations.

B.12 Follow up of Major Decisions of NRPC.

Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
1	Automatic Meter Reading (AMR) for SEMs	13th NRPC meeting held on 24th June 2009.	In the last NRPC meeting POWERGRID had assured that data from all locations would be made available through AMR by 31st January 2016. As confirmed from NRLDC, as on 13.10.2016 data was being received from about 950 meters and Site Acceptance Test has been conducted for 650 meters. Based

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Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
			on decision taken in Commercial and Operation Coordination sub-committees, POWERGRID and NRLDC were to submit monthly joint reports. However, no r eport has been received so far.
2	Provision of Bus Reactors in Northern Region to Control Over Voltages	Approved in 15th NRPC meeting on 24th December, 2009	Out of 17 no. reactors at 15 locations, 11 no. reactors at 10 locations have been commissioned. The status of remaining 05 l ocations is as under;-
			Nathpa Jhakri (1x80 MVAr): **In the last NRPC meeting, SJVN had informed that LOA would be placed by April 2016. The present status as obtained from SJVN is that the reactor is likely to be commissioned by December 2017.**
			Chamera-I (1x125 MVAr): In the last NRPC meeting, NHPC had informed that Commissioning was expected by October 2016.
			Parbati-II (1x125 MVAr) and Parbati-III (1x80 MVAr): **There is no space at Parbati-III and as such reactors will be installed at Parbati- II. Reactors at Parbati-II will be c ommissioned along with the commissioning of the project in 2018-19.**
			Dehar (2X 63 MVAR) Included in item 4 (below) of this table.

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Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
3.	400 kV Reactors	29th NRPC meeting held in September 2013	The status of reactors approved at 400 kV sub-stations is as under: POWERGRID: Reactors at PANCHKULA, MANESAR, KAITHAL, JAIPUR(S) and BASSI likely to be c ommissioned by October 2016. Reactors at Kanpur and Sonepat likely to be commissioned by November and December 2016 respectively. RVPNL: Reactors at Hindaun and Merta are likely to be commissioned by November 2016.
4	2X63 MVAR Bus reactor and replacement of 250 MVA Trf. with 315 MVA Trf. at Dehar Power House by POWERGRID.	Approved in 30th Standing Committee of Power System Planning of NR held on 19.11.2011	In the 37th NRPC meeting held in March 2016, POWERGRID had informed that reactor was expected to be commissioned by May 2016. Further, ICT was expected to be commissioned by July 2016. POWERGRID may update the status.
5	Unified Real Time Dynamic State Measurement (URTDSM) Scheme.	Approved in 27th NRPC meeting held on 13th July, 2012 & 30th November, 2012	In the 8th meeting of TeST sub-committee held in July 2016, POWERGRID had informed that PMUs and associated materials for 74 nos. of Sub-stations in Northern Region have been received at Site. PMUs at 68 nos. of Sub-stations have been i nstalled and are reporting to PDS installed in NRLDC and SLDCs. Further, the scheme would be commissioned by January 2017.
6	Power Evacuation	28th Standing	In the 37th NRPC meeting held in

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Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
	from Dulhasti Power Station, Kishtwar (J&K) – Construction of 2nd400 kV line	Committee	March 2016, POWERGRID had informed that the project was likely to be c ommissioned by October 2016. POWERGRID may update the status.
7	Transmission system associated with RAPP-7&8.		The status in the 37th NRPC meeting held in March 2016 is as under: • POWERGRID had informed that commissioning of RAPP-Kota section was expected by December 2016. • 400 kV D/C line from RAPP-Sujalpur (MP) had been awarded to M/s Sterlite under TBCB with completion target of February, 2016. • POWERGID was requested to expeditiously provide to NPCIL, PLCC and associated equipment for the bays at RAPP-D. In a r elevant development, Hon'ble CERC vide order dated 21.09.2016 has directed that transmission charges for the RAPP- Shujalpur 400 kV D/C transmission line w.e.f from scheduled date of commercial operation ("SCOD") i.e. 01.03.2016 till bays are commissioned shall be paid by NPCIL. POWERGRID/NPCIL may update

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Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
			the status.
8	Transmission system associated with Kishenganga HEP. Kishenganga – Amargarh 220 kV D/c Kishenganga – Wagoora 220 kV D/c	33rd Standing Committee Meeting held on 23/12/2013	POWERGRID have informed that completion schedule of transmission system associated with Kishenganga HEP has been delayed due to unrest in Kashmir. The revised schedule is: ➢ Kishenganga – Wagoora 220kV D/c line - (Mar.'18) ➢ Kishenganga – Amargarh 220kV D/c line – (July'17)
9	Fiber Optic based communication system in NR and Additional OPGW connectivity in Northern Region under fiber optic expansion project	18th NRPC meeting held on 27th November, 2010 and 28th NRPC meeting held in 22nd March, 2013	In 08th TeST committee meeting held on 26th July, 2016, POWERGRID had i nformed that out of 5120 kms of OPGW under central sector, 4957 Kms have been completed and balance 163 kms of OPGW was on under construction lines for which progress depends on completion of transmission lines. For state sector, work has awarded in 3 pac kages of 5293 kms out of which installation of 726 kms have been completed. Work on all packages was expected to be completed progressively by Mar/April'2017.
10	Rectification of deficiencies coming out of Basic Protection Audit carried out by CPRI in association w ith	27th NRPC meeting held in November 2013	Majority of the work has already been completed. As per the status updated in 127th OCC meeting (Copy enclosed as Annex-VI), all remnant work are likely to be completed by December, 2016.

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Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
	POWERGRID		
11	Third party Protection audit of intra-state system / balance system not covered in Basic Protection Audit	27th NRPC meeting held on 30th November, 2012.	TPPA has been carried out either by CPRI or by team of protection expert under the aegis of NRPC at 163 sub-stations. UPPTCL and PSTCL have to submit the action plan for rectification of deficiencies observed.
12.	Planning, procurement and deployment of Emergency Restoration System.	In the 34th NRPC meetings 20th March, 2015	In the 34th NRPC meetings held on 20th March, 2015, it was also decided that those states, which had not taken any substantive action so far with regard to procurement of ERS, should do so by June 2015. Status as updated in 127th OCC meeting is as under: **DTL**:-Order has been place for 02 nos. of ERS. Supply expected by May,2017 **PSTCL**:- Tenders are under evaluation of the legal cell. Order is expected to be placed by 31.12.2016 **UPPTCL**:-Order for 04 nos. of ERS has been placed. **RRVPNL**:-Proposal was being prepared to be put up to management. **HVPNL**:-In the process of putting procurement of ERS in MYT proposal to the SERC.

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Sl.No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Present Status
			HPSEBL and PTCUL:-HPSEB Ltd/HPPTCL stated that they were exploring the possibility of procuring the ERS in hilly region. Some of the vendors have been called for the suitability. PTCUL informed that issue was under consideration. **BBMB**:-Partner states have agreed to provide the ERS as and when required by BBMB.

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COMMERCIAL ISSUES

C.1 Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to Part Load Operation and Multiple Start/Stop of Units(AG)

Central Electricity Regulatory Commission notified on 6th April 2016 Central Electricity Regulatory Commission (IEGC) (Fourth Amendment) Regulations, 2016, which inter-alia contains provisions relating to Technical Minimum Schedule for operation of Central Generating Stations and Inter-State Generating Stations, whose tariff is determined or adopted by the Central Commission. These Regulations further provide for compensation to Generating Stations for degradation of Heat Rate, Auxiliary Consumption and Secondary Fuel Oil consumption due to part load operation and multiple start-ups of units. Sub-regulation 7 of Regulation 6.3 B of IEGC mandates RPCs to work out a mechanism for compensation for station heat rate and auxiliary energy consumption for low unit loading and for secondary fuel oil consumption for additional start-ups in excess of 7 start-ups.

In accordance with the (IEGC) (Fourth Amendment) Regulations, 2016, NRPC Secretariat had prepared draft mechanism for compensation to Generating Stations for degradation of Heat Rate, Auxiliary Consumption and Secondary Fuel Oil consumption due to part load operation and multiple start-ups of units.

The said draft was brought in the 31st Commercial Sub-Committee (CSC) meeting held on 04th July, 2016 and 125th OCC meeting held on 22nd July, 2016 for detailed discussion and deliberation among the stakeholders. Accordingly, the draft was modified by incorporating the views of stakeholders. Subsequently, a meeting was held among the officials of CERC and NRPC Sectt. on 01.09.2016 at NRPC Sectt., New Delhi and based on these deliberations, the draft has been modified and was enclosed as Annex - VII.

Further, in 127th OCC meeting held on 23.09.2016, representative of NTPC sought time for offering comment on revised draft. Other members had no comment to offer on revised draft. It was decided that all the members including NTPC may submit comment to NRPC secretariat within a week. Subsequently, NTPC has submitted their comments and the matter is slated for discussions in the 128th OCC meeting scheduled on 17.10.2016. TCC/NRPC will be briefed about the deliberations in OCC.

Members may deliberate.

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C.2 Default in payment of outstanding dues and surcharge by beneficiaries (Agenda by NHPC)

The details of outstanding dues for more than 60 days as on 30.09.2016 in respect of defaulting beneficiaries of NHPC are as given below:

Sl. No.	Beneficiary	Principal Outstanding Dues(more than 60 days)	Surcharge up to 30.09.2016	Outstanding dues including surcharge
1.	PDD, J&K	486.74	614.66	1101.40
2.	UPPCL	164.77	7.83	172.60
3.	BYPL	266.31	94.07	360.38
4.	PSPCL	0	12.05	12.05
5.	JVVNL	21.61	15.08	36.69
6.	AVVNL	14.64	11.75	26.39
7.	JdVVNL	36.34	12.78	49.12
Rajasthan Total		91.62	39.62	131.24

PDD, J&K is irregular in making payment of dues and is the major defaulter of NHPC. It is given to understand that the outstanding dues considered under UDAY scheme amounting to Rs 690.27 Crs is to be released in this Financial Year. However total dues needs to be released on priority by PDD,J&K.

Due to non-payment of dues by BYPL, it was under Power Regulation w.e.f. 00:00 hrs of 28.03.2015 upto 31.08.2016. However, regulation of BYPL has been lifted and entire share of BYPL has been reallocated to BRPL up to 31.03.2018. The total dues against BYPL has risen to ₹ 360.38 Crs. BYPL needs to liquidate the total dues before 31.03.2018 for which a liquidation plan is to be submitted by BYPL immediately.

Rajasthan discoms are releasing only small part payments against principal dues due to which surcharge is increasing day by day. Rajasthan discoms need to release full payment against principal dues as well as surcharge on priority.

PSPCL is also requested to release payment against surcharge at the earliest possible.

The above beneficiaries may kindly be i mpressed upon to liquidate the outstanding dues and surcharge on priority.

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C.3 Opening of Letter of Credit (LC) (Agenda by NHPC)

(i) **BRPL:** LC opened by BRPL expired on 31.03.15. BRPL did not open LC of requisite amount of ₹ 26.58 Crs. till date.

(ii) **UPPCL:** LC of ₹ 18 Crs opened by UPPCL expired on 30.04.2016. As on date LC of only ₹ 100 Crs is available against requisite value of ₹ 115.77 Crs. LC of balance amount is to be opened.

These beneficiaries may kindly be impressed upon to open LC for the requisite amounts in favour of NHPC Ltd.

C.4 Issues of Reconciliation (Agenda by NHPC)

HPPC, Haryana and UPCL have not signed the reconciliation statements of energy accounts since 1st quarter of FY 2015-16 and 3rd quarter of FY 2015-16 respectively.

These beneficiaries may kindly be impressed upon to sign the reconciliation at the earliest.

C.5 Signing of PPA of Tawang HE Projects Stage-I & II (Agenda by NHPC)

The beneficiaries have been requested to convey their consent for signing of PPA of Tawang HE Project, Stage I (600 MW) & Stage II (800MW). All beneficiaries of Northern Region except UPCL have not sent their consent for signing the PPA.

These beneficiaries may kindly convey the consent for signing the PPA at the earliest.

C.6 Extension of PPAs/BPSAs (Agenda by NHPC)

All the beneficiaries are being requested to convey their consent for extension of PPA/BPSA on the existing terms and conditions for a period of 35 years from the date of COD of the respective project.

The beneficiaries along with the due PPAs/BPSAs for extension are given below:

S. No.	Beneficiary Name	Power Station due for extension of PPA/BPSA
1.	UT Chandigarh	Salal, Uri-I, Tanakpur, Chamera-I, Sewa-II, Chamera-III, Uri-II & Parbati-III
2.	Rajasthan Discoms	Chamera-III, Uri-II , Parbati-III & Sewa-II
3.	PDD,J&K	Salal, Uri-I, Tanakpur, Chamera-I, Sewa-II,

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		Dulhasti, Chamera-II, Chamera-III, Uri-II & Parbati-III
4.	HPPC, Haryana	Uri-II & Parbati-III
5.	PSPCL, Punjab	Sewa-II, Chamera-III, Uri-II & Parbati-III
6.	UPCL, Uttarakhand	Uri-II & Parbati-III
7.	UPPCL, Uttar Pradesh	Salal, Uri-I, Tanakpur, Chamera-I, Sewa-II, Chamera-II, Chamera-III, Uri-II & Parbati-III

These beneficiaries may kindly be impressed upon to convey the consent for early signing the PPAs/ BPSA for above NHPC power stations mentioned against them at the earliest.

C.7 Surrender of power from selected power stations (Agenda by NHPC)

Some beneficiaries have intimated to surrender the share of Power from a few selected power stations in spite of having PPAs on the pretext of being surplus in power.

NHPC stand on the subject is very clear that beneficiaries should not selectively accept or reject power from any power station as they should see the weighted average rate of power from all the power stations of NHPC which is very much reasonable and even lower than the overall average tariff of power purchase of the beneficiary.

Allocation of power to any state by "Ministry of Power" is done based upon long term requirement of the states and therefore duration of PPAs does not have any bearing on the allocation of power by MoP.

C.8 Request for immediate release of THDCIL's payments by its beneficiaries (Agenda by THDCIL)

THDCIL India Limited (THDCIL) has been supplying quality energy from its presently operating Tehri HPP (1000MW) and K oteshwar HEP (400MW) generating stations to all the beneficiaries of Northern Region. Despite vigorous efforts, BSES Delhi Discoms, UPPCL (UP), PDD (J&K) have been making payments very slowly & much beyond the due dates. BSES Yamuna Power Ltd. has not made any payment after 07.10.2015, when they had paid only Rs.7.0 cr PDD, J&K has also not made any payment after 27.08.2015. Due to inordinately delayed payment, the outstanding is rapidly accumulating resulting into severe financial hardships for THDCIL to the extent of forcing it to avail short term loans bearing heavy interest to meet day to day working capital needs. As on date, a total amount of Rs. 2728.81Cr. is pending for payment,

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out of which Rs. 2177.43Cr. is due for more than 60 days. The details of major defaulters are as under:-

Sl No.	Beneficiaries/ Discoms	Total Outstanding (Rs. in Cr.)	Outstanding due for more than 60 days (Rs. in Cr.)	Payment due since the supply month
1	BRPL, Delhi	293.71	257.11	Feb'15
2	BYPL, Delhi	273.22	266.91	Aug'13
3	UPPCL, UP	1830.84	1530.80	April'15
4	PPD, J&K	133.99	89.45	Nov'15
5	HPSEBL, Himachal Pradesh	1.79	1.79	Jun'15
6	JVVNL, Rajasthan	29.01	9.29	Jun'16
7	AJVVNL, Rajasthan	22.90	9.18	May'16
8	JdVVNL, Rajasthan	26.71	10.95	May'16

THDCIL has been earnestly requesting bilaterally as well as through this forum to release the payments, there has not been much headway in the case of Delhi Discoms and J&K, as the outstanding amount has been steadily increasing.

The above beneficiaries should immediately release the outstanding amount, mentioned there against, which is due for more than 60 days otherwise must inform a time bound payment plan to liquidate the old outstanding dues.

PDD, J&K has not opened the LC till date even after repeated requests. PDD, J&K may kindly be impressed upon for opening of LC on priority. The required amount of LC for FY 2016-17 is ` 12.00 Cr.

C.9 Intimation for Payment of Energy and other bills (Agenda by THDCIL)

In 33rd TCC and 37th NRPC Meeting, the issue was agreed, but still, the beneficiaries except TPDDL, releases the payments without informing the details such as the bill against which the payments has been released etc. The beneficiaries are once again requested to intimate the details immediately after release of any payment as the same is necessary for reconciling the amount received. This will help in eliminating any dispute in mutual business interest.

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C.10 Payments through RTGS (Agenda by THDCIL)

Despite of regular follow-up for payments through RTGS only, HPPC, Haryana is still making payments through cheques. HPPC, Haryana may kindly arrange payment of bills through RTGS only henceforth.

C.11 Delay in release of payment of SJVN bills by the beneficiaries of NJHPS & RHPS (Agenda by SJVN Ltd)

As on 3.10.2016, an amount of Rs. 1401.81 Crore is outstanding for a period more than sixty (60) days from some of the beneficiaries of NJHPS & RHPS. The beneficiaries, who have not cleared their outstanding dues are Govt. of HP, HPSEB, PDD J&K, UPPCL, BRPL, BYPL, UPPCL, Rajasthan Discoms and DTL as per detail given below:

Sr. No	Name of Beneficiary	Overdue Outstanding including LPS in Rs Crore
1	GOHP	797.75
2	J&K	211.67
3.	UPPCL	172.13
4.	BYPL	125.42
5.	BRPL	11.47
6.	Ajmer VVNL (Rajasthan Discoms)	56.85
7	Jodhpur VVNL (Rajasthan Discoms)	
8	Jaipur VVNL (Rajasthan Discoms)	
9	HPSEB	16.44
10.	DTL	10.07
	Total	**1401.81**

a.) **GOHP and HPSEB:** The outstanding of HPSEB and GoHP is Rs 16.44 Crore and Rs 797.75 Crore respectively. As per the direction of GoHP, the power of NJHPS & RHPS had been assigned to HPSEB since Dec 2013 & April 2015 respectively. As on 31.03.2016, the outstanding of GOHP was Rs 613.74 Cr. Thereafter, an amount of Rs 325.01 Crores had been billed to HPSEB on ac count of assigned power of GOHP. Against the total outstanding amount of Rs 938.75 Crores till 03.10.2016, HPSEB/GoHP had released only Rs 141.00 Crores during 2016-17. GOHP/HPSEB may be impressed upon to clear this huge outstanding at the earliest.

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b.) **PDD J & K**: The power of PDD, J &K for NJHPS was regulated on 01.12.2015. Upon receipt of payment of Rs 161.31 Cr. in NJHPS account & on assurance to release further amount of Rs 95.00 Cr in due course of time, power was deregulated on 10.04.2016. The J&K had paid only Rs 62.46 Crores after power deregulation. An amount of Rs 211.67 Crore (combined outstanding of NJHPS & RHPS) is overdue from Power Development Department (PDD) J&K.

PDD J&K is requested to release the outstanding immediately.

c.) **BYPL:** Due to continuous default by BYPL for liquidating their dues and non-submission of LC, their share of power from NJHPS was regulated since September 2013. The outstanding of BYPL has now accumulated to Rs 125.42 Crore.

d.) **UPPCL:** The outstanding of UPPCL has accumulated to Rs 172.13 Crores. UPPCL is requested to release the outstanding at the earliest.

e.) **Rajasthan Discoms:** The combined accumulated dues of Rajasthan Discoms has reached Rs 56.85 Crore. During the meeting with the senior officials of Rajasthan Discoms, it was assured to liquidate the outstanding at the earliest. Only a par t payment has been r eceived and large outstanding is still overdue.

It is requested that the NRPC committee may intervene in liquidation of outstanding dues from the above defaulting entities as it is affecting the cash flow of SJVN and jeopardising the growth of the organisation.

C.12 Non Opening of Letter of Credit by certain beneficiaries for power supplied from NJHPS (Agenda by SJVN Ltd)

As per provisions of CERC regulations and terms and conditions of power purchase agreement, beneficiaries are required to submit a Letter of Credit (LC) before start of the relevant financial year, but the following beneficiaries are yet to submit their LC. Request letters for submission of LC for 2016-17 were sent to all Beneficiaries to open the LCs on priority. The following beneficiaries are yet to open the LCs:-

a) **Power Development Deptt. of J&K:**

Inspite of numerous reminders Power Development Department (PDD), J&K has not yet opened Letter of Credit since May 2011 whereas as per the Power Purchase Agreement they have to submit a confirmed, revolving, irrevocable Letter of Credit in favour of SJVN for an a mount equivalent to 105% of their average monthly billing of preceding 12 months with appropriate bank as mutually acceptable to parties. The LC shall be kept valid at all the time during the validity of the Power Purchase

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Agreement. As such Power Development Department of J&K may be impressed upon to submit valid Letter of Credit to SJVN as per terms of PPA.

b) **M/s BYPL and M/S BRPL:**

BRPL and B YPL have not opened a c onfirmed, revolving, irrevocable Letter of Credit in favour of SJVN for an amount equivalent to 105% of their average monthly billing of preceding 12 months with appropriate bank as mutually acceptable to parties for 2015-16 & 2016-17.

c) **GOHP:**

Since Dec 2013, GOHP has assigned their power of NJHPS to HPSEB. Despite the instruction from Principal Secretary Power, Government of Himachal Pradesh, HPSEB is yet to open the Letter of Credit against the power assigned to them by GoHP.

C.13 Non Opening of Letter of Credit by certain beneficiaries for power supplied from RHPS (Agenda by SJVN Ltd)

In terms of Power Purchase agreement and relevant provisions of CERC regulations, the following beneficiaries have yet to open the Letter of credit for the FY 2016-17.

a. GoHP
b. HPSEB
c. PDD,J&K
d. UPPCL
e. Uttar Haryana Bijli Vitaran Nigam Ltd, Panchkula

The Beneficiaries of RHPS may be i mpressed upon to open the LC as per CERC regulation and as per PPA terms.

C.14 Payment of energy bills of NJHPS and RHPS through electronic modes (Agenda by SJVN Ltd)

In 33rd TCC & 37th NRPC meeting of NRPC, the matter regarding releasing of payment through electronic modes by the beneficiaries to generating companies was discussed. In the meeting it was decided that all the payments by the beneficiaries will be made through electronic modes i.e. RTGS/NEFT.

Further, representative of Dakshin Haryana Bijli Vitran Nigam agreed to convey the decision of TCC to HPPC which makes payment on the behalf of Haryana discoms.

Presently, all the beneficiaries of SJVN are making payment through electronic modes except HPPC (Haryana Power Purchase Centre). HPPC may be

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impress to follow the decision taken in last TCC / NRPC meeting by making the payment of energy bills through electronic modes.

C.15 Consent for purchase of power from Naitwar Mori Hydro Electric Project (NMHEP), 60 MW (2X30 MW) in Uttarakhand (Agenda by SJVN Ltd)

SJVN Limited, a joint venture of the Government of India (GOI) and the Government of Himachal Pradesh (GOHP) is operating and maintaining Nathpa Jhakri Hydro Power Station (1500 MW) and Rampur Hydro Power Station (412 MW) in the downstream of NJHPS since May, 2004 & December, 2014.

Further, Government of Uttarakhand (GoUK) has allotted Naitwar Mori Hydro Electric Project (2X30 MW) on River Tons (a tributary of river Yamuna) in district Uttarkashi in the state of Uttarakhand to SJVN Ltd.. A Memorandum of Understanding (MoU) for execution of Naitwar Mori HEP was signed with the GoUK on 21st November, 2005.

The Techno Economics Clearance based on Detailed Project Report of Naitwar Mori Hydro Electric Project (2X30 MW) has been accorded by the Government of Uttarakhand on 02.03.2010. Further, the Environment and Forest Clearances has also been accorded from Ministry of Environment, Forest and Climate Change, Govt. of India. The power from the project shall be evacuated through 220 KV D/c line from NMHEP to Mori 220/132 KV S/s of PTCUL and the PIB note submitted to Ministry of Power on June, 2016 for its clearance.

The Naitwar Mori Hydro Electric Project (2X30 MW) is a run–of- river type scheme and is designed to generate Annually 265.50 MUs in 90 % dependable year and the commissioning of the project is expected in August, 2020.

As per the condition of Memorandum of Understanding (MoU), 12% of the net energy shall be given to Government of Uttarakhand (GoUK) free of cost. SJVN would be in a position to offer the balance power being generated from project to interested states / UTs of the Northern Region as per the prevalent policies of Govt. of India issued from time to time.

The Project is planned to be financed on 70: 30 debt equity ratio. The estimated project cost is Rs 624.11 Cr at April, 2016 price level. The levelized tariff of the generated power is Rs 6.14 per Kwh based on above mentioned project cost and the final tariff shall be calculated by the appropriate Regulatory Commission.

It is, therefore, requested to convey the consent of constituent's members for purchase of power, indicating the quantum of power required from this Hydro project.

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D. ITEMS FOR NRPC ONLY

D.1 Transmission proposals as agreed in 38th Standing Committee Meeting on Power System Planning of Northern Region held on 30/05/2016

D.1.1 WR- NR 765kV Inter-regional corridor

The total power transfer requirement to NR is likely to increase to 26500-27000 MW in next 4-5 years. Since power from generation projects in WR (particularly in Chhattisgarh) and in Odisha flows through WR-NR corridor and therefore WR – NR corridor gets stressed. Accordingly, an additional transmission corridor was planned in NR and WR Standing Committee meetings, which comprise of:

- 765kV Vindhyachal Pooling Station – Varanasi D/c Line
- 330 MVAr line reactor in both lines at Varanasi end

D.1.2 400kV bays at Bhinmal and Sikar substations under ISTS

For integration of transmission system of RVPN associated with renewable projects, 2 nos. of 400kV bays each at Bhinmal and Sikar substations were agreed under ISTS in 30th Standing Committee Meeting of NR for termination of 400kV D/c lines being constructed by RRVPNL. However, time frame for completion of bays was not firmed up. Subsequently, RRVPNL vide letter dated 13/04/2016 intimated the time frame for bays. The matter was again discussed in 38th SCM held on 30/05/2016, wherein following was agreed under ISTS:

- 2 nos. of 400kV line bays at Bhinmal (PG) Substation
- 2 nos. of 400kV line bays at Sikar (PG) Substation along with 2 nos. of 50 MVAr line reactors

D.1.3 Transmission system for Ultra Mega Solar Parks in Fatehgarh, Distt. Jaisalmer Rajasthan

M/s Adani Renewable Energy Park Rajasthan (AREPL) Ltd. has applied for connectivity (1000 MW) and Long Term Access (1000 MW) in ISTS with commissioning schedule of Dec'17 for its Ultra Mega Solar Power Park at Fatehgarh with target region as NR. To evacuate power from the Fatehgarh UMSPP, following transmission system was agreed in the 38th NR SCM:

- 765kV Fatehgarh Pooling Sub Station – Bhadla (PG) D/c line (initially to be operated at 400kV)

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- Establishment of 400kV Pooling Station at Fatehgarh (with a provision to upgrade at 765kV level)
- 2 nos. of 400kV line bays at Fatehgarh Pooling Station
- 1X125 MVAr Bus Reactor at 400kV Fatehgarh Pooling Substation

As agreed in the 36th Empowered committee meeting on transmission held on 26.07.16, it was decided that scheme shall be implemented through TBCB route. Further, it was also decided that POWERGRID shall provide 2 nos. of 400kV line bays at Bhadla Pooling Station under above scheme.

D.1.4 Provision of 2 nos. of 765 kV bays at Ajmer (POWERGRID) and 2 nos. of 400 kV bays at Bikaner (POWERGRID) under ISTS for new intrastate interconnections to ISTS

Bhuj – Banaskantha – Chittorgarh – Ajmer – Bikaner – Moga 765 kV D/c line alongwith 765/400kV substations at Chittorgarh, Ajmer and Bikaner are being implemented under Green Energy Corridor. For interconnection of this Green Energy Corridor with the intra-state system of Rajasthan, RRVPNL has proposed 765 kV D/c line from RVPN's 765/400kV Korna substation to Ajmer 765/400kV (PG) substation with 2x240 MVAR, 765kV switchable line reactors at Ajmer (PG) and Korna (RVPN) substations. The two nos. of 765 kV bays at Ajmer along with 2x240 MVAR, 765 kV switchable line reactors are agreed to be provided under ISTS.

In earlier Standing Committee Meeting of transmission planning of NR, LILO of one circuit of Bhadla(RRVPNL) – Bikaner(PG) 400kV D/c (Quad) line at Bikaner(PG) was agreed and is under implementation. Considering the unbalanced loadings, LILO of the second circuit of Bhadla (RRVPNL) – Bikaner 400 kV D/c (Quad) line at Bikaner (PG) was agreed in 37th NR SCM. For LILO of second circuit, 2 nos. of 400 kV line bays at 765/400kV Bikaner S/s are also agreed to be provided under ISTS.

Accordingly following works are to be carried out under ISTS:

- 2 nos. of 765 kV bays at 765/400kV Ajmer S/s along with 2x240 MVAR, 765 kV switchable line reactors
- 2 nos. of 400 kV line bays at 765/400kV Bikaner (POWERGRID)

As agreed in the 36th Empowered committee meeting on transmission held on 26.07.16, it was decided that scheme shall be i mplemented through regulated tariff mechanism

D.1.5 Augmentation of Transformation Capacity at Raebareli & Sitarganj 220/132 kV substations

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Replacement of two nos. of 100MVA, 220/132kV ICTs by two nos. of 200MVA 220/132kV ICTs at 220/132kV Raebareli(PG) substation was agreed in-principally during the 37th Standing Committee meeting of Transmission Planning of NR held on 20/01/2016. Further, it was also agreed that out of the two replaced transformers, one ICT may be installed at Sitarganj(PG) S/s and other may be used as a regional spare unit.

Accordingly, the scheme "Augmentation of Transformation Capacity at Raebareli & Sitarganj 220/132 kV substations" is proposed to be implemented with following scope:

- Two nos. of 100 MVA, 220/132 kV ICTs at Raebareli S/s to be replaced by two nos. of 200 MVA ICTs 220/132 kV ICTs.
- One out of the two replaced 100 MVA, 220/132 kV ICTs at Raebareli S/s may be installed at Sitarganj S/s and the other may be used as regional spare.

D.1.6 Provision of 2 nos. of 220 kV bays at Fatehpur and 1 220 kV bays at Roorkee under ISTS

During the 37th Standing committee meeting on Power System Planning of NR held on 20/01/2016, 2 nos. of 220kV bays at 765/400kV Fatehpur (PG) S/s under ISTS were agreed upon UPPTCL request for Fatehpur(PG)– Sarh (Kanpur) 220kV D/c line.

Similarly, during the 35th Standing committee meeting on Power System Planning of NR, 1 no. of 220kV bays at 400/220kV Roorkee (PG) S/s under ISTS was agreed upon PTCUL request for drawing power from Roorkee(PG) substation.

Members may discuss and agree to the above proposals.

D.1.7 Transmission System associated with Kishenganga HEP

The scheme "Transmission System associated with Kishenganga HEP was agreed in 33rd Standing Committee on Power system Planning for Northern Region held on 23/12/2013 with following scope:

- Kiahenganga – Wagoora 220kV D/c line
- Kishenganga – Amargarh 220kV D/c line

During 37th meeting of Northern Regional Power Committee on Power System held on 22/03/2016, NHPC informed that commissioning schedule of Kishenganga HEP is November 2016. Due to ongoing disturbances in the

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valley and bad w eather conditions, the completion of Kishenganga HEP is likely to be delayed from Nov'16 to March'17.

Further it is to inform that completion schedule of transmission system associated with Kishenganga HEP has been delayed due to unrest in Kashmir. The revised schedule is:

- Kishenganga – Wagoora 220kV D/c line - (Mar.'18)
- Kishenganga – Amargarh 220kV D/c line – (July'17)

Members may note.

D.1.8 Following LTA/CON applications have been granted LTA/Connectivity in the recent past by CTU as per the Detailed Procedures of Central Transmission Utility of the CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009.

Details of Connectivity Applications granted by CTU

S No.	Name of the Applicant	Location	Region	Installed Capacity (MW)	Connectivity Granted for (MW)	Connectivity Granted from	Transmission System identified for Connectivity
1	THDC India Ltd. (Tehri PSP)	Uttarakhand	NR	1000	1000	3-Nov-2017	Through Bus Bar extension at Tehri Bus
2	Adani Renewable Energy Park Rajasthan Limited	Bhadla, Rajasthan	NR	250	250	15-Dec-2016 or availability of Tr. System whichever is later	Adani Gen. Switchyard - Bhadla (PG) Pooling Station 220kV D/c line
3	Saurya Urja Company of Rajasthan Ltd	Jodhpur, Rajasthan	NR	500	500	01-Jan-2017 or availability of Tr. System whichever is later	Saurya Urja generation switchyard - Bhadla (PG) Pooling Station 220 kV D/c (Twin Zebra) line
4	L&T Uttaranchal Hydropower Limited	Uttarakhand	NR	99	99	15-Nov-2017	LILO of one circuit of Srinagar-Baramwari 220 kV D/C line at Singoli Bhatwari Generation switchyard
5	Adani Renewable Energy Park	Jaisalmer, Rajasthan	NR	1500	1000	30-Dec-2017 or availability of Tr. System	i) Adani Generation Swtitchyard - Fatehgarh Pooling

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	Rajasthan Limited					under ISTS whichever is later	Station 400kV D/c line (by applicant), ii) Fatehgarh PS - Bhadla (PG) 765kV D/c line alongwith Fatehgarh PS (under ISTS)
6	Indian Oil Corporation Ltd.	U.P	NR	100	100	31-Dec-2018	IOCL Refinery-Math (UPPTCL) 220 kV D/c line

Details of Long Term Access Applications granted by CTU

Sl. No.	Name of the Applicant	Location	Regi on	LTOA/LTA granted for (MW)	Point or points of injection	Tr. System Requirement	
						Dedicated / Connectivity Tr. System	Common
1	THDC India Ltd. (Tehri PSP)	Tehri, Uttarakhand	NR	1000	Tehri PSP, Uttarakh and	Through Bus Bar extension at Tehri Bus	Tehri Generation – Koteshwar Pooling Stn. 400 kV S/c (Quad Conductor), Establishment of 765/400 kV GIS substation at Koteshwar Plg. Stn., Aug. of 765/400 transformation capacity by 1x1500 MVA at Meerut, Charging of Tehri Pooling – Meerut line at 765 kV level.
2	Himachal Pradesh Power Corporation Limited (Shongtong)	Himachal Pradesh	NR	450	Shongton g Karcham HEP, Himachal Pradesh	Shongtong Generation Switchyard	Shongtong Karcham – Wangtoo 400 k V D/c Line (Quad HTLS Conductor Equivalent to about 3000MW) – 18 km (ISTS) Establishment of 220/400kV GIS Pooling Station at Wangtoo along with LILO of both circuits of 400 k V Karcham Wangtoo-Abdullapur

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							D/c line at Wangtoo S/s
3	Solar Energy Corporation of India (Rajasthan to Punjab)	RVPN-STU interconnection with ISTS in Rajasthan	NR	30	RVPN-STU interconnection with ISTS in Rajasthan	Not Applicable	Existing Transmission System
4	Saurya Urja Company of Rajasthan Ltd. (U-I)	Badla, Rajasthan	NR	250	765/400/220 kV Bhadla Pooling Station	Saurya Urja generation switchyard - Bhadla (PG) Plg. Stn. 220 kV D/c (Twin Zebra) line	Transmission System for Solar Power Parks at Bhadla, Rajasthan
5	Adani Renewable Energy Park Rajasthan Limited	Bhadla, Rajasthan	NR	250	765/400/220 kV Bhadla Pooling Station	Adani generation switchyard - Bhadla (PG) Pooling Station 220 kV D/c line	Transmission System for Solar Power Parks at Bhadla, Rajasthan
6	Saurya Urja Company of Rajasthan Ltd. (U-II)	Badla, Rajasthan	NR	250	765/400/220 kV Bhadla Pooling Station	Saurya Urja generation switchyard - Bhadla (PG) Pooling Station 220 kV D/c (Twin Zebra) line	Transmission System for Solar Power Parks at Bhadla, Rajasthan
7	Himachal Baspa Power Company Ltd. (earlier Jaiprakash Power Ventures Ltd)	Himachal Pradesh	NR	264	Karcham Wangtoo generation	NIL	Existing Transmission System

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8	NSL Tidong Power Generation Private Limited	Himachal Pradesh	NR	88	NSL Tidong Power Gen. Pvt. Ltd., Himachal Pradesh	a) Tidong-Jangi Pooling Station 220 kV D/c line - by HPPTCL b) 2x315 MVA, 220/400 kV GIS Jangi PS	Transmission System for transfer of power to Southern Region ie.: a) Angul – Srikakulam – Vemagiri (PG) 765 kV D/c line b) Wardha – Nizamabad 765 kV D/c line c) Nizamabad – Hyderabad (Maheshwaram) 765kV D/c line
9	Adani Renewable Energy Park Rajasthan Ltd.	Jaisalmer, Rajasthan	NR	250	400kV Fatehgarh Pooling Station	Adani Generation Swtitchyard - Fatehgarh Pooling Station 400kV D/c line	Existing and under construction Transmission System of Green Energy Corridor
10	Adani Renewable Energy Park Rajasthan Ltd.	Jaisalmer, Rajasthan	NR	750	400kV Fatehgarh Pooling Station	Adani Generation Swtitchyard - Fatehgarh Pooling Station 400kV D/c line	Existing and under construction Transmission System of Green Energy Corridor

D.2 Status of UI charges:

As per the information received from NRLDC, the status of payment of UI charges payable/Receivable by the utilities as on 30.09.2016 is as given below:

Rs. In Lakh

		Principal UI Charges	Interest on UI charges	Principal + Interest
S.No	Utility Name	Net UI Payable(+) or Receivable(-)	Net UI Interest Payable(+) or Receivable(-)	Net Amount Payable (+) or Receivable(-)
		1	2	3=1+2
1	Jammu and Kashmir	0.30296	0.00000	0.30296
2	Uttar Pradesh	33593.6208	3531.85195	37125.47275
3	Uttarakhand	0.00000	0.03544	0.03544

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4	EPPL	0.00000	1.14146	1.14146
5	Greenko Budhil	0.00000	0.00343	0.00343

#1 The differential amount of Rs. 16039.76272 Lakh is there due to different UI ceiling rate as per CERC Regulation on UI Charges and High Court of Allahabad, Lucknow bench order dated 2.5.2008 and CERC order dated 29.5.2008 for implementation of High Court order which is subject to review based on the conclusion of the proceeding in the matter presently pending in High Court
#2 The additional UI charges of UP for the FY 2009-10 and up t o week 5 of FY 2010-11 are Rs. 21085.71003 Lakh as per CERC Regulation on UI Charges which UPPCL was not required to pay in pursuance of High Court of Allahabad, Lucknow bench order dated 12.11.2009 and CERC order dated03.12.2010
#3 Accordingly the UI charges Payable by UP is Rs. 0.00000 Lakh (Including interest)

On commencement of Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations 2014 (w.e.f. 17th February 2014), Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulation, 2009 stand repealed.

In these Regulations, it is provided that the "Regional Unscheduled Interchange Pool Account Funds" shall continue to operate till the UI accounts settlement for the period prior to commencement of these Regulations is completed and balance if any, in UI Pool account shall be transferred to the Power System Development Fund.

Accordingly, the above status would be presented until UI charges upto the period 16.02.2014 and any revisions thereof are paid fully.

Utilities that have to pay the UI charges and interest charges are requested to release the outstanding amount at the earliest.

D.3 Status of Deviation Settlement Charges

As per the information received from NRLDC, the status of payment of Deviation charges payable/Receivable by the utilities as on 30.09.2016 is as given below:

(Rs. In Lakh)

		Principal DS Charges	Interest on DS charges	Principal + Interest
S.No	Utility Name	Net DSC Payable(+) or Receivable(-)	Net DSC Interest Payable(+) or Receivable(-)	Net Amount Payable(+) or Receivable(-)
		1	2	3=1+2
1	CHANDIGARH	38.9182	0	38.9182
2	DELHI	0	0	0
3	HARYANA	0	0	0

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4	HIMACHAL	184.17765	0	184.17765
5	JAMMU AND	7135.2356	0	7135.2356
6	NEPAL	14.15746	0	14.15746
7	POWERGRID_NR	2.79654	0	2.79654
8	PUNJAB	0	0	0
9	RAILWAYS	-44.74192	0	-44.74192
10	RAJASTHAN	0	0	0
11	UTTAR PRADESH	17682.01002	0	17682.01002
12	UTTARAKHAND	147.72046	0	147.72046
13	APCPL	0	0	0
14	NHPC	0	0	0
15	NTPC	0	0	0
16	NTPC SOLAR	0	0	0
17	SJVN	53.19211	0	53.19211
18	THDC	127.98533	0	127.98533
19	ADHPL	-1.74341	0	-1.74341
20	EPPL	76.33215	0	76.33215
21	GREENKO BUDHIL	105.52343	32.26023	137.78366
22	HBPCL	-14.15746	0	-14.15746
23	HIMACHAL SORANG	1.20094	0	1.20094
24	SCL	0	0	0
25	ER-NR	605.8326	0	605.8326
26	NER-NR	0	0	0
27	WR-NR	0	0	0
28	Pool Balance	-30662.196	-32.26023	-30694.45623

Utilities that have to pay the deviation charges are requested to release the outstanding amount at the earliest.

D.4 Status of Reactive Energy (RE) Charges

As per the information received from NRLDC, the status of payment of Reactive Energy charges payable/Receivable by the utilities as on 13.10.2016 is as given below:

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All Figures in Rupees Lakh

Sl. No	Constituent	NET RE Charges Balance Upto 31st Mar. 2016	RE Charges Payable/ Receivable During 2016-2017 (upto 13.10.2016)	NET RE Charges Balance as on 13.10.2016	Interest on delayed payment of RE charges Upto Qtr 4 of 2015-16	Net Balance
1	CHANDIGARH	-265.16	-20.44	-285.6	-85.18	-370.78
2	DELHI	437.07	79.61	516.68	-97.02	419.66
3	HIMACHAL PRADESH	-512.13	21.65	-490.48	-132.39	-622.87
4	HARYANA	-6841.64	-486.12	-7327.76	-1569.9	-8897.66
5	JAMMU AND KASHMIR	24061.02	1980.66	26041.68	5312.9	31354.58
6	PUNJAB	964.94	455.62	1420.56	-28.93	1391.63
7	RAJASTHAN	-3800.59	-379.86	-4180.45	-902.06	-5082.51
8	UTTARAKHAND	-30.57	57.11	26.54	-9.7	16.84
9	UTTAR PRADESH	-12735.03	-1516.69	-14251.72	-2487.72	-16739.44

As on 13.10.2016, total outstanding of Reactive Energy Charges against PDD J & K is Rs. 313.55 Cr.

All Payable constituents are requested to release outstanding RE charges payments at the earliest.

D.5 Reimbursement of Expenditure of NRPC Sectt. for the year 2016-17 by the members of NRPC

Keeping in view the budget estimates approved by GoI for the financial year 2016-17 and expenditure likely to be incurred towards outsourcing of staff, conduct of various meetings, leasing of vehicle etc through NRPC fund and balance amount available in the NRPC Fund, the per member contribution for the year 2016-17 would be Rs. 7 lakhs.

Members may like to discuss and approve for remitting the above annual contribution.

D.6 Reimbursement of Expenditure of NRPC Sectt. for the year 2015-16 by the members of NRPC

In the 35th NRPC meeting held on 09.07.2015, it was decided to contribute the amount of Rs.11 Lakh per member for the year 2015-16 toward reimbursing NRPC expenditure to GoI for the year 2015-16, for meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson, NRPC. List of members from which contribution is still awaited is given below.

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Sl. No.	Constituent Member
1.	J & K State Power Development Corp. Ltd., J&K
2.	Punjab State Power Corp. Ltd.,
3.	Paschimanchal Vidyut Vitran Nigam Ltd., Meerut, UP
4.	Power Transmission Corp. of Uttarakhand Ltd.
5.	GMR Energy Trading Limited, New Delhi

Since the financial year 2015-16 is already over, Members are requested to expedite the contribution.

D.7 Reimbursement of Expenditure of NRPC Sectt. by the members of NRPC for the previous years

For reimbursing NRPC expenditure to GoI and meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson, NRPC, constituent members are to pay annual contribution as decided at NRPC meetings from time to time.

The contribution is awaited from following members:

S.No.	Constituent Member	Amount
Financial Year 2014-2015		
1	J&K State PDC Ltd ,J&K	Rs. 11 Lakh
2	Dakshinanchal VUNL, Agra	
3	JdVVNL, Jaipur	
4	Bajaj Energy Pvt Ltd.	
Financial Year 2012-2013		
1	Purvanchal Vidyut Vitaran Nigam Ltd.	Rs.10 Lakh

HOSTING OF NEXT MEETINGS OF NRPC / TCC

Taking into account the agreed roster for hosting of meetings, the next meetings of TCC (35th) & NRPC (39th), which would become due in Feb./March 2017 are to be hosted by J&K.

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Annex-I

1. Logic for SPS for Kawai-Kalisindh-Chhabra generation complex

a.) For Chhabra TPS:

Contingency: N-1-1 contingency of 400 kV Chhabra-Kawai and Chhabra-Hindaun or N-1-1 contingency of 400 kV Chhabra-Kawai and Chhabra-Bhilwara.

Action: Restricting generation within 750 MW would be safe. Thus, SPS will trip at least one unit at Chhabra along with fast reduction in generation at Chhabra. Though tripping of two units at Chhabra may also be considered by RRVUNL.

(This logic will be reviewed after commissioning of 400 kV Chhabra-Anta line)

b.) For Chhabra and Kawai TPS Complex:

Contingency: N-1-1 contingency of 400 kV Kawai-Anta 1 & 2.

Action: Restricting generation of this complex within **1500 MW** would be safe. At least one unit at Kawai and one unit at Chhabra will be tripped through SPS.

c.) For Chhabra, Kawai and Kalisindh TPS Complex:

Contingency: N-1-1 contingency of [765 kV Anta-Phagi 1 & 2] or [765/400 kV ICTs at Anta (till only two ICTs in service)].

Action: Restricting generation of this complex within **1500 MW** would be safe. Thus, at least one generating unit each at Kawai, Kalisindh and two units at Chhabra will be tripped through SPS. In addition to the above further backing down of around 10% of the installed capacity of the running generators (about 150-200 MW) in this complex will be required (within few seconds)

In this case, there will be loss of generation of about 1800 MW in the complex and therefore equivalent load shedding should take place in Rajasthan state control area to avoid overloading on WR-NR corridor as well as avoiding overdrawal by Rajasthan. However, considering logistics etc. approx 750 MW automatic load shedding in Rajasthan Control area shall be done automatically and rest of load shedding would be done manually.

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2. Logic for SPS for tripping of either one or both ICT(s) (1000MVA, 765/400kV ICT at Unnao) or tripping of 765kV Anpara-Unnao line for Kawai-Kalisindh-Chhabra generation complex

Sl. No.	Real time flow on 765 kV Anpara-Unnao Line (X) (MW) prior to tripping	Action to be taken through SPS
1	1200 <X ≤ 1350	Backing down of 200 MW each from Anpara-C and Anpara-D to be achieved within 25 seconds.
2	1350 <X ≤ 1500	Tripping of one unit at Anpara-C or Anpara-D shall be carried out through SPS. (The logic shall be build such that in one such event tripping of unit shall take place at Anpara-C and i n next such event at Anpara-D and so on) Further, backing down of 150 MW shall be carried out in each of the running units at Anpara-C and Anpara-D and shall be achieved within 25 seconds.
3	1500 <X≤1600	One unit each shall be t ripped simultaneously at Anpara C and Anpara D. Further, automatic load shedding of 600 MW shall be carried out in U.P. system.
4	X > 1575	SLDC, UP shall be vigilant and if loading on 765 kV Anpara-Unnao Line is more than 1575 MW it shall issue immediate instruction to backing down of all the running units of Anpara-C and Anpara-D so as to bring flow on the line below 1500 MW.

3. SPS for the Tehri complex for the contingency of any of the circuit of 400 kV Koteshwar-Merrut line

When all the four machines (i.e. Tehri HPS (4 × 250 MW) and Koteshwar HPS (4×100 MW)) are running and any one of the 400 kV Koteshwar-Merrut circuit trips, one unit of 250 MW of Tehri HPS should be tripped instantaneously".

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Annex-II

Report of the Group Constituted for suggesting measures for the improvement in protection system among the utilities of Northern Region

1. Introduction:

1.1. Power system protection plays a v ital role to ensure reliable and s ecure operation of the Grid. The objective of a protection system is to keep the power system stable by isolating only the faulty components while maintaining the rest of the components in electrical network intact. Misoperation and non-operation of protection system may have significant consequential effects such as fatal accidents, load loss and generation loss. Each megawatt of lost load has further consequence to public and industry and loss of scarce natural resources.

1.2. Several issues related to power system protection were observed after the twin grid disturbances in July 2012. These issues also featured prominently in the meetings of Protection Sub-Committee from time to time and during the interaction with the consultants appointed by the CTU to review the status of implementation of Enquiry Committee recommendations. In every Protection Sub-Committee meeting, it is observed that protection related multiple tripping in the region are relatively more. Further, many of such tripping could have been avoided by ensuring well-functioning protection system. Therefore, need was felt to explore ways and means to bring about improvement in the field of Power System Protection among the utilities in Northern Region.

2. Constitution of the Group:

In an effort to ensure improvement in the protection system among the utilities of Northern Region, NRPC Secretariat had constituted a group vide letter no. NRPC/OPR/107/06/ 2015/ dated: 26.08.2015 to suggest measures for improvement in protection system among the utilities of Northern Region. (copy enclosed at Encl-I).

3. Recommendations

The Group deliberated upon various factors which may lead to improvement in the performance of the protection system among utilities. It was considered prudent to focus on the recommending a broad outline for developing framework towards sustained improvement in Power System Protection.

The recommendations of the group are under following broad areas:

1. Capacity Building,
2. Resource Deployment,
3. Protection System Maintenance,

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4. Event Reporting & Monitoring and
5. Talent Recognition Mechanism.

3.1 Capacity Building:

3.1.1 Training Modules:

Power System Protection is a highly specialized area of knowledge. The complexity of networks and short response times available to protection engineers make capacity building essential for improvement in protection system.

The training modules need to be adopted to suit the needs of engineers with varied exposure to the protection system. This would also provide a stream of trained protection engineers for a proper succession plan in all utilities. The group recommends following training modules for three different target faculty of engineers.

(i) Basic Training on Protection System for Substation Engineers (Level 1)

This module shall be focussed on providing the basic training on protection system and associated equipment to engineers not directly involved with protection system. This type of training is desirable for engineers from Operations, Switchyard Maintenance etc. This training may be organised departmently for each circle/zone. Training module may be developed by individual utility and trainers may be identified from within the organisation.

(ii) Basic Training on Protection System for Protection System Engineers (Level 2)

This module shall focus on providing the basic training of protection system and associated equipment to engineers directly involved with the protection system commissioning and maintenance. To begin with, the training under this module may be arranged by the NRPC. A grading exam may be conducted at the end of each such module. The module shall cover working knowledge on protection system operation, testing and troubleshooting. Hands-on experince of modern numerical relays and testing kits shall be included in the training. A recommended module for the training is enclosed at **Encl-II.**

(iii) Advanced Training on Protection System for Protection System Engineers (level 3)

This training shall focus on providing the design aspects of protection system, protection co-ordination and settings calculation to engineers directly involved with the protection system commissioning and maintenance. The training may be arranged by the NRPC. A recommended training module is enclosed at **Encl-III.**

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3.1.2 Onsite Experience

In addition to training mentioned above, the group is of the opinion that practical onsite experience is one of the best methods for capcity building. Engineers may be dep uted for short duration on rotational basis to commissioning sites/ retrofittment sites. It shall provide them exposure to the configuration/commissioning level details of the modern protection relays.

3.1.3 Relay Specific Training by OEM

It may be ensured by the utilities that during procurement of relays, relevant clauses may be adde d in the bid document and contract agreement which shall mandate the sucessfull bidder to provide relay specific training to utility engineers.

3.2 Resource Deployment

Adequate resources must be deployed at susbstation level for commissioning, mainteance and troubleshooting of the protection system. The resources may be broadly classified as Human Resource and Material Resources.

3.2.1 Deployment of Protection Engineers:

The Group acknowledges the fact that the utilities are encountering manpower constraints and have to manage in limited resources. Considering the same in view, Circle/Zone level Protection groups may be deployed. The guidelines for minimum manpower to be deployed are listed below

- 400 kV Substations: One EE/AE, One Junior Engineer and Two Technicians for 60 bays.
- 220 kV Substations: One EE/AE, One Junior Engineer and Two Technicians for 60 bays.
- 132 kV Substations: One EE/AE, One Junior Engineer and Two Technicians for 80 bays

3.2.2 Minimum requirement of Tools and plants

In absence of necessary Tools and Plants, the human resource deployed at the substation level shall not be able to function optimally. The list of necessary tools and plants is enclosed in **Encl-IV.** The number of equipment to be provided on the basis of bays/sub-stations may be decided by their respective management for optimum use.

3.3 Protection System Maintenance

Protection systems need periodic monitoring and maintenance to ensure reliable and healthy operation. The Group recommneds that the Monthly and Annual Maintenance plan may be developed and implemented by utilities. The

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Monthly maintenance activities shall consist of routine checks, not involving testing of the relays. Annual Maintenance activities shall consist of detailed testing of the protective relays. Indicative list of activities for Monthly Maintenance (**Encl-V**) and Annual maintenance (**Encl-VI**) are enclosed. It is recommended that protection schemes including relays shall be tested once immediately one year after commission and thereafter preferably with a time gap of two years.

3.4 Event reporting and Monitoring

3.4.1 Analysis of protection system operation is a convenient mechanism to identify and rectify the defects in the system. A mechanism may be developed by the Utility for analysis of tripping. Key personal may be identified at Circle/Zone and resonsibility be assigned to file an initial trip report with DR and EL details to the management, respective SLDC, NRLDC and NRPC Secretariat within prescribed timeframe as per applicable regulations. Detailed report on multiple element tripping shall be submitted to the management/NRLDC/NRPC Secretariat within 15 days.

3.4.2 Feasibility may be envisaged to develop a web based event reporting system at NRPC/NRLDC website. The entities may log in and upload the Report, DR and EL. The date and time of the uploads shall be logged and available in the reporting system. Further, this shall provide a ready database for the events and the defects associated with individual substations.

3.5 Talent Recognition Mechanism

It is acknowledged that the protection engineers have to often work in odd hours and under short response times. The efforts of the protection engineers need to be acnowledged by the management and rewarded as well. The reward may not necessaily be monetory.

Utilities may develop mechanism of annually identifying and rewarding "Protection Circle" and "Protection Engineer" for their significant contribution towards healthy protection system. Similarly, at regional level, NRPC may also institute award for best performing utility and best protection engineer. Such recognitions help to boost the moral of the protection engineers and encourage them to continue excellent work.

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Encl-I

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Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

No. NRPC/OPR/107/06/ 2015/ Dated: 26.08.2015

To,

1. Sh.M.K.Singhal, S.E., RRVPNL
2. Sh. Rajiv Porwal, Asst. GM, NRLDC
3. Sh. B L Gujjar, Manager (Prot.), DTL
4. Sh. M.S. Hada, Deputy Manager, POWERGRID
5. Sh. Bijendra B Singh, Sr. Engineer, NLDC

Sir,

It has been decided to constitute a group to suggest measures for bringing improvement in the field of Power System Protection among the utilities in Northern Region. The Group comprises of the following members:

1. Sh. Ajay Talegaonkar, S.E.(O), NRPC.....Chairperson
2. Sh.M.K.Singhal, S.E., RRVPNL
3. Sh. Rajiv Porwal, Asst. GM, NRLDC
4. Sh. B L Gujjar, Manager (Prot.), DTL
5. Sh. M.S. Hada, Deputy Manager, POWERGRID
6. Sh. Bijendra B Singh, Sr. Engineer, NLDC
7. Shri Naresh Kumar, E.E., NRPC.....Convener

The Group will submit its report by 14th September, 2015.

Yours faithfully,

Sd/-

(P.S. Mhaske)

Member Secretary

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Encl-II

Training Module for Level 2

Day1 Session1

- Interaction with participants
- Expectations from the training
- Initial Assessment test

Day1 Session2

- Basic Substation Layout
- Substation Bus Schemes
- Introduction to CT, VT, LA , Isolator and CB

Day1 Session3

- Per Unit System.
- Fault analysis (Symmetrical faults).
- Importance of earthing system and measurement of earth resistance

Day1 Session4

- Unsymmetrical faults
- Sequence diagram of transformers

Day2 Session1

- Distance Protection

Day2 Session2

- Distance protection schemes(PUTT,POTT etc)

Day2 Session3

- Distance protection relays(Theory)

Day2 Session4

- Distance protection relays(Handson)

Day3 Session1

- Transformer Protection (Diff, REF)

Day3 Session2

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- Transformer Protection(Backup O/C, Mechanical protections)

Day3 Session3

- Transformer protection relays(Theory)

Day3 Session4

- Transformer protection relays (Hands on)

Day4 Session1

- Bus Bar Protection (Diff, REF)

Day4 Session2

- Bus Bar Protection Relays (Theory)

Day4 Session3

- Bus Bar protection relays(Hands on)

Day4 Session4

- Auto Reclosure

Day5 Session1

- Distance protection testing (Hands on with presentation)

Day5 Session2

- Transformer protection testing(Hands on with presentation)

Day5 Session3

- Bus Bar protection testing (Presentation with hands on)

Day5 Session4

- Case Studies and Knowledge Sharing
- Doubt clearing and closure session

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Encl-III

Training Module for Level 3

Day1 Session1

- Interaction with participants
- Expectations from the training
- Initial Assessment test

Day1 Session2

- Per Unit System.
- Fault analysis (Symmetrical faults).
- Sample calculations by Participants for a typical network

Day1 Session3

- Unsymmetrical faults
- Sequence diagram of transformers
- Sample calculations by Participants for a typical network

Day1 Session4

- Calculations by participants for symmetrical and asymmetrical fault for a Particular 400/220kV Substation of Northern Region

Day2 Session1

- Distance Protection
- Distance protection schemes(PUTT,POTT etc)
- Auto Reclose Scheme

Day2 Session 2

- Distance protection relay setting Calculations example
- Distance protection relay setting Calculations by Participants for a typical line cases

Day2 Session 3

- Procedure for Distance protection relay setting and configuration of various Numerical Distance Relays installed in Northern Region e.g. ALSTOM/ABB/SIEMENS /GE/ERL etc

Day2 Session 4

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- Hands on for Distance protection relay setting and configuration various makes of Numerical Distance Relays installed in Northern Region e.g. ALSTOM/ABB/SIEMENS /GE/ERL etc.

Day3 Session 1

- Transformer protection Theory, Differential, REF, Mechanical Protection relays
- Sample calculations for Transformer Differential and REF Protection

Day3 Session 2

- Procedure for relay setting and configuration of various Numerical Transformer Differential Relays installed in Northern Region e.g. ALSTOM/ABB/SIEMENS /GE/ERL etc
- Hands on for relay setting and configuration of Major Numerical Transformer Differential Relays installed in Northern Region e.g. ALSTOM/ABB/SIEMENS /GE/ERL etc

Day3 Session 3

- High Impedance and Low Impedance type of Busbar Protection schemes
- Centralized and Distributed type of Numerical Busbar Protection Schemes
- Typical CT and Trip Circuit schemes for different types of Busbar Protection
- LBB scheme

Day3 Session 4

- PMU
- System Protection Schemes(SPS)
- Typical SPS for Parallel ICT's and for Typical HVDC and 765kV Lines case

Day 4 Session 1

- Feeder Backup Relay Setting Calculations
- Transformer Backup Protection relay setting calculations

Day 4 Session 2

- Calculations for Backup relay setting by Participants using Fault Level Data_ A Case study for typical network

Day 4 Session 3

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- Substation Automation and IEC 61850. Emerging trends including Process Bus level Automation, Merging Units and Non Conventional Instrument Transformers

Day 4 Session 4

- Protection schematic Design Philosophy for typical 400kV Feeder
- Protection schematic Design Philosophy for typical 400kV Transformer.

Day 5 Session 1

- Hands on for Distance Relay Testing

Day 5 Session 2

- Hands on for Transformer Differential Relay Testing
- Pre Commissioning Tests for Transformer , Feeders and Busbars

Day 5 Session 3

- RECAP OF FAULT LEVEL CALCULATION, Backup and Distance Relay settings_ CASE STUDY AND TUTORIAL FOR PARTICIPANTS

Day 5 Session 4

- Discussions, sharing of knowledge and case studies
- Assessment and conclusion

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Encl-IV

Diagnostic Tools for Protection & Switch Yard Maintenance	
1.01	Transformer Winding resistance meter & turns ratio meter
1.02	Insulation Resistance (IR) tester (1KV, 5KV, 10KV)
1.03	Automatic Capacitance & Tandelta Measuring Instrument
1.04	Break Down Voltage (BDV) Test Kit for oil (60KV)
1.05	Dissolved Gas Analyser (portable)
1.06	Frequency Response Analyser (FRA) test set
1.07	Circuit Breaker operational Analyser & Dynamic coantact Resistance Meter (DCRM) test kit
1.08	SF6 Gas Leakage Detector
1.09	Dew point measruing instrument
1.10	SF6 Gas Handling Plant (for evacuation, filling,filtering of SF6 gas)
1.11	Static Contact Resistance Measuirng instrument
1.12	Leakage Current Meter (LCM) for Surge Arrester
1.13	Earth tester for measurment of soil resistivity & ground resistance
1.14	Automatic Relay test kit suitable for testing electro mechanical /static /numerical relays
1.15	Thermovision carmera for detection of hot spots
1.16	Transmision line Response Analyser/Offline Fault Locator
1.17	CT Analyzer
1.18	Primary CT Injection Kit
1.19	Multimeter Tong Tester/Clamp Meter
1.20	Analog/Digital Multimeter
1.21	Actual Line Impedence Measurement
1.22	DC E/F Dector

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Encl – V

			Comments
1	Daily Maintenance	1. Check of relay healthy indication of all C&R panels 2. Check the panels/SCADA for persisting alarms 3. Check the DR and E vent Logger PC for proper functioning 4. Check PLCC panels for any alarm 5. Check the time sync of relays on sample basis. 6. Test the operation of DG set (no load)	
2	Monthly Maintenance	(i) Check for electrolyte level in station battery bank (excluding VRLA) (ii) Measurement of voltage of each cell of battery bank-Also verify the Station DC supply voltages (at the longest end of the cable) (iii) Ensure that no DC earth fault is present in the DC system. (iv) Check of current voltage of all phases and DC voltage in all the relays. (v) SF6 gas leakage detection test is carried on SOS basis. However SF6 gas alarm in CB/CT/bushings is monitored on daily basis.	

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Encl – VI

1	Annual Maintenance	(i) Measurement of capacitance & tan delta of CTs, CB grading capacitor, transformer bushings. (ii) Oil parameters & DGA test of transformer oil of power transformers. DGA of oil in transformers/ Reactors is normally carried out on 6 monthly basis. However based upon condition of transformer oil, frequency of oil DGA may vary from weekly monitoring to 6 monthly monitoring) (iii) Breaker operation timings- Frequency of breaker operation timing is yearly. However, DCRM test may be done on CBs on 2 yearly basis. (iv) Leakage current check of surge arrestor. (v) Measurement of earth resistance.	THRC testing of surge arrestors is carried out twice a year i.e. Pre monsoon and pos t monsoon. Note: Oil parameter testing (e.g. BDV, moisture, etc) for transformer & Reactors on yearly basis.
2	Five Yearly Maintenance	(i) Operational/functional testing of relays including breaker operation: These tests shall be carried out during the shut down of the line equipments . Testing of busbar protection on SOS basis. (ii) Analysis of all breaker operation.	

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Encl-A

List of Participants for the meeting of the group to suggest measures for bringing improvement in the field of Power System Protection among the utilities in NR held on 21.04.2016 at NRPC Secretariat, New Delhi

Name	Designation	Organization	Phone/Mobile	e-mail ID
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Annex-III

1. Transmission Lines which are recommended to be certified as ISTS

S.No	Name of the Transmission Line	Owner STU	Average % Utilization (of 2nd and 4th Qtr of 2015-16) by states other than the home state of owner STU
1	400 kV S/C Jodhpur – Merta Line-I	RVPN	59.8
2	400 kV S/C Jodhpur – Merta Line-II	RVPN	59.8
3	400kV S/C Merta-Ratangarh Line	RVPN	50.85
4	400kV S/C Merta-Heerapura Line	RVPN	62.95
5	220kV D/C Aau – Baithwasia Line	RVPN	95.55
6	220kV D/C Baithwasia - BhawadLine	RVPN	95.35
7	220kV D/C Gajner – Bikaner(400kV GSS)Line	RVPN	55.85
8	220 KV Nahtaur-Matore(PG)	UPPTCL	51.8
9	400 KV SULTANPUR- PGCIL(KURSI RD.)	UPPTCL	57.5

2. Transmission Lines which do not fulfil the criteria (as finalized by the Group) to be certified as ISTS

S.No	Name of the Transmission Line	Owner STU	Average % Utilization (of 2nd and 4th Qtr of 2015-16) by states other than the home state of owner STU
1	220kV S/C RAPP(A)-Debari Line	RVPN	17.65
2	220kV S/C Bhiwadi(PG)-Bhiwadi(RVPN)Line	RVPN	6.1
3	220kV S/C Bap-Phalodi Line	RVPN	37.8
4	220kV S/C Bap-Barsingsar Line	RVPN	27.4
5	220kV D/C Jodhpur(400kV GSS)Line	RVPN	4.7
6	220kV D/C Bhawad - Bhopalgarh Line	RVPN	28.7
7	220kV S/C Dechu - Tinwari Line	RVPN	12.05
8	220kV S/C Dechu - Phalodi Line	RVPN	40.8
9	220kV S/C Phalodi - Tinwari Line	RVPN	15.7
10	220kV S/C Tinwari – Jodhpur (400kV GSS)Line (Circuit-I)	RVPN	15.45
11	220kV S/C Tinwari – Jodhpur (400kV GSS)Line (Circuit-II)	RVPN	15.45
12	220kV S/C Bhadla – Bap Line	RVPN	31.2
13	220kV S/C Barsingsar – Bikaner line	RVPN	22.65
14	220kV S/C Barsingsar -Nagaur line	RVPN	4.9
15	220kV S/C Bhopalgarh- Merta line	RVPN	10.6
16	220kV S/C Bhopalgarh-Khinwsar line	RVPN	27.75

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17	220kV S/C Nagaur-Nokha line	RVPN	27.2
18	220kV S/C Jodhpur(220kV GSS)-Pali line	RVPN	2.05
19	220kV S/C Jodhpur(400kV GSS)-Bilara line	RVPN	10.2
20	132kV S/C Gajner-Pugal Road line	RVPN	5.6
21	132kV S/C Pugal Road- Bikaner line	RVPN	3.25
22	132kV S/C Gajner – Bhinasar line	RVPN	5.7
23	132kV S/C Bhinasar- Bikaner line	RVPN	3.3
24	132kV S/C Pokran – Dechu line	RVPN	14.65
25	132kV S/C PS(2)-PS(1) line	RVPN	10.4
26	132kV S/C PS(1) Bajju line	RVPN	11.1
27	132kV S/C Bajju- Kolayat line	RVPN	12.2
28	132kV S/C PS(5) – Phalodi line	RVPN	6.75
29	132kV S/C Sanwreej – Dechu line	RVPN	0.1
30	132kV S/C Osian – Tinwari line	RVPN	0.1
31	132kV S/C Bap - Phalodi line	RVPN	14.55
32	132kV S/C Kolayat – Gajner line	RVPN	8.4
33	132kV S/C Jayal – Nagaur line	RVPN	0.1
34	400kV D/C Bhadla – Bikaner line	RVPN	31.2
35	220 kV Anta-Dahra	RVPN	14.2
36	400 KV MAINPURI PG-PARICHHA-1	UPPTCL	29.45
37	400 KV MAINPURI PG-PARICHHA-2	UPPTCL	29.45
38	220 KV KANPUR SOUTH-FATEHPUR(PGCIL)	UPPTCL	37.5
39	220 KV FATEHPUR-FATEHPUR(PG)-II	UPPTCL	15.15
40	220 KV NAUBASTA-FATEHPUR(PGCIL)	UPPTCL	33.1
41	220 KV FATEHPUR-FATEHPUR(PG)-I	UPPTCL	15.15
42	220 KV NAUBASTA-PGCIL(KNP)	UPPTCL	1.6
43	220 KV MAINPURI-PGCIL(KNP)BHAUTI	UPPTCL	30.5
44	220 KV MANPURI-PGCIL(MNP)BHOGAON-I	UPPTCL	5.25
45	220 KV MANPURI-PGCIL(MNP)BHOGAON-II	UPPTCL	5.25
46	220 KV HDJ-PGCIL(MNP)BHOGAON	UPPTCL	36.55
47	220 KV FIROZABAD-PGCIL(MNP)BHOGAON	UPPTCL	29.6
48	220 KV ORAI-PGCIL(KNP)BHAUTI	UPPTCL	35.5
49	220 KV BASTI-PGCIL(GKP)	UPPTCL	30.95
50	220 KV GORAKHPUR-PGCIL(GKP)	UPPTCL	5.8
51	220 KV Modipuram-Matore(PG)-I	UPPTCL	4.85
52	220 KV Modipuram-Matore(PG)-II	UPPTCL	4.85
53	220 KV Muzaffarnagar(Nara)-Matore(PG)	UPPTCL	23.95
54	220 KV Satabdinagar-Matore(PG)	UPPTCL	2.75
55	220 KV Gajraula-Matore(PG)	UPPTCL	16.8
56	220 KV CHINHAT-LUCKNOW PG	UPPTCL	17.8
57	220 KV SAROJINI NAGAR-RAEBARELI(PG)	UPPTCL	6.35
58	765 kV Anpara C-Unnao	UPPTCL	46.3
59	132 kV Hamirpur-Chohal	PSTCL	4.8

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60	132 kV Kotla-Ropar-1	PSTCL	14.9
61	220 kV Ganguwal-Mohali	PSTCL	4.45

3. Transmission Lines which were not modelled by STU for PoC charge calculation and hence could not be considered for study

S.No	*Name of the Transmission Line*	*Owner STU*
1	220kV S/C Bhiwadi(PG)-Neemrana Line	RVPN
2	220kV S/C Bap-Badisid Line	RVPN
3	220kV D/C Bap-Aau Line(Under construction)	RVPN
4	220kV S/C Bhadla- Badisid Line	RVPN
5	220kV S/C Nagaur – Merta Line	RVPN
6	132kV S/C PS(3) – PS(4) line	RVPN
7	132kV S/C PS(4) – PS(5) line	RVPN
8	132kV D/C Osian – Baithwasia line(under construction)	RVPN
9	132kV S/C Khetusar – Bhadla line	RVPN
10	132kV S/C Gajner – Gajner(220kV GSS)line	RVPN
11	220 KV BKT-LUCKNOW PG	UPPTCL

4. Transmission Lines which are natural interstate lines and hence need not be certified as ISTS

S.No	*Name of the Transmission Line*	*Owner STU*
1	220kV S/C Chirawa – Hissar Line	RVPN
2	132KV S/C Sadalpur(Rajgarh)-Hissar line	RVPN
3	132KV S/C Khandar-Sheopur line	RVPN
4	132KV S/C Amrapura-Sirsa Line	RVPN
5	220 KV Muzaffarnagr(Nara)-Roorkee	UPPTCL
6	132 KV SAHUPURI-KARMNASHA	UPPTCL
7	132 KV CHANDAULI- KARMNASHA	UPPTCL
8	132 KV Kiratpur-Manglore	UPPTCL
9	132 KV Chandak-Luksar	UPPTCL
10	132 KV Afzalgarh-Kalagarh	UPPTCL
11	132 KV Dhampur-Kalagarh	UPPTCL
12	132 KV LALITPUR-RAJGHAT	UPPTCL
13	132 KV ANPARA-MORWA	UPPTCL
14	132 KV BINA-MORWA	UPPTCL
15	220 kV Sarna-Udhampur	PSTCL
16	132 kV HPSEB TAP (Kangra-Kangra PS)	PSTCL

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Annex-IV

Revised Power Supply Position of Northern Region July-September, 2016

July, 2016

State	Peak Demand	Peak Met	Surplus/Deficit (-)		Energy Requirement	Energy Availability	Surplus/Deficit (-)	
	MW	MW	MW	%	MU/day	MU/day	MU/day	%
CHANDIGARH	358	358	0	0.0	185	185	0	0.0
DELHI	6,342	6,261	-81	-1.3	3,311	3,308	-3	-0.1
HARYANA	9,262	9,262	0	0.0	5,303	5,303	0	0.0
H.P.	1,297	1,297	0	0.0	744	738	-7	-0.9
J&K	2,385	1,950	-435	-18.2	1,220	1,001	-219	-17.9
PUNJAB	11,408	11,408	0	0.0	6,598	6,598	0	0.0
RAJASTHAN	9,288	9,168	-120	-1.3	5,284	5,276	-8	-0.1
U.P.	16,123	15,154	-969	-6.0	9,268	9,241	-27	-0.3
UTTARAKHAND	1,972	1,907	-65	-3.3	1,149	1,138	-11	-0.9
REGION	52,151	51,658	-493	-0.9	33,061	32,788	-274	-0.8

August, 2016

State	Peak Demand	Peak Met	Surplus/Deficit (-)		Energy Requirement	Energy Availability	Surplus/Deficit (-)	
	MW	MW	MW	%	MU/day	MU/day	MU/day	%
CHANDIGARH	350	350	0	0.0	172	172	0	0.0
DELHI	5,707	5,707	0	0.0	3,211	3,208	-3	-0.1
HARYANA	8,984	8,984	0	0.0	5,003	5,003	0	0.0
H.P.	1,293	1,293	0	0.0	742	736	-6	-0.8
J&K	2,367	2,008	-359	-15.2	1,321	1,057	-263	-19.9
PUNJAB	11,204	11,204	0	0.0	6,389	6,389	0	0.0
RAJASTHAN	7,807	7,807	0	0.0	4,735	4,713	-22	-0.5
U.P.	15,614	14,690	-924	-5.9	9,351	9,224	-127	-1.4
UTTARAKHAND	1,963	1,888	-75	-3.8	1,153	1,146	-7	-0.6
REGION	51,426	50,081	-1,345	-2.6	32,077	31,648	-429	-1.3

Sept., 2016

State	Peak Demand	Peak Met	Surplus/Deficit (-)		Energy Requirement	Energy Availability	Surplus/Deficit (-)	
	MW	MW	MW	%	MU/day	MU/day	MU/day	%
CHANDIGARH	281	281	0	0.0	164	164	0	0.0

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DELHI	5,305	5,301	-4	-0.1	3,212	3,209	-4	-0.1
HARYANA	9,109	9,109	0	0.0	5,062	5,062	0	0.0
H.P.	1,329	1,329	0	0.0	751	749	-3	-0.3
J&K	2,469	1,975	-494	-20.0	1,353	1,083	-269	-19.9
PUNJAB	10,596	10,596	0	0.0	6,125	6,125	0	0.0
RAJASTHAN	9,816	9,816	0	0.0	5,798	5,701	-97	-1.7
U.P.	16,329	15,457	-872	-5.3	9,684	9,404	-280	-2.9
UTTARAKHAND	1,942	1,942	0	0.0	1,150	1,149	-1	-0.1
REGION	52,772	51,816	-956	-1.8	33,300	32,646	-654	-2.0

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Annex-V

Anticipated Power Supply position for October-December, 2016

October, 2016								
State	Anticipated Peak Demand	Expected availability	Surplus/Deficit (-)		Anticipated Energy Requirement	Anticipated Energy Availability	Surplus/Deficit (-)	
	MW	MW	MW	%	MU/day	MU/day	MU/day	%
CHANDIGARH	245	249	4	1.6	130	133	3	2.0
DELHI	4,600	5,717	1,117	24.3	2,600	2,919	319	12.3
HARYANA	8,100	7,915	-185	-2.3	4,450	4,483	33	0.7
H.P.	1,400	1,638	238	17.0	750	821	71	9.5
J&K	2,450	2,036	-414	-16.9	1,400	1,197	-203	-14.5
PUNJAB	8,500	9,715	1,215	14.3	4,050	3,848	-202	-5.0
RAJASTHAN	10,000	10,922	922	9.2	6,600	6,044	-556	-8.4
U.P.	15,500	13,736	-1,764	-11.4	9,650	8,351	-1,299	-13.5
UTTARAKHAND	1,900	1,894	-6	-0.3	1,075	1,058	-16	-1.5
REGION	48300	49200	900	1.9	30704	28855	-1849	-6.0

November, 2016								
State	Anticipated Peak Demand	Expected availability	Surplus/Deficit (-)		Anticipated Energy Requirement	Anticipated Energy Availability	Surplus/Deficit (-)	
	MW	MW	MW	%	MU/day	MU/day	MU/day	%
CHANDIGARH	195	206	11	5.6	105	108	3	2.9
DELHI	3,600	5,922	2,322	64.5	1,860	2,880	1,020	54.8
HARYANA	6,800	7,174	374	5.5	3,250	3,442	192	5.9
H.P.	1,425	1,544	119	8.4	730	742	12	1.6
J&K	2,500	2,168	-332	-13.3	1,450	1,230	-220	-15.1
PUNJAB	5,700	7,287	1,587	27.8	2,900	2,901	1	0.0
RAJASTHAN	10,300	11,536	1,236	12.0	6,200	5,906	-294	-4.7
U.P.	14,500	13,864	-636	-4.4	8,050	7,809	-241	-3.0
UTTARAKHAND	1,850	1,834	-16	-0.9	990	965	-25	-2.5
REGION	42600	46600	4000	9.4	25535	25983	448	1.8

December,2016								
State	Anticipated Peak Demand	Expected availability	Surplus/Deficit (-)		Anticipated Energy Requirement	Anticipated Energy Availability	Surplus/Deficit (-)	
	MW	MW	MW	%	MU/day	MU/day	MU/day	%
CHANDIGARH	235	237	2	0.9	115	117	2	1.6
DELHI	4,150	5,735	1,585	38.2	1,950	2,908	958	49.1
HARYANA	6,800	6,983	183	2.7	3,600	3,663	63	1.7
H.P.	1,525	1,645	120	7.9	800	816	16	2.0
J&K	2,600	2,146	-454	-17.5	1,590	1,329	-261	-16.4
PUNJAB	6,250	7,158	908	14.5	3,380	2,872	-508	-15.0
RAJASTHAN	10,700	11,423	723	6.8	6,600	6,531	-69	-1.0
U.P.	13,700	13,831	131	1.0	8,300	8,317	17	0.2
UTTARAKHAND	2,050	2,033	-17	-0.8	1,140	1,101	-39	-3.5
REGION	44900	47600	2700	6.0	27475	27653	178	0.6

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Annex -VI

Summarized Status of pending rectification of Defects observed during BPA

S.No.	Utility	No. of sub-stations covered under BPA	Expected Completion	Remarks
1.	UPPTCL	21	November, 2016	UPPTCL informed that work at few stations is pending and expected completion in phased manner by November, 2016.
2.	UPRVUNL	4	31st October, 2016	Obra'A' – June, 2016 (including rectification of Time synchronization & BBP, PLCC (to be i nstalled by UPPTCL). To be completed by 31st October, 2016. Harduaganj– BBP & PLCC work is expected to be completed by 31.10.2016
3.	RRVPNL	8	Sep, 2016	Rectification of seven sub-stns completed. 400 kV Ratangarh S/s is expected to be completed by 30th September, 2016.
4.	HPSEB Ltd.	1	March, 2017	Out of 12 de ficiencies observed, 8 items stand already rectified. The rectification of defects of remaining 4 No. items will be c ompleted by March, 2017.Taken in PSDF scheme.
5.	UJVNL	1	30-06-2016	Breaker for 220 kV Khodri-I & II needs to be r eplaced. Expected date as intimated by SLDC uttrakhand in 127th OCC meeting is 31.12.2016
6.	PDD, J&K	3	Status of progress is not submitted. Target completion not known.	As informed during 33rd NRPC meeting that deficiencies where procurement was not involved had been rectified and ot her works where procurement is involved are yet to be taken up. PDD J&K informed that they have submitted the proposal for PSDF funding and deficiencies will be r ectified when fund will be di sbursed from PSDF. As informed by PSTCL defects at 220 kV Sarna-Udhampur line,

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				pertains to PDD, J&K.
7.	NTPC	10	November, 2016	**Unchahar: 30.11.2016**

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Annex-VII

Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to Part Load Operation and Multiple Start/Stop of Units

1. Introduction

Central Electricity Regulatory Commission notified on 6th April 2016 Central Electricity Regulatory Commission (IEGC) (Fourth Amendment) Regulations, 2016, which inter-alia contains provisions relating to Technical Minimum Schedule for operation of Central Generating Stations and Inter-State Generating Stations, whose tariff is determined or adopted by the Central Commission. These Regulations further provide for compensation to Generating Stations for degradation of Heat Rate, Auxiliary Consumption and Secondary Fuel Oil consumption due to part load operation and multiple start-ups of units. Sub-regulation 7 of Regulation 6.3 B of IEGC mandates RPCs to work out a mechanism for compensation for station heat rate and auxiliary energy consumption for low unit loading and for secondary fuel oil consumption for additional start-ups in excess of 7 start-ups. This mechanism has been framed by NRPC to fulfil aforesaid requirement.

2. Applicability

This mechanism is applicable to Coal based Central Generating Stations and Coal based Inter-State Generating Stations located in Northern Region, whose tariff is determined or adopted by the Central Commission.

3. Definitions and abbreviations

(i) "Comp (F)" means amount of final compensation to be received by a generator during the calculation period.

(ii) "Comp (P)" means amount for preliminary estimate of compensation to generator during the calculation period.

(iii) "EC (A)" means total energy charges for a generator during the calculation period on actual parameters.

(iv) "EC (N)" means total energy charges for a generator during the the calculation period on normative parameters.

(v) "ECR (Comp)" means Energy Charge Rate in Rs/kWh for preliminary estimate of compensation to generator for the calculation period.

(vi) "ECR (DC)" means Energy Charge Rate in Rs/kWh corresponding to average Declared Capacity (DC) during the calculation period.

(vii) "ECR (SE)" means Energy Charge Rate in Rs/kWh corresponding to average loading of generating station during the calculation period.

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(viii)"Calculation Period" means period for which compensation calculation is being carried out. Generally, there shall be twelve calculations during a financial year. The first calculation shall be done for one month (i.e. month of April) at the beginning of the financial year. The second calculation shall be do ne by considering cumulative of two months (i.e. months of April and May) and so on.

(ix) "Regulation" means Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016.

(x) "RRAS Regulation" means Central Electricity Regulatory Commission (Ancillary Services Operations) Regulations, 2015

(xi) "Tariff Regulation" means Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014

Other terms and abbreviations used in this mechanism shall have the meaning as described in Electricity Act, 2003, Regulation and Tariff Regulation.

4. Mechanism for working out compensation

4.1 Compensation for degradation of Heat Rate and AEC

(i) The mechanism is based on provisions of Regulations and Tariff Regulations.

(ii) Energy scheduled under RRAS Regulation shall be taken as +ve for up-regulation and –ve for down regulation.

(iii) The initial estimate of Percentage station-wise loading for the calculation period will be determined using Normative Auxiliary Energy Consumption as under:

$$\%\ \text{Loading} = \frac{Average Schedule\ of\ the\ Station\ during\ calculation\ period}{Installed\ Capacity\ of\ the\ Station\ on\ Bar \times (1 - Auxiliary\ Consumption)} \times 100$$

(iv) Based on the percentage loading thus arrived, admissible percentage degradation in Auxiliary Energy Consumption (AEC) will be taken from the Regulation. After adding the percentage degradation in AEC to Normative Auxiliary Energy Consumption, percentage loading shall again be calculated.

(v) Steps (iii) and (iv) shall be repeated until % loading remains in same band of Unit Loading provided in the regulation. The percentage loading arrived at this step shall be considered for further process. However, if the percentage loading so calculated does not converge to a single band of loading and switches between two different bands repeatedly, then average of these two percentage loading figures shall be taken for further processing.

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(vi) This percentage loading shall be used for getting increase in SHR and Aux. consumption in accordance with the Regulations.

(vii) Based on the values of increased SHR and AEC arrived at step (vi), Energy Charge Rate (ECR) for scheduled energy i.e. ECR (SE) for the station shall be calculated using the formula specified in Tariff Regulations.

(viii) Similarly, ECR corresponding to average Declared Capacity (DC) i.e. ECR (DC) for the calculation period shall also be calculated and used as reference for calculating compensation. This is because, the effect of less declaration (with respect to Installed capacity), if any, on the SHR and AEC should be to the account of ISGS.

(ix) The primary estimate of ECR to be used for calculation of compensation to be paid to ISGS for the calculation period ending n^{th} month shall be difference in the ECR (SE) and ECR (DC) for that pewriod. ECR (Comp) for the calculation period ending n^{th} month shall be calculated as:

$$ECR_n(Comp) = ECR_n(SE) - ECR_n\ (DC)$$

(x) The primary estimate of compensation payable to ISGS for the calculation period ending n^{th} month shall be calculated as below:

*$Comp_n$ (P) = (Total Generation Schedule (Energy) during the calculation period excluding net RRAS energy scheduled during the period) * ECR^n (Comp)*

(xi) The sharing of the Compensation amount for the calculation period among various beneficiaries shall be done as under:

(a) No compensation shall be payable by a beneficiaries if it has requisitioned at least 85% of its entitlement during the calculation period.

(b) The compensation amongst other beneficiaries shall be shared in the ratio of un-requisitioned energy below 85% of their entitlement i.e. compensation payable by k^{th} beneficiary including virtual entity for the calculation period ending n^{th} month

$$CB_{kn} = Comp_n(P) \times \frac{UE_{kn}}{\sum UE_{kn}}$$

Where UE_{kn} is un-requisitioned energy of k^{th} beneficiary below 85% of its entitlement during the calculation period ending n^{th} month.

Provided that the entitlement for virtual entity shall be taken as zero.

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(xii) ECR_n (A) for the calculation period shall be calculated using actual values of SHR and Aux Consumption furnished by ISGS at the end of the calculation period. Similarly, ECR_n(N) shall be calculated using Normative values of SHR and Aux Consumption furnished by ISGS.

(xiii) Now, following values shall be calculated:

(a) Total Energy Charges payable to ISGS based on actual parameters

EC_n (A) = ECR_n (A) x (Total Scheduled Energy excluding net RRAS energy scheduled during the calculation period ending n^{th} month)

(b) Total Energy Charges payable to ISGS based on Normative parameters

EC_n (N) = ECR_n (N) x (Total Scheduled Energy excluding net RRAS energy scheduled during the calculation period ending n^{th} month)

(xiv) Compensation payable for the calculation period ending n^{th} month to ISGS would be decided based on following criteria:

(a) <u>If EC_n (A) is less than or equal to EC_n (N):</u>

No compensation shall be payable to ISGS

(b) <u>If EC_n (A) is more than EC_n (N)</u>:

(b1) If $Comp_n$ (P) is less than or equal to EC_n (A) minus EC_n (N) then final compensation amount payable to ISGS for the calculation period ending n^{th} month:

$Comp_n$ (F) = $Comp_n$ (P)

(b2) If $Comp_n$ (P) is more than EC_n (A) minus EC_n (N), then final compensation amount payable to ISGS for the calculation period ending n^{th} month

$Comp_n$ (F) = ECR_n (A) - ECR_n (N)

(xv) Final Compensation payable by k^{th} beneficiary for the calculation period ending n^{th} month

$$FCB_{kn} = \sum CB_{kn} \times \frac{Comp_n\ (P)}{Comp_n(F)}$$

(xvi) However, adjustments shall be carried out for compensation already paid for calculation period ending $(n-1)^{th}$ month

Net compensation payable by kth beneficiary for the calculation period ending n^{th} month

NCB_{kn} = FCB_{kn} – $FCB_{k(n-1)}$

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If NCB_{kn} is negative, this is amount payable by ISGS to the beneficiary and vice versa. This way reconciliation would automatically take place at the end of the Financial Year. No payment shall be made to virtual entity or by the virtual entity.

4.2 Calculation for Fuel consumption:

(i) No compensation for degradation of Secondary Fuel oil consumption is payable for the year if

a) Total number of start-ups are equal to or less than 7

Or

The Actual Secondary Fuel Oil consumption is less than Normative Fuel Oil Consumption.

b) Preliminary estimate of Compensation (in terms of KL of Sec. Oil) payable to ISGS for the year due to degradation of Secondary Fuel oil consumption shall be calculated by multiplying no. of start-ups exceeding 7 and solely attributable to reserve shut-downs with the appropriate value of additional secondary oil consumption specified in Regulation.

c) Compensation payable to ISGS shall be restricted such that Oil Consumption based on Norms plus Compensation calculated in step (b) above does not exceed actual Secondary Fuel oil consumption for the year.

d) Compensation in terms of Rupees shall be calculated by multiplying compensation in terms of KL as calculated in step (b) and average landed price of Secondary fuel oil for the year.

e) Each start-up due to reserve shutdown shall be at tributed to the beneficiaries, which had requisitioned below 55% of their entitlement.

f) Compensation (in terms of Rupees) shall be s hared amongst the beneficiaries in the following manner:

$$Compensation\ payable\ by\ beneficiary = \left(N_i \times \frac{A_i}{\sum(N_i \times A_i)}\right) \times \text{Compensation payable to ISGS}$$

Where

N_i= Number of start-ups attributable to the beneficiary

A_i= Weightage Average Percentage share of the beneficiary in the generating station

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(ii) Following information shall be required to be submitted by ISGS for carrying out calculations outlined above

a) Installed Capacity on bar for each time block

b) Normative values of Normative Aux. Consumption, GHR, SFC and LC to be furnished once

c) Actual value of CVSF, CVPF, LPPF, LPSF and LPL for each month and also at the end of the year.

5. Submission of Data

(i) Generating station shall submit to NRPC secretariat normative SHR and Normative Auxiliary Energy Consumption in accordance with current Tariff Regulations. Further, revised values of these parameters shall be submitted within seven days of issuance of new Tariff Regulations or amendment thereof.

(ii) Generating stations shall submit actual data for a month by 21st day of the following month. The data to be submitted is- IC on bar for each time block, CVSF, CVPF, LPPF, LPSF and LPL.

6. Issuance of compensation statement

(i) NRPC secretariat will issue the compensation statement along with final REA for the month.

(ii) In case any anomaly or discrepancy is noticed by any utility, the same may be brought to the notice of Member Secretary NRPC within 15 days of issuance of Compensation Statement.

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Annexure 3

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फैक्स Fax : 26865206
ई मेल e- mail: ms-nrpc@nic.in
वेबसाईट Website : www.nrpc.gov.in

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

सं. उक्षेविस/ वाणिज्यिक/ 209/ आर पी सी (38 वीं)/2017/461-505 दिनाँक : 10 जनवरी, 2017
No. NRPC/ Comml/ 209/ RPC (38th)/2017/ Dated: 10th January, 2017

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य
Members of NRPC/TCC

विषय: उत्तरी क्षेत्रीय विद्युत समिति की 38 वीं तथा तकनीकी समंवय उप-समिति की 34 वीं बैठक का कार्यवृत्त।

Subject: 38th meeting of Northern Regional Power Committee and 34th meeting of TCC – Minutes.

महोदय / Sir,

उत्तरी क्षेत्रीय विद्युत समिति की 38 वीं बैठक दिनांक 25 अक्तूबर, 2016 को तथा तकनीकी समंवय उप-समिति की 34 वीं बैठक दिनांक 24 अक्तूबर, 2016 को टीएचडीसी इंडिया लिमिटेड, बाईपास रोड, ऋषिकेश में आयोजित की गयी थी। इन बैठकों के कार्यवृत की एक प्रति आपकी सूचना व आवश्यक कार्यवाही हेतु इस पत्र के साथ संलग्न है।

The 38th meeting of Northern Regional Power Committee was held on 25th October, 2016 and 34th meeting of TCC was held on 24th October, 2016 at THDC India Limited, Bypass Road, Rishikesh. A copy of the minutes of the meetings is enclosed herewith for favour of information and necessary action.

भवदीय/Yours faithfully,

10/1/2017
(पी.एस. मस्के)
(P.S. Mhaske)
सदस्य सचिव
Member Secretary

(मनोज सिंह)
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List of NRPC Members

1. Sh. Vineet Garg, IAS, Chairperson, NRPC and Managing Director, HVPN Ltd, Panchkula - 134109
2. Sh. P.C. Negi, Managing Director, HPSEB Ltd, Shimla-171004
3. Chairman, BBMB, Chandigarh-160019
4. Member (GO&D), CEA, New Delhi
5. Chief Engineer, UT of Chandigarh, Chandigarh-160066
6. Managing Director, DTL, New Delhi-110002
7. Sh. V. Venugopal, GM , SLDC, DTL, New Delhi-110002
8. Managing Director, IPGCL, New Delhi-110002
9. Sh Rajesh Kumar Gupta, Chief Engineer (SO&C), SLDC, HVPNL, Panipat
10. Managing Director, HPGCL, Panchkula-134109
11. Sh. Naresh Sardana, Director (Operation), UHBVN, Panchkula -134109
12. Director (Plg. & Contracts), HPPTC Ltd, Shimla-171004
13. Superintending Engineer, SLDC, HP Load Despatch Society, Totu, Shimla
14. Principal Secretary to Govt. of J&K, PDD, J&K, Jammu
15. Managing Director, J&K State Power Dev. Corp., Srinagar, J&K
16. CMD, PSTCL, Patiala-147001
17. Sh. K.D. Chowdhary, CMD, PSPCL, Patiala-147001
18. Sh Sanjay Malhotra, IAS, CMD, RRVPNL, Jaipur-302005
19. Chief Engineer (LD), SLDC, Heerapur, Jaipur-302024
20. CMD, RRVUNL, Jaipur-302005
21. CMD, Ajmer VVNL, Jaipur, Rajasthan
22. CMD, UPPTCL, Lucknow-226001
23. Managing Director, SLDC, UPPTCL, Lucknow-226001
24. Managing Director, UPRVUNL, Lucknow-226001
25. Managing Director, Purvanchal VVNL, Varanasi-221004
26. Managing Director, SLDC, PTCUL , Rishikesh
27. Managing Director, PTCUL, Dehradun-248001
28. Managing Director, UJVNL, Dehradun-248001
29. Sh. S.S.Yadav, Managing Director, UPCL, Dehradun-248001
30. Sh. Jayant Kumar, Director (Finance), NHPC, Faridabad-121003
31. Sh. Preman Dinaraj, Director (Finance), NPCIL, Mumbai-400094
32. Director (Commercial), NTPC, New Delhi-110003
33. Sh. R.P. Sasmal, Director (Operation), PGCIL, Gurgaon-122001
34. Sh. R.N. Misra, CMD, SJVNL, New Delhi
35. Director (Technical), THDC, Rishikesh-249201
36. Sh. K.V.S.Baba, CEO, POSOCO, New Delhi-110016
37. Sh. P.K. Agarwal, GM, NRLDC, New Delhi-110016
38. CEO, Aravali Power Company Pvt. Ltd., NOIDA
39. Sh. Karunakar Jha, DGM (Commercial), Jhajjar Power Ltd., Haryana
40. Sh. V.S. Babu Kothapalli, WTD, Lanco Anpara Power Ltd.
41. Sh. M.K Parameswaran, Station Director, Rosa Power Supply Company Ltd.
42. Sh. Arvind Gujral, CEO, BSES Rajdhani Power Limited, New Delhi
43. Sh. Satish Jindal, Director and CEO (Trading), JSW Energy Ltd., New Delhi
44. Sh. Jaydeb Nanda, COO, Adani Power Rajasthan Ltd., Ahmedabad-380006
45. Sh. Anil Kumar Garg, GM(BD), Malana Power Company Ltd, Noida-201301
46. Shri Amit Mittal, Talwandi Sabo Power Ltd. Distt: Mansa, Punjab-151302

Special Invitee

1. Chief Engineer, NPC, CEA, NRPC Building, Katwaria Sarai, New Delhi-110016

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List of TCC Members

1. Sh. Jatinder Kumar Juneja, Chairman TCC and Director (Tech), HVPN Ltd, Panchkula-134109
2. Sh. R.K. Sharma, Director (Tech), HPSEB Ltd, Shimla-171004,
3. Sh. V.K. Kalra, Member (Power), BBMB, Chandigarh-160019
4. Chief Engineer (GM), CEA, R. K. Puram, New Delhi-110066
5. Chief Engineer, UT of Chandigarh, Chandigarh-160009
6. Sh. Prem Prakash, Director (Operation), DTL, New Delhi-110002
7. Sh. V. Venugopal,, SLDC, DTL, New Delhi-110002
8. Sh. Jagdish Kumar, Director (Technical), IPGCL, New Delhi-110002
9. Chief Engineer (SO&C), SLDC, HVPNL, Sewah, Panipat
10. Director (Generation), HPGCL, Panchkula-134109
11. Sh. O.K. Sharma, CE, HPPC, Panchkula-134109
12. Director (Projects), HPPTC Ltd., Shimla-171004
13. Superintending Engineer, SLDC, HP LDS, Totu, Shimla
14. Development Commissioner (P), PDD, Jammu, J&K
15. Managing Director, J&K State Power Dev. Corp., Srinagar, J&K
16. Director (Tech.), PSTCL, Patiala
17. Director (Distribution), PSPCL, The Mall, Patiala
18. Director (Technical), RVPNL, Janpath, Jaipur-302005
19. Director (PT), Jaipur VVNL, Jaipur, Rajasthan
20. Director (Opn), UPPTCL, Lucknow-226001
21. Chief Engineer (TO), UPRVUNL, Lucknow-226001
22. Director (O&M), PTCUL, Dehradun-248001
23. Managing Director, UPCL, Dehradun-248006
24. Director (Operation), UJVNL, Dehradun-248006
25. Executive Director (O&M), NHPC, Faridabad-121003
26. Sh. K.P.Singh Chief Engineer (E&T), NPCIL, Mumbai-400094
27. Regional Executive Director (NR), NR-HQ, NTPC, Lucknow-226010
28. Sh. Prabhakar Singh, ED (NR-I), PGCIL, New Delhi-110016
29. Sh. R.K. Bansal, Director (E), SJVNL, New Delhi
30. General Manager (Electrical Design),THDC, Rishikesh-249201
31. Sh. P.K. Agarwal, GM, NRLDC, New Delhi-110016
32. AGM (O&M), Aravali Power Company Pvt. Ltd., Jhajjar
33. Sh. Karunakar Jha, DGM (Commercial), Jhajjar Power Ltd., Haryana
34. Sh. V.S. Babu Kothapalli, WTD, Lanco Anpara Power Ltd.
35. Sh. Hirday Singh Tomar, Addl. Vice President, Rosa PSCL
36. Sh. Girish Deshpande, Director (Technical) JSW Energy Ltd., New Delhi
37. Sh. Kanti Biswas, Station Head, Adani Power Rajasthan Ltd., Ahmedabad-380006
38. Sh. Sheshadri Krishnapura, VP, BSES Rajdhani Power Limited, New Delhi
39. Sh. Anil Kumar Garg, GM(BD), Malana Power Company Ltd, Noida-201301

Copy for information to:

i. Member Secretary, WRPC, Mumbai-400 093.
ii. Member Secretary, SRPC, Bangalore-560 009
iii. Member Secretary, ERPC, Kolkata-700 033.
iv. Member Secretary, NERPC, Shillong-793 003.

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ITEMS FOR NRPC ONLY

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(मनोज सिंह)
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उत्तर क्षेत्रीय विद्युत समिति
NORTHERN REGIONAL POWER COMMITTEE

SUMMARY RECORD OF DISCUSSIONS
OF
34th MEETING OF TECHNICAL COORDINATION SUB-COMMITTEE
&
38th MEETING OF NORTHERN REGIONAL POWER COMMITTEE

The 34th meeting of Technical Coordination Sub-Committee (TCC) and 38th meeting of Northern Regional Power Committee (NRPC) were held on 24th and 25th October, 2016, respectively at Rishikesh, Uttarakhand. The list of participants in the TCC and NRPC meetings is enclosed at Annexure- I & II, respectively.

PROCEEDINGS OF 34th MEETING OF TCC

Shri D.V. Singh, Director (Technical), THDC India Limited welcomed Members of Technical Coordination Sub-Committee and other delegates. A short presentation, showing the achievements made by THDCIL was shown.

Shri P.S. Mhaske, Member Secretary, NRPC, welcomed the members of Technical Coordination Sub-Committee and other delegates. He welcomed Shri J.K. Juneja, Director (Tech.), HVPNL, who had taken over as Chairman, TCC for the year 2016-17. He also proposed a resolution in appreciation of the services rendered by Shri R.K. Sharma, Director (Op), HPSEBL, who had relinquished charge of Chairman, TCC after completion of his tenure on 31st March, 2016. TCC in its resolution, placed on record its appreciation of the outstanding services rendered by Sh. R.K. Sharma during his tenure as Chairman, TCC.

Giving overview of operation of Northern Grid, he stated that power supply position of Northern Region during July to September 2016 was satisfactory. The region as a whole faced nominal peak power shortage in the range of 1-3% and energy shortage of 1-2%. He stated that Peak and energy shortage were relatively higher in J&K and Uttar Pradesh.

Member Secretary, NRPC stated that in past during winter season large number of tripping of transmission lines occurred due to fog, causing minor grid events. Due to rigorous monitoring and follow-up at the NRPC level and

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action taken by the transmission utilities for replacement and cleaning of insulators, the fog &pollution related trippings had been reduced over the years. He requested the utilities to keep up the efforts as has been done in the past to prevent such tripping during this winter season for safety of the grid. He further stated that another issue which was a cause of concern during winter season was high voltage in the grid. He requested all utilities to explore transformer tap optimization, operate generating units in synchronous condenser mode where ever such facilities are available, absorption of reactive power by the generating units to its capabilities, switching off the Capacitor banks etc. to maintain the system voltages within safer limits.

Member secretary, NRPC informed that in line with the deliberation in the 35th NRPC meeting held in July 2015, Symposium on "Load Forecasting for Operational Planning" on 5th August 2016 and Tutorial on Power System Oscillations & PSS Tuning on 7th October 2016 was organised by NRPC sectt. He further informed that capacity building programme on integration of renewable into the grid, with funding from PSDF had also been completed.

He informed that large number of agenda items had been listed for deliberation covering various operational and commercial issues. He expressed hope in getting solution to the various issues through fruitful discussion in the meeting.

MS, NRPC thanked THDCIL for hosting the meeting and for making excellent arrangements for the comfortable stay of the participants at holy city of Rishikesh.

Shri J.K. Juneja, Chairperson TCC welcomed the participants. He expressed his satisfaction that the Northern Region peak load period had passed without any significant event affecting grid security. However, he expressed his concern about 70 odd events of GD-I category reported during April to September 2016. He requested all the utilities to replace the obsolete and defective relays and switchgears etc. so that minor incidents which were attributable to deficiencies in Protection System could be avoided. He added that if required, PSDF funding may be explored for such schemes. While mentioning the report of the group for improvement in protection system he suggested that due consideration need to be given to protection related issues. He sought attention of the delegates towards the issue of fog related tripping & high voltage conditions during winter and requested the concerned utilities to take suitable action to avoid fog related tripping and to maintain grid parameters within permissible limits. He also emphasised need for taking some concrete steps for providing reactive power compensation at 220kV level.

He expressed concern on non-availability of reliable telemetry. He appreciated the work done by POWERGRID and requested them to expedite the work.

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Chairman, TCC drew attention of the members on the issue of mismatch in data from SCADA and interface meters. He suggested to take action on the recommendation of TeST sub-committee for preparing weekly reports based on detailed analysis of SCADA and Interface Meter data, as correctness of SCADA data impacts many operational decisions having commercial consequences.

He highlighted the issue of Maintenance / Replacement of RTUs installed under ULDC Phase-I Project, majority of which would complete their useful life in June 2017. He urged all the concerned utilities to initiate action for replacing RTUs before June 2017 and to maintain those which would remain in the system.

Shri J.K. Juneja, Director (Technical), HVPNL and Chairman, TCC expressed gratitude towards THDC India Ltd. for making excellent arrangement for the meeting.

CONFIRMATION OF MINUTES (TCC)

A.1 Confirmation of Minutes of 33rd meeting of TCC

Minutes of 33rd meeting of TCC held on 21st March, 2016 circulated vide letter No. NRPC/Comml/209/RPC(37th)/2016/5417-5505 dated 13th June, 2016 was confirmed.

PROCEEDINGS OF 38th MEETING OF NRPC

Shri R.S.T. Sai, Chairman and Managing Director, THDCIL, welcomed members of NRPC and other senior officers on behalf of THDCIL.

Member Secretary, NRPC welcomed all the NRPC members and other participants. He especially welcomed Shri Vineet Garg, Managing Director, HVPNL, who had taken over as Chairperson, NRPC for the year 2016-17. He informed that Shri P.C. Negi, Managing Director, HPSEBL, had relinquished charge of Chairperson, NRPC after completion of his tenure on 31st March, 2016. On behalf of NRPC he proposed a resolution as given below in appreciation of the services rendered by Shri P.C. Negi, Managing Director, HPSEBL:

> "Northern Regional Power Committee places on record its deep appreciation of the outstanding service rendered by Shri P.C. Negi, MD, HPSEB Ltd. during his tenure as Chairperson, NRPC. Shri Negi, provided able guidance in various technical, commercial &

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administrative matters and made valuable contribution as Chairperson of the Committee."

Members adopted above resolution.

Member Secretary, NRPC thanked THDCIL for hosting the meeting at very short notice and excellent arrangement for stay.

Shri Vineet Garg, Chairperson NRPC welcomed the participants. He expressed satisfaction over, by and large, comfortable power supply position in the Northern Region during the period of April to September, 2016. He also appreciated efforts of all concerned for managing high demand period of the region without any major grid incident.

He stated that with the combined efforts of transmission utilities in Northern region and the rigorous monitoring at regional level, the incidents of tripping of transmission lines during foggy weather had reduced in last 4-5 years. He requested all the transmission utilities to complete this year's target of replacing the conventional insulators with polymer insulators and cleaning of conventional insulators by 15th December 2016.

He expressed concern regarding maintenance/replacement of RTUs installed under ULDC Phase-I Project, majority of which need to be replaced in a short period of time. Since proper functioning of RTUs is vital for ensuring telemetry in SLDCs and NRLDC, he requested all the utilities to work on this issue on war footing.

He appreciated the NRPC Sectt for organising two workshops on load forecasting for operational planning of power system and PSS tuning. He suggested that such workshops should be organised in future also, so that power sector personnel remain updated with the latest technologies and best practices.

In the end, he thanked THDC India Ltd. for the excellent arrangements and comfortable stay of the participants.

Shri S. D. Dubey, Chairperson CEA welcomed the participants. He expressed that since July 2012 incident, the grid had not seen any disturbance which was attributable to meticulous planning, coordination, operation & maintenance by all those concerned with the grid. He pointed out that our frequency band is one of the narrowest in the world. He raised the issue of power cuts & shortages in remote areas of our country despite surplus energy availability in our country. To improve this situation he advised not only to focus on generation but also on transmission, distribution and safe & reliable operation of the integrated grid.

He stated that with number of schemes of GoI and with massive investment in this sector supplemented by the coordinated efforts of all those concerned, the mission of the GoI, to provide quality and reliable power to all the consumers

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by 2019, would be a reality. He stressed that some very aggressive efforts need to be put, in order to achieve that milestone. He stated that by 2021-22, India would be having adequate transmission system throughout the country and would be having inter-regional transmission capacity of around 100,000 MW.

He appreciated the NRPC forum for providing a platform to all the constituents to discuss and resolve the technical and operational issues of such a complex system.

CONFIRMATION OF MINUTES (NRPC)

A.2 Confirmation of Minutes of 37th meeting of NRPC

Minutes of 37th meeting of NRPC held on 22nd March, 2016, circulated vide letter No. NRPC/Comml/209/RPC(37th)/2016/5417-5505 dated 13th June, 2016 was confirmed.

OPERATIONAL ISSUES

B.1 New Special Protection Scheme(SPSs) for Northern Region

TCC Deliberation

B.1.1 Member Secretary, NRPC stated that section 5.2 (o) of Indian Electricity Grid Code requires System Protection (SPS) Schemes to be finalized by RPCs. Accordingly, based on requirements, various SPSs were recommended by Operation Coordination Sub-Committee or Protection Coordination Sub-Committee. He added that, subsequent to last TCC/NRPC meetings held in March 2016, following SPSs had been recommended by OCC for approval of NRPC:

A. SPS for Kawai-Kalisindh-Chhabra generation complex recommended in 122nd OCC meeting held on 22nd April, 2016.

B. SPS for Anpara generation Complex recommended in 122nd OCC meeting held on 22nd April, 2016.

C. SPS for the Tehri complex for the contingency of any of the circuit of 400 kV Koteshwar-Merrut line recommended in 127th OCC meeting held on 23rd Sept., 2016

B.1.2 In regard to SPS for Kawai-Kalisindh-Chhabra generation complex, Superintending Engineer, NRPC stated that automatic load shedding under the above said SPS had not been implemented by RVPNL for N-2

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contingency of 765kV Anta-Phagi 1 & 2 or 765/400kV ICTs at Anta (till only two ICTs in service). Representative of NRLDC also expressed concern over non-implementation of automatic load shedding

B.1.3 Representative of RRVPNL stated that some feeders had been identified for automatic load shedding. Some more feeders were being identified to meet the targeted load shedding of 750 MW. He mentioned that for implementation of SPS communication links were also to be established. He assured that the scheme would be completed by March 2017.

B.1.4 Representative of Adani Power Limited (APL) pointed out certain issues in the scheme and requested Rajasthan Vidyut Prasharan Nigam Limited(RVPNL) to resolve them at the earliest. Representative of RVPNL assured to look into the issues.

B.1.5 TCC advised RVPNL to start implementing the scheme with feeders already identified. More feeders should be added to the scheme as and when they are identified. TCC also decided that RVPNL and Adani Power Ltd. would submit a joint status report to NRPC Secretariat by 10th November 2016 on the issue raised by APL during the meeting.

B.1.6 In regards to SPS for Anpara generation Complex, representative of UPPTCL stated that LoA would be placed by end of Oct,2016 and the scheme would be implemented within 3 months.

B.1.7 In regard to SPS for Tehri complex, THDCIL agreed to implement the SPS for the Tehri complex by November 2016.

B.1.8 With the observations mentioned above in regard to Kawai-Kalisindh-Chhabra generation complex, TCC recommended aforesaid System Protection Schemes for approval of NRPC.

NRPC Deliberation

NRPC approved the SPSs recommended by the TCC.

B.2 Report of the Group Constituted for suggesting measures for the improvement in protection system among the utilities of Northern Region

TCC Deliberation

B.2.1 Member Secretary, NRPC stated that several issues related to power system protection were observed after the twin grid disturbances in July 2012. It was observed that many of these issues/tripping could have been avoided by ensuring well-functioning protection system. Therefore, need was felt to explore ways and means to bring about improvement in the field of Power System Protection among the utilities in Northern Region. He added that to ensure improvement in the protection system among the utilities of Northern

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Region, a group was constituted to suggest measures for improvement in protection system. The report of the Group was enclosed at Annex-II of the agenda. The report was deliberated in the 30th meeting of Protection Sub-Committee (PSC) held in September 2015, wherein the PSC recommended for approval of the report of the group by TCC/NRPC.

B.2.2 Member Secretary, NRPC briefed the members about recommendations on Capacity Building, Resource Deployment, Protection System Maintenance, Event Reporting & Monitoring and Talent Recognition Mechanism.

B.2.3 On the recommendation regarding Human Resource deployment, representative of Haryana Vidyut Prasaran Nigam Limited (HVPNL)and Himachal Pradesh State Electricity Board Limited (HPSEBL) raised concern about availability of manpower as per the recommendations. SE, NRPC opined that the recommended manpower may be considered as target and states should strive to achieve the same.

B.2.4 On the recommendation regarding, talent recognition mechanism, representative of Delhi Transmission Limited (DTL) stated that only appreciation might not be sufficient. Therefore, monetary reward for talent recognition should also be considered.

B.2.5 Representative of HPSEBL stated that a time bound action plan may be identified for implementation of the recommendations.

B.2.6 TCC recommended that the report of the Group may be accepted. TCC further recommended as under:

- Individual utilities would immediately start working to develop training module for Basic Training on Protection System for Sub-station Engineers (Level 1) and start training programmes within 6 months. NRPC Secretariat should take action to start Level 2 training programme in November, 2016. Level 3 training programme would be taken up within 6 months.
- Utilities would take immediate action to implement recommendation regarding onsite Experience and Relay Specific Training by OEM.
- Utilities would initiate action to meet the recommended level of deployment of protection Engineers by October 2017 and recommended level of Tools & plants by March 2017.
- Utilities would take immediate action and align their protection related maintenance activities in accordance with recommendations of the group.
- Utilities would develop a mechanism by January 2017 to comply with the recommendation 3.4.1 of the group regarding event reporting and analysis.

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- NRPC Sectt. and NRLDC would deliberate and implement a mechanism for web based reporting of events.
- A group comprising members from HPSEBL/HPPTCL, DTL, UPPTCL, POWERGRID and NRPC Secretariat would be constituted to formulate detailed talent recognition mechanism.

NRPC Deliberation

NRPC concurred with the recommendations of TCC.

B.3 System Study for Capacitor Requirement in Northern Region for the year 2016-17 and 2017-18

TCC Deliberation

B.3.1 Member Secretary, NRPC stated that in the 37th NRPC meeting, held in March 2016, it was decided that the task of System Studies for assessment of Capacitor requirements in Northern Region would be entrusted to CPRI. It was also decided that Member Secretary, NRPC would proceed further in the matter with the approval of Chairperson, NRPC. This decision was taken as states of Haryana, Punjab, J&K and U.P. (MVVNL) had submitted the scheme for installation of capacitor in their respective state to the Appraisal Committee of PSDF for its funding through PSDF. Based on the decision of the Techno-Economic sub-group of PSDF, the schemes had been forwarded to NRPC for assessment.

B.3.2 He informed that Letter of Award was issued to CPRI for carrying out the studies with consultancy charges of Rs. 20 Lakh plus Service tax after due approval from Chairperson, NRPC. To carry out capacitor studies, CPRI had submitted format for submission of data which were circulated to the SLDCs. He expressed concern that even after continuous follow-up in OCC meetings and letter to TCC members of STUs, only HPSEB Ltd, RRVPNL, PSTCL and HVPNL (Partial Data) had submitted the data. Therefore, the studies could not be carried out. He mentioned that in accordance with IEGC, RPCs are required to carry out studies every year to finalize reactive compensation and therefore non-submission of data for carrying out the aforesaid study amounts to non-compliance to IEGC. Consequently, in OCC, it was proposed that Hon"ble CERC and PSDF nodal agency would be informed that capacitor requirement could not be finalized due to non- availability of the data and the Letter of Award issued to CPRI for carrying out capacitor studies for 2016-17 and 2017-18would also be cancelled.

B.3.3 TCC Members expressed concern over non-submission of data by some STUs. The STUs who had not submitted data, assured that they would submit the same shortly.

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B.3.4 One of the suggestions given in the meeting was that guidelines should be framed for installing capacitors along with new Distribution transformer. However, some of the members were not in favour of such guidelines as they thought it would lead to over or under compensation depending on type of load to be served by that distribution transformer.

B.3.5 Representative of HVPNL stated that the scheme submitted by them for Power System Development Fund (PSDF) funding was only for making existing capacitors switchable.

B.3.6 After detailed deliberations following was recommended by TCC:

- Since more than half the period of current FY had already passed, no purpose would be served for carrying out studies for current FY i.e. 2016-17.
- Studies should be got done from CPRI for 2017-18 and 2018-19.
- All the STUs would submit the data by 31.10.2016 for carrying out study for the period 2017-18. Subsequently, the data would be submitted by 30.11.2016 for carrying out study for 2018-19.
- Constitution of a group with the members from BRPL, HVPNL, UPPTCL, One DISCOM of Rajasthan and NRPC Secretariat to frame the guidelines for installation of capacitors at distribution level along with the commissioning of distribution transformer.
- If the proposal of HVPNL is only for making the Capacitors switchable, it can be recommended for PSDF funding.

NRPC Deliberation

NRPC concurred with the recommendations of TCC.

B.4 Maintenance / Replacement of RTUs installed under ULDC Phase-I Project

TCC Deliberation

B.4.1 Member Secretary, NRPC stated that most of the presently working RTUs (AREVA make S900) were installed at the EHV sub-stations/switchyards of state and Central Sector utilities in the year 2002 under Unified Load Despatch Scheme (ULDC) Phase-I and would complete their fair life in July 2017. The maintenance of these Remote Terminal Units (RTUs) is presently being carried out by POWERGRID. He informed that the issue was deliberated in the 7th and 8th meetings of TeST sub-committee held in January 2016 and July 2016, respectively. The same was also highlighted by NRPC Secretariat vide letter dated 17.08.2016 addressed to members of TCC representing transmission utilities, and generating companies. He mentioned

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that as per Grid Code (Clause 4.6.2), it is the responsibility of the Users, STU and CTU to provide Systems to telemeter power system parameter.

B.4.2 Representative of POWERGRID informed that AREVA had already phased out these RTUs from production and had stopped support services for the same. He stated that utilities should either replace these RTUs or take the responsibility for maintenance of these RTUs after completion of useful life of 15 years. However, in response to a query, he also informed that AMC for these RTUs had been extended for one year with the provision of extension for one more year thereafter.

B.4.3 Representative of UPPTCL stated that they had placed the order for purchase of 39 RTUs. The RTUs would be replaced by March 2017.

B.4.4 Representative of HPPTCL stated that out of 16 RTUs, 7 were being replaced. Remaining 9 RTUs would be replaced by September, 2018 through PSDF funding.

B.4.5 Representative of PTCUL stated that total 13 RTUs were to be replaced and they were going for PSDF funding.

B.4.6 Representative of PSTCL stated that 3 RTUs had been replaced and they had already placed an order for RTUs, to replace significant number of existing RTUs. Remaining RTUs would be replaced through PSDF funding by July 2017.

B.4.7 Representative of HVPNL stated, for replacement of 12 RTUs out of 37 Nos. they were in the process of procurement through World Bank funding.

B.4.8 Representative of BBMB stated that out of 21 RTUs, they had replaced 10 Nos.

B.4.9 Representative of NTPC stated that they were already in the process of replacing the RTUs. He requested a mechanism to ensure that newly purchased RTUs are compatible with SCADA.

B.4.10 Member Secretary, NRPC stated that in ULDC phase-I, exercise was done to identify the various RTU models which were compatible with the then SCADA. He suggested that similar exercise could be done, while procuring new RTUs to ensure compatibility with existing SCADA system..

B.4.11 Representatives of DTL and BBMB suggested that remaining RTUs be replaced by POWERGRID through PSDF funding. Representatives of SJVN and NHPC supported this suggestion as tendering for procuring few RTUs might not lead to economic pricing.

B.4.12 Representative of POWERGRID stated that if quantum of RTUs to be procured becomes significant, they would consider procuring RTUs on behalf of various utilities. He emphasized that apart from RTUs, other components of

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communication system also need to be replaced as these components are also going to complete their useful life.

B.4.13 TCC recommended that a special meeting of TeST sub-committee be convened on 15th November, 2016 to discuss the issue of replacement of RTUs and other communication equipment. Constituents were requested to send their representative in the meeting having all relevant information regarding requirement of RTUs and other communication equipment to be replaced.

NRPC Deliberation

NRPC concurred with the recommendation of TCC.

B.5 Compliance to recommendations of Task Force on 'Power System Analysis under Contingencies'

TCC Deliberation

B.5.1 Member Secretary NRPC stated that as a follow up of one of the recommendations of Enquiry Committee headed by Chairperson, CEA on grid disturbances that took place on 30th and 31st July 2012, Ministry of Power had constituted a „Task Force on Power System Analysis under Contingencies" in December 2012. The Task Force had submitted its report in August 2013. The report of the Task Force as also Guidelines for Protection settings recommended by the Task force had been uploaded on NRPC website (links http://www.nrpc.gov.in/reports/other/taskforce_analysis.pdf and http://www.nrpc.gov.in /reports/other/ps_guidelines.pdf).It was also informed that Member Secretary, NRPC vide letter dated 31st July 2014 had also requested members of NRPC to initiate action for implementation of recommendations of the Task Force.

B.5.2 He added that the matter was also deliberated in the 33rdNRPC meeting held on 11thNovember, 2015, wherein it had emerged that some of the recommendations had been complied with and some of them had been implemented partially. Some of the decisions taken in the afore mentioned NRPC meeting, which had not been fully implemented, were as under:

(i) Decision: "Concerted efforts should be made to operationalize EMS application under recently commissioned ULDC phase-II. Further, Pradhan Committee"s recommendation in regard to deployment of manpower and their emoluments, incentives in SLDCs be implemented."

Representative of NRLDC stated that State Estimator, which was backbone of EMS, was working satisfactorily for 400kV level. However, representatives of many SLDCs stated that they were not able to operationalize State Estimator at 220 kV level. Representative of

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POWERGRID stated that main reason for non-functioning of State Estimator at state level was the non-availability of sufficient telemetry data. He stated that for converging of EMS, at least 70% data telemetry is required.

Representative of BBMB pointed out that even though they had 100% telemetry, Energy Management System (EMS)was not functioning at 220kV level. From the discussions, it emerged that apart from telemetry, correct modelling of network was also an issue.

Representative of DTL raised requirement of training for optimum utilisation and modelling of EMS. Representative of POWERGRID informed that training as per original scope of work had already been completed. He also added that correct modelling is the responsibility of SLDCs.

Some members raised the issue of quality of manpower deputed by Siemens. Representative of POWERGRID stated that AMC scope was clear and the matter of deficiency in service, if any, should be reported to enable suitable action.

TCC made following recommendations:

- POWERGRID to take up the matter regarding quality of manpower with Siemens.
- Training on modelling and running of EMS may be arranged and expenses for the same may be met from NRPC fund.
- The issue of Non- functioning of State Estimator may be discussed in special TeST sub-committee meeting to be held on 15th November 2016.
- On the issue of less manpower deployed at SLDCs as compared to that recommended by the Pradhan Committee, TCC advised SLDCs to strive to achieve the same.

(ii) Decision: "Transformer Tap Position adjustment should be done on seasonal basis. Provision of adequate reactors, study of impact of 220 kV lightly loaded lines & their compensation and absorption of reactive power by generating units etc would help in controlling voltages."

Representative of NRLDC stated that the tap positions of transformers in ISTS network are changed on the advice of NRLDC. He added that NRLDC had suggested methodology for arriving at optimal tap position for transformers and STUs were requested to give feedback on transformers tap changed in intra-state system. However, feedback from states was not forthcoming. It was also stated that Generating stations

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are helping in absorption of reactive power but there might be further scope for improvement.

(iii) Decision: "POWERGRID had informed that exercise of tuning of HVDC and TCSC controllers is done regularly. POWERGRID was to inform periodicity of such tuning."

Representative of POWERGRID informed that this exercise was being done on yearly basis. It was also informed that a Consultant had been appointed and one of the task assigned to it was to suggest periodicity of tuning of controllers. He informed that report of the consultant was awaited.

B.5.3 Member Secretary NRPC stated that one of the recommendations of the above mentioned Task Force was related to maintaining protection related database. This issue was deliberated in the Protection Sub-committee (PSC) meetings and it was decided that data regarding settings of relays would be compiled by the Central Transmission Utility (CTU) and (State Transmission Utilities (STUs) for their respective network and furnished to RLDC and SLDC, respectively with a copy to RPC for maintaining the database. A format for submission of protection related database was prepared and same was agreed in 30thPSC meeting held on 21.09.2015. The format was available on NRPC website. The issue of protection data base was being regularly discussed in National Power Committee (NPC) meeting wherein emphasis was laid to maintain the database.

B.5.4 SE, NRPC stated that none of the utilities had submitted the database of the protection relays setting.

B.5.5 Representative of POWERGRID stated that ERPC and SRPC had outsourced the work of protection database. Representative of DTL opined that third party might be engaged for this work; which can also collect data from field.

B.5.6 Representative of NRLDC raised concern over security of data in case of engagement of third party.

B.5.7 TCC recommended that protection setting data be submitted by all the utilities by 31.12.2016 for 400kV and 220kV S/S.

NRPC Deliberation

NRPC concurred with the recommendations of TCC.

B.6 Renovation and up-gradation of Protection System of various Sub-stations and Power Houses of Bhakra Beas Management Board.

TCC Deliberation

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B.6.1 Member Secretary NRPC stated that BBMB had submitted a proposal for funding from Power System Development Fund (PSDF) for Renovation and up-gradation of Protection System of various Sub-stations and Power Houses. Appraisal committee of the PSDF had requested BBMB to get the proposal appraised from NRPC. Accordingly, the proposal was submitted by BBMB to NRPC for appraisal. The salient features of the proposal are:

- In line with the observations of protection audit, it is proposed to provide Bus Bar Protection at two 220 kV sub-stations namely Delhi & Kurukshetra.
- At 220 kV Ganguwal s/s, 220 kV Switchyard of Bhakra Right Bank, Dehar Power House & Pong Power House, existing old Electromechanical realys are proposed to be replaced with Numerical ones to comply with Protection audit observations.
- The old electro-mechanical Unit Protections provided at Bhakra right & Pong Power Houses are also proposed to be replaced.
- Redundant DC sources are required to be provided at 220KV substations of BBMB to ensure reliable grid operation.
- At some of the substations, existing CTs are required to be replaced because of High Tan Delta. Also some of the CTs, which are quite old and have oil leakage, are also proposed to be replaced.
- PTs/CVTs at some of the substations are required to be replaced in view of providing synchronizing facility and ageing.
- Synchronising trolleys at 220kV GSS Dhulkote and Sangrur are to be provided to ensure trouble free operation during restoration of the Grid.
- Replacement of existing old and obsolete PLC terminals along with protection couplers have been proposed for smooth operation of PLCC equipment.

B.6.2 Member Secretary NRPC added that OCC in its 128th meeting held on 17th October, 2016 had recommended the proposal for approval of NRPC.

B.6.3 TCC recommended the scheme for approval of NRPC.

NRPC Deliberation

NRPC decided the scheme to be recommended for funding from PSDF.

B.7 Certification of Non-ISTS line for inclusion in PoC Charges

TCC Deliberation

B.7.1 Member Secretary NRPC stated that Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) (Third Amendment) Regulations, 2015 has provision for approval of RPC for considering some State transmission lines as ISTS based on the usage of the particular line. . He informed that it was decided in 31st TCC/ 35th NRPC meeting held on 08th /09th July, 2015 to constitute a group to recommend a

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methodology for the study to be conducted by NRPC Secretariat, in consultation with RLDC. Based on the methodology suggested by the group, the study was carried out for certification of the non-ISTS lines submitted by UP, Punjab and Rajasthan.

B.7.2 He added that the complete lists of transmission lines submitted by STU were sub-divided in following categories:

(i) Transmission lines, which fulfil the criteria recommended by the Group and hence were recommended to be certified as ISTS

(ii) Transmission lines, which did not fulfil the criteria recommended by the Group and hence could not be certified as ISTS

(iii) The lines, which were claimed to be used for inter-state transmission by STUs but were not modelled in the PoC transmission charge calculation and hence exercise to see whether or not these lines carry inter-state power could not be carried out. The responsibility to submit the requisite details for modelling the lines in PoC transmission charge study rests with STU concerned.

(iv) The transmission lines, which were natural inter-state lines and hence need not be certified as ISTS.

B.7.3 He informed that following transmission lines, meeting the criteria decided by the group were recommended for certification as ISTS for the current Financial Year 2016-17:

S.No.	Name of Transmission Line	Owner STU
1.	400 kV S/C Jodhpur – Merta Line-I	RVPN
2	400 kV S/C Jodhpur – Merta Line-II	RVPN
3	400kV S/C Merta-Ratangarh Line	RVPN
4	400kV S/C Merta-Heerapura Line	RVPN
5	220kV D/C Aau – Baithwasia Line	RVPN
6	220kV D/C Baithwasia–BhawadLine	RVPN
7	220kV D/C Gajner – Bikaner(400kV GSS)Line	RVPN
8	220 KV Nahtaur-Matore (PG)	UPPTCL
9	400 KV Sultanpur- KURSI RD(PGCIL)	UPPTCL

B.7.4 It was also informed that the proposal to certify transmission lines as ISTS for the FY 2016-17 was recommended by OCC for approval of TCC/NRPC.

B.7.5 TCC recommended the above mentioned lines for approval of NRPC for certification as ISTS.

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B.7.6 It was emphasised that this certification was only for 2016-17. For next financial year (2017-18) the claim would require to be submitted by December, 2016. Further, it was clarified that all norms (such as availability) of CERC for ISTS lines would be applicable for these certified lines.

B.7.7 Representative of HPPTCL stated that they had sent a list of two lines to NRPC secretariat for certification as ISTS and wanted to know status of the same.

B.7.8 It was clarified to them that the lines submitted by HPPTCL were not declared under commercial operation by that time. Further, the lines had not been modelled in the PoC software and getting the lines modelled was the responsibility of element owner.

NRPC Deliberation

NRPC approved the list of 9 transmission lines recommended by the TCC for certification of these lines as ISTS.

B.8 Overview of Grid Operation

TCC Deliberation

B.8.1 Member Secretary NRPC stated that Northern Region had a peak power shortage in the range of 0 to 1.3% and energy shortage in the range of 0 to 1%. J&K faced higher peak power as well as energy shortage (of the order of 18%).

B.8.2 He added that NRPC Sectt. has to submit to CEA Power Supply Position on monthly basis in the form 28 (provisional) and Form 29 (revised) as per CEA standard. The date for submission is 5th and 18th day for provisional and revised PSP, respectively. He requested concerned members to furnish the power supply information on monthly basis in the prescribed format to NRPC Sectt. well before these dates.

B.8.3 TCC advised all the SLDCs to submit provisional data for preparation of Power Supply Position by 2nd day of the month and revised data by 15th day of the month.

B.8.4 Representative of NRLDC made a detailed presentation on grid operation during July-September 2016. Highlights of the grid operations were:

- Frequency profile for last one year showing improvements in last 5-6 months. For example, frequency was about 75% of time in operation band during Sep 16.
- Frequency Variation Index (FVI) remaining below 0.05 and on certain dates FVI was0.025.

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- Pattern of Demand met of states/Region were presented. NR crossed 1200 MU per day consumption on 30th June 2016 and highest demand met in NR crossed 52.6 GW.

B.8.5 Representative of NRLDC also presented typical load curves of different months and their peculiarities for managing demand. More peaking and declining load factor over the years was mentioned. He also highlighted the following issues:

- Large number of line tripping due to tower collapse in Haryana, UP, Rajasthan, Delhi etc during thunderstorm. Few cases of large impact on grid were highlighted. TCC recommended that feedback on action taken by STUs shall be discussed in OCC.
- Switching off of feeders during thunderstorm and the difficulty it creates.
- Overdrawal of state control areas specially the persistent non- zero crossing of deviation.
- Methodology/Terminology for shortage computation
- Handling silt at Hydro Stations (This year more frequent start and Stop):
  - ✓ Better silt forecasting, ramping while closing
  - ✓ Keeping of reserves by state utilities.
- Reliability Issues faced in Northern region and different states
  - ✓ Delhi: Opening of Delhi Ring, Frequent tripping around Bamnauli etc.
  - ✓ Haryana: Switchgear rating issue at Nawada, Dhanoda and Mahendragarh, reliability of Faridabad GPS etc.
  - ✓ Rajasthan: Planning deficiencies in Kawai-Kalisindh-Chhabra Complex, High voltage, Hour boundary load changes
  - ✓ UP: N-1 non-compliance at Azamgarh, Sultanpur, Mainpuri, Muradnagar, Muzaffarnagar, Agra etc. Evacuation problem for Anpara Complex, Parichha-Lalitipur complex and Bara TPS. Frequent tripping of Lalitpur and its impact on Agra-Gwalior. N-1-1 non-compliance for Greater Noida and single Transformer issue.
  - ✓ Punjab: N-1 non-compliance at Dhuri, Panchkula, Malerkotla and that of lack of underlying network at Amritsar, Ludhiana etc. Issue of overvoltage in 400 kV ring of Punjab.
  - ✓ Uttrakhand: N-1 non-compliance of Kashipur ICTs and 220 kV lines from Roorkee.
  - ✓ J&K: Low voltages and N-1 non-compliance of 220 kV lines in valley area. 220 kV connectivity from New Wanpoh.
- Winter Preparedness:

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- ✓ Forecasting and load Generation balance
- ✓ High Voltage/Reactive Power Management:
  - o Updating, Monitoring and operation of fixed shunt reactors in the system
  - o Measurement based Tap Optimization of ICTs
  - o Monitoring Reactive power absorption by Generators
  - o Synchronous condenser operation
- ✓ Cleaning of Insulators of EHV lines and Replacement of insulators:
- ✓ Monitoring of Weather data: Erroneous weather data coming from most stations.

- ➢ Maintaining Reserves for each control area: CERC order on operationalizing Primary, Secondary and Tertiary reserves. Mandatory requirement of atleast 50% of largest unit within the state as per CERC, Poor Frequency Response and putting all units on Governor Operation. Impact of Ancillary Services.
- ➢ Forecasting of Demand and Renewable Generation: Pilot project on renewable forecasting and its performance. Requirement of weather data in real time from Renewable generators.
- ➢ Grid Events in the NR Grid during March to Sep 2016: Total 143 number of simultaneous multiple element tripping occurred in Northern Region from Mar'16. Lack of analysis and reporting by concerned utilities.
- ➢ Availability of Real time data telemetry: 1% improvement in stations without telemetry provision. Intermittency of telemetry increased in Sep 2016 with respect to Feb 2016. Concern on use of GPRS, reliability of communication.
- ➢ Running of State Estimator – % Availability of Digital data as well as modeling issues such as in Rajasthan.
- ➢ Status of the installation of URTDSM system: Proper utilization only after provision software for analysis

NRPC Deliberation

NRPC noted the deliberation of the TCC.

B.9 Important Regulation/ Orders from Hon'ble CERC

TCC Deliberation

B.9.1 Representative of POWERGRID stated that Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations,

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2016 came into force with effect from date of publication in Official Gazette i.e. from 29.04.2016.Following new provisions (Clause 4(iii)) have been included w.r.t. transmission

"Where the transmission system executed by a transmission licensee is required to be connected to the transmission system executed by any other transmission licensee and both transmission systems are executed in a manner other than through tariff based competitive bidding, the transmission licensee shall endeavor to match the commissioning of its transmission system with the transmission system of the other licensee as far as practicable and shall ensure the same through an appropriate Implementation Agreement(IA)".

B.9.2 Members noted the information.

NRPC Deliberation

NRPC noted the information.

B.10 Establishment of new 400/220kV substations in Northern Region

TCC Deliberation

B.10.1 Representative of POWERGRID stated that following new substations were planned under various transmission schemes & under implementation. However, implementation of down below 220kV system needs to be commissioned for optimum utilization of the system:

S.No	Name of Substation	MVA Capacity	Expected Schedule
1	400/220kV Kurukshetra S/Stn. (GIS)	2x500	440kV bay and 1no. ICT are ready for commissioning. 2nd ICT expected by Dec"16.
2	400/220kV Bagpat Gas Insulated Stn.	2x500	Commissioned
3	400/220 kV Saharanpur Sub station	2x315	Commissioned
4	400/220kV S/s at Patran	2x500	Commissioned
5	400/220kV Parbati Pooling Station	2x315	Feb"17
6	400/220kV Dehradun Sub station	2x315	Dec"16
7	400/220kV Rajghat Sub station (GIS)	4x500	Land yet to be transferred
8	400/220kV Papankalan -I Sub station (GIS)	4x500	July'17
9	400/220kV Tughlakabad Sub station (GIS)	4x500	July'17

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10	220/66kV GIS S/s at Sector 47,Chandigarh	2x160	24 months from investment approval (planned in Feb"17)
11	400/220kV S/s at Kala Amb	7x105	July"17
12	400/220kV S/s at Amargarh	7x105	Oct.'18(Sterlite Grid planning to prepone)
13	400/220kV Kadarpur S/s in Gurgaon area (GIS)	2x500	May"19
14	400/220kV Sohna Road S/s in Gurgaon area (GIS)	2x500	Sep"19
15	400/220kV Prithala S/s in Palwal area (GIS)	2x500	May"19
16	400/220kV Baram(Jauljivi) S/s	2x315	33 months from IA planned in Mar"17

B.10.2 Representative of POWERGRID requested for submission of the details of planned system along with expected date of commissioning for the down below network related to above mentioned sub-stations.

B.10.3 TCC advised all the STUs to implement the down below network in the matching timeline.

B.10.4 In view of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Fourth Amendment) Regulations, 2016 which came into force with effect from date of publication in Official Gazette i.e. from 29.04.2016 (Agenda Item B.9), some of the members expressed concern that since all the bays provided at the ISTS substations can only be utilised in a phased manner, the bays should also be built in a phased manner.

B.10.5 Regarding number of 220 kV bays being providing for each ICT, TCC recommended that the guideline needs to be reviewed bystanding committee for power system planning in view of changed scenario.

NRPC Deliberation

NRPC concurred with the deliberations of TCC.

B.11 Augmentation of transformation capacity in existing sub-stations

TCC Deliberation

B.11.1 Representative of POWERGRID stated that in addition to the new sub-stations under implementation/ planned at various locations in Northern Region (Agenda Item B.10), augmentation of transformation capacity had also been planned in various existing sub-stations along with bays for downstream network. A List of ICTs along with associated bays of such existing sub-stations is given below:

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S. No.	Substation	Transformation Capacity (MVA)	Commissioning Schedule
1	Shahajanpur 400/220 kV Sub-station	2x 315 MVA	Commissioned (Sep'14)
2	Hamirpur 400/220 kV Sub-station	3x 105 MVA	Feb"17
3	Jalandhar 400/220 kV Sub-station	1x 500 MVA	Commissioned (Jun'16)
4	Kaithal 400/220 kV Sub-station	1x 315 MVA	July'17 (Best effort by Mar/Apr"17)

B.11.2 Representative of POWERGRID requested for submission of the details of planned system along with expected date of implementation for the down below network related to above mentioned sub-stations.

B.11.3 TCC advised all the STUs to implement the down below network in the matching timeline.

NRPC Deliberation

NRPC noted the deliberation of TCC.

B.12 Follow up of Major Decisions of NRPC.

Sl. No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Deliberations in 34th TCC and 38th NRPC meetings
1	Automatic Meter Reading (AMR) for SEMs	13th NRPC meeting held on 24th June 2009.	POWERGRID and NRLDC had started submitting joint reports showing status of data received through AMR. NRLDC stated that out of 1235 interface meters, data from 973 meters was being received. Site Acceptance Test (SAT) was completed and data through AMR was being regularly used by NRLDC for 764 interface meters.

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Sl. No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Deliberations in 34thTCC and 38th NRPC meetings
			POWERGRID informed that the data from all the meters would be available by January2017 TCC and NRPC expressed concern over slow progress of the implementation of AMR and advised concerned agencies to expedite the work.
2	Provision of Bus Reactors in Northern Region to Control Over Voltages	Approved in 15th NRPC meeting on 24th December, 2009	Out of 17 no. reactors at 15 locations, 12 no. reactors at 10 locations have been commissioned. The status of remaining 05 reactors was as under;
			Nathpa-Jhakri (1x80 MVAr): SJVN had informed that bays would be ready by June"17. However, due to peak generation in that period, shut-down may not be available. Therefore, the reactor would be commissioned by December 2017.
			Chamera-I (1x125 MVAr): NHPC had informed that Commissioning was expected by April 2017.
			Parbati-II (1x125 MVAr) and Parbati-III (1x80 MVAr): There is no space at Parbati-III and as such reactors will be installed at Parbati- II. Reactors at Parbati-II will be commissioned along with the commissioning of the project in 2018-19.

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Sl. No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Deliberations in 34thTCC and 38th NRPC meetings
			Dehar (2X 63 MVAR) Included in item 4 (below) of this table.
3.	400 kV Reactors	29th NRPC meeting held in September 2013	• POWERGRID: Reactors at BASSI and Panchkula commissioned. Manesar, Kaithal, Jaipur(S), Kanpur and Sonepat would be commissioned by December 2016. • RVPNL: Commissioning of Reactors at Hindaun by December 2016 and Merta by February 2017.
4	2X63 MVAR Bus reactor and replacement of 250 MVA Trf. with 315 MVA Trf. at Dehar Power House by POWERGRID.	Approved in 30th Standing Committee of Power System Planning of NR held on 19.11.2011	• POWERGRID informed that one reactor would be commissioned by October 2016. • Other reactor was damaged during transportation and would be commissioned by March 2017. • ICT would be commissioned by December 2016.
5	Unified Real Time Dynamic State Measurement (URTDSM) Scheme.	Approved in 27th NRPC meeting held on 13th July, 2012 & 30th November, 2012	• POWERGRID informed that the scheme would be commissioned by June 2017. • NRLDC raised the concern that data from only 21 PMU were being received. Utilisation of the data was not possible for want of analytical software. • TCC/NRPC expressed concern and advised POWERGRID to expedite analytical software,

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Sl. No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Deliberations in 34th TCC and 38th NRPC meetings
			without which PMUs would be of no practical use.
6	Power Evacuation from Dulhasti Power Station, Kishtwar (J&K) – Construction of 2nd 400 kV line	28th Standing Committee	POWERGRID informed that the project was likely to be commissioned by December 2016.
7	Transmission system associated with RAPP-7&8.		POWERGRID informed that Commissioning of RAPP-Kota section was expected by June 2017. It was delayed as forest stretch had now been converted to wild life sanctuary.
8	Transmission system associated with Kishenganga HEP. Kishenganga – Amargarh 220 kV D/c Kishenganga – Wagoora 220 kV D/c	33rd Standing Committee Meeting held on 23/12/2013	POWERGRID had informed that completion schedule of transmission system associated with Kishenganga HEP had been delayed due to unrest in Kashmir. The revised schedule was: ➢ Kishenganga – Wagoora 220kV D/c line - (Mar."18) ➢ Kishenganga – Amargarh 220kV D/c line – (July"17) NHPC informed that Kishenganga HEP would be commissioned by July 2017
9	Fiber Optic based communication system in NR and Additional OPGW connectivity in Northern Region under fiber optic expansion	18th NRPC meeting held on 27th November, 2010 and 28th NRPC	POWERGRID informed that Work on all packages would be completed by August 2017. BBMB requested POWERGRID to connect Barnala (BBMB) to Barnala

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Sl. No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Deliberations in 34thTCC and 38th NRPC meetings
	project	meeting held in 22nd March, 2013	(Punjab) with OPGW.POWERGRID agreed for the same.
10	Rectification of deficiencies coming out of Basic Protection Audit carried out by CPRI in association with POWERGRID	27th NRPC meeting held in November 2013	Would be completed by December 2016.
11	Third party Protection audit of intra-state system / balance system not covered in Basic Protection Audit	27th NRPC meeting held on 30th November, 2012.	Only UPPTCL and PSTCL had not submitted their action plan. UPPTCL informed that the action plan would be submitted within a week. PSTCL agreed to submit the action plan at an early date.
12.	Planning, procurement and deployment of Emergency Restoration System.	In the 34th NRPC meetings 20th March, 2015	Updated status: **DTL**:-Order had been placed for 02 nos. of ERS. Supply expected by May,2017 **PSTCL**:-Tenders were under evaluation. Order was expected to be placed by 31.12.2016 **UPPTCL**:-Order for 02 nos. of ERS had been placed. **RRVPNL**:-Proposal pending with management. **HVPNL**:-In place of ERS, spare towers worth Rs. 2 Crores would be procured. **PTCUL**- Tendering under process

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Sl. No	Name of the Project/Decision taken	Meeting in which Approval was granted/ Decision was taken	Deliberations in 34thTCC and 38th NRPC meetings
			HPSEBL- exploring potential use of ERS in hilly state like H.P., vendors were invited but they did not turn up. **BBMB**:-Partner states had agreed to provide the ERS as and when required by BBMB.
13.	Reactor at Koteshwar		POWERGRID informed that reactor was ready for commissioning. But integration with SCADA as requested by THDCIL would take 2-3 months. In view of high voltage conditions expected in winter months, it was decided that the reactor be commissioned immediately and SCADA integration may be taken up at the earliest.

B.13 Reactive compensation at 220 kV level

TCC Deliberation

B.13.1 Member Secretary NRPC stated that the proposal for installation of bus reactors at 12 nos. 400 kV and 17 nos. 220 kV sub-stations was discussed in the 29th meeting of NRPC held on 13th September 2013. After deliberations, NRPC had approved installation of reactors at 400 kV sub-stations of POWERGRID and RVPNL. As regards 220kV bus reactors, it was decided that the requirement would be firmed up in consultation with the States in separate meetings. Thereafter, the issue of validation of the data and submission of report of the study for determination of requirement of reactive compensation at 220 kV level had been under discussion at NRPC forum.

B.13.2 He added that CTU had submitted report of the study, which is enclosed at Annex-IX of the agenda. In this report, following reactors were proposed:

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At 220 kV level:

S.No.	Bus Name	State	Reactors Proposed (MVAR)
1	Jind (PG)	Haryana	25
2	Fatehbad (PG)	Haryana	25
3	Chamera Pooling Stn.	Himachal Pradesh	2x25
4	Kishenpur	J&K	25
5	Jalandhar	Punjab	2x25
6	Nakodar	Punjab	2x25
7	Amritsar	Punjab	25
8	Makhu	Punjab	25
9	Dhuri	Punjab	25
10	Akal	Rajasthan	25
11	Suratgarh	Rajasthan	2x25
12	Bikaner	Rajasthan	2x25
13	Barmer	Rajasthan	25

At 400 kV level:

S.No.	Bus Name	State	Reactors Proposed (MVAR)
1	Mandola(PG)	DELHI	125
2	Hissar(PG)	Haryana	125
3	Kala Amb	Himachal Pradesh	125
4	Chamera Pooling Stn. (PG)	Himachal Pradesh	125
5	Kishenpur(PG)	J&K	125
6	Nakodar	Punjab	125
7	Jullandhar(PG)	Punjab	125
8	Moga(PG)	Punjab	125
9	Dhuri	Punjab	125
10	Patiala(PG)	Punjab	125
11	Ludhiana(PG)	Punjab	125
12	Ajmer(PG)	Rajasthan	125
13	Merta	Rajasthan	125
14	Ratangarh	Rajasthan	125
15	Chittorgarh(PG)	Rajasthan	125
16	Suratgarh(PG)	Rajasthan	125
17	Parichha	UP	125
18	Allahabad(PG)	UP	125
19	Mainpuri	UP	125
20	Unnao	UP	125
21	Gonda	UP	125
22	Meerut(PG)	UP	125

23	Kashipur	Uttrakhand	125
24	Srinagar	Uttrakhand	125

B.13.3 Member Secretary, NRPC further stated that the matter was deliberated in the 128th OCC meeting held on 17th October 2016. In the OCC meeting, representative of NRLDC had noted that at some locations, reactors were recommended at 220 kV level as well as at 400 kV. He suggested that for efficient implementation, reactors at 400 kV side only at such locations may be considered. With this observation, the proposal was recommended by OCC for approval of TCC/NRPC.

B.13.4 Representative of POWERGRID stated that reactors at both levels would be necessary for better results.

B.13.5 Representative of DTL stated that some locations of Delhi were not included in the study. He stated that study needs to be reviewed for Delhi. POWERGRID agreed for the same.

B.13.6 TCC accepted the report with the observation that study for Delhi system would be reviewed and recommended for approval of NRPC.

NRPC Deliberation

NRPC approved the recommendation of the TCC.

B.14 Replacement of porcelain insulator with Polymer and Cleaning of Insulators in Northern Region

TCC Deliberation

B.14.1 Member Secretary, NRPC stated that the conventional porcelain insulators on transmission lines in Northern Region were prone to flashover, often resulting in tripping of the line during fog. This phenomenon was particularly seen in area with significant pollution. To avoid tripping of the lines conventional insulators were being replaced with polymer insulators on transmission lines falling in vulnerable areas. The vulnerable stretches, where replacement of insulators had not been done, were cleaned prior to onset of winter and sometimes again during winter to wipe out deposited pollutants. The matter is closely monitored at NRPC and NRPC Secretariat convenes periodic meetings on this issue prior to and during winter.

B.14.2 He informed that in this context, certain decisions on the above issue were taken in the 30th NRPC meeting held in April 2014.

B.14.3 It was informed that a meeting on the above issue to review the preparedness for ensuing winter season was held on 6th October 2016 at NRPC, New Delhi. Following issues had emerged/ decisions were taken during the meeting:

(i) All the transmission lines in plain area were not being built with polymer

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insulators.

(ii) RRVPNL had no plan for cleaning of insulators. It could not be confirmed that some STUs, which carry out cleaning work through Contractors, had placed the order for the same. It was also decided that in case orders were not expected to be placed soon, conventional insulators in critical stretches should be got cleaned departmentally.

(iii) A map indicating category wise polluted area in Northern Region coming out of the pollution mapping carried out by CPRI had been uploaded on NRPC website (http://www.nrpc.gov.in/ reports/ other /Pollution Area.pdf). Transmission Utilities should refer to this map coupled with area with fog to identify critical stretches where replacement/ cleaning of conventional insulators should be carried out.

(iv) Another way of identifying the stretches where replacement/ cleaning of conventional insulators should be carried out is to analyze fog related trippings during past winter seasons.

(v) It was agreed that the work of insulator replacement and insulator cleaning identified for this winter would be carried out prior to 15.12.2016.

(vi) Cleaning of Insulators within the sub-station/switchyard also becomes important, if insulators on lines emanating from this sub-station/switchyard have been replaced with polymer insulators as the conventional insulators in the sub-station now become susceptible to tripping. It was agreed that utilities would explore options like cleaning of insulators with DM water, application of silicon grease and RTV silicone rubber coating.

(vii) It was agreed that transmission utilities would carry out patrolling to identify area where insulators were having pollution deposits and arrange for cleaning of the prone insulators.

B.14.4 TCC members agreed with the decisions taken in the review meeting held on 06th October 2016.

B.14.5 TCC expressed concerns regarding non-awarding of the work for insulator cleaning and replacement by some utilities and advised all utilities to complete the work at the earliest.

NRPC Deliberation

NRPC noted the deliberation of the TCC.

B.15 Capacity Building Programmes / Workshops etc conducted by NRPC

TCC Deliberation

B.15.1 Member Secretary NRPC stated that in the 35th NRPC meeting held in July 2015, while discussing the issue of reimbursement of expenditure of NRPC

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Sectt. for the year 2015-16, it was suggested that rather than reducing the contribution from each member, the contribution should be kept at same level and additional fund could be used for arranging capacity building programmes, workshops, brainstorming sessions. Accordingly, following programmes were organized by NRPC Secretariat:

(i) Symposium on "Load Forecasting for Operational Planning" on 5th August 2016.

(ii) Tutorial on Power System Oscillations and PSS Tuning on 7th October 2016

B.15.2 Member Secretary, NRPC further stated that one 5-day training programme namely "Basic Training on Protection System for Protection System Engineers (Level 2)" is proposed to be conducted in November 2016 through POWERGRID. This programme would be in accordance with the report of the Group Constituted for suggesting measures for the improvement in protection system among the utilities of Northern Region as approved in item B.1 of the agenda. He indicated that estimated cost for the training programme would be around Rs. 15,000/- per person per day. The expenditure on this account would be met from NRPC Fund as decided in 35th NRPC meeting held in July 2015.

B.15.3 Member Secretary, NRPC also mentioned that a training programme on maintenance aspects of OPGW would be planned to be conducted through POWERGRID in accordance with decision taken in the 33rd TCC/37th NRPC meeting held in March 2016.

B.15.4 TCC recommended the above proposals of training for approval of NRPC.

NRPC Deliberation

Members appreciated the work being done towards the capacity building and concurred with the recommendation of TCC to meet the expenditure from NRPC Fund for training programme on protection and maintenance aspects of OPGW being conducted through POWERGRID.

B.16 Estimation of Unrestricted demand and energy requirement for reporting in Power Supply Position

TCC Deliberation

B.16.1 Member Secretary, NRPC stated that SLDCs were furnishing monthly data in format 28 and 29 for provisional and final Power Supply Position (PSP), respectively. The supply of this data as per format 28 and 29 is a statutory obligation under the provisions of CEA (Furnishing of Statistics, Returns and Information) Regulations, 2007.

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B.16.2 He further stated that in the data received from SLDCs, it had been observed that some of the states were showing restricted demand data, while the format clearly required that unrestricted energy requirement (in MU) and unrestricted peak demand (in MW) was to be furnished. Furnishing restricted energy requirement and peak demand amount to violation of statutory provisions of CEA Regulations.

B.16.3 TCC expressed concern over non-compliance of statutory obligations by some constituent states. TCC advised all the SLDCs to submit the power supply position data correctly and as per CEA regulations.

B.16.4 Member Secretary, NRPC, further stated that it had been observed that many of the states were showing Zero shortages in the data being furnished to NRPC secretariat in above mentioned formats, whereas in the data available from other sources it was evident that power cuts/restriction had been imposed. It was also noted during deliberations in OCC meetings that in some of the states, there were restrictions on supply hours for some particular class of consumers such as "Rural Domestic", but the same was neither reported nor accounted for while calculating unrestricted energy requirement or unrestricted demand.

B.16.5 TCC advised all SLDCs to furnish correct data so that there is no anomaly in data available at various platforms.

NRPC Deliberation

Members noted the deliberations in the TCC. All the members agreed to provide correct information in requisite format.

B.17 Revision of Declared Capacity of NJHPS on 15.07.2016 and 09.08.2016

TCC Deliberation

B.17.1 Representative of SJVN stated that Nathpa-Jhakri Power Station (6X250 MW) is being operated as a run–of–river with pondage type (minimum 3 hours of daily peaking) generating stations in line with CERC order.

B.17.2 During high inflow season, Nathpa-Jhakri Hydro Power Station (NJHPS) was operating continuously round the clock at full load capacity including over load capability. In case of an emergency condition only viz. Force Outage or Miscellaneous Outage (High silt/Reservoir Flushing/Grid constraints), NJHPS was forced to shut down its generating unit(s) with prior intimation to NRLDC.

B.17.3 He added that the phenomenon of high silt occurred every year, when NJHPS units were to bring under shut down due to persistent high silt and opening of silt flushing gates/reservoir flushing by upstream project i.e. KWHPS. This situation of persistent high silt was beyond the control of Generator, which forced NJHPS to shut down its unit(s), inspite of its availability, to prevent an

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imminent damage to a costly equipment and entering silted water in the Tunnel beyond permissible limit. During such circumstances, sometimes NJHPS operated on partial /full load during the day, when there was a decreasing trend of silt in the river upto the permissible limit.

B.17.4 Regarding the specific issue SJVNL representative explained that on 14.07.2016, NJHPS was operating at full load capacity including over load capability till 22:20 Hrs. and thereafter unit(s) were gradually shut down due to persistent high silt. On reduction of silt level around 05:15 Hrs. on 15.07.2016, NJHPS units were synchronized with grid one by one and plant could operate on full load including overload capability for 1:45 Hrs. and partial load for 2 Hrs. Thereafter on the same day, units of NJHPS were again shut down gradually due to increasing trend of silt level beyond permissible limit. Similar incident had happened again on 09.08.2016.

B.17.5 It was submitted that Declared Capacity (DC) of Nathpa Jhakri Hydro Power Station (NJHPS) had been reduced to Zero (0) on 15.07.16 and 09.08.16, despite of the fact that all the units were available for 24 Hrs. and able to operate on full load including overload capacity.

B.17.6 He quoted relevant provisions of CERC Regulations namely sub-regulation (15) of Regulation 3(Definitions) of CERC (Terms and Conditions of Tariff) Regulations, 2014, Regulation 31 (Computation and Payment of capacity Charge and Energy charge for Hydro Generating Stations) of CERC (Terms and Conditions of Tariff) Regulations, 2014, Regulation 6.4(17) of CERC(Indian Electricity Grid Code) Regulations, 2010, and Regulation 6.5(12) of CERC(Indian Electricity Grid Code) Regulations, 2010.

B.17.7 SJVNL representative stated that due to continued high silt at upstream of Nathpa and shutdown/reservoir flushing/ opening of silt flushing tunnel of KWHEP on 15.07.2016 and 09.08.2016, SJVN was bound to stop all the machines under an emergency condition, as it was beyond the norms to keep the plant under generation. SJVN tried their best by reducing the load gradually, with prior intimation to NRLDC. He requested that NJHPS may be allowed to recover full DC on 15.07.2016 and 09.08.2016 in line with aforesaid CERC tariff as well as Indian Electricity Grid Code Regulations.

B.17.8 Member Secretary NRPC informed that the issue was discussed in 127th OCC meeting held on 23rd September, 2016. In the meeting representative of NRLDC stated that as the generating station was not available for peaking, DC was not allowed. This action was taken as per relevant CERC regulations. Since the matter was related to interpretation of CERC regulation, it was opined that OCC may not be the appropriate forum to resolve the issue.OCC had decided that as NRLDC had not agreed to interpretation of SJVNL, the latter may opt for alternative suitable remedy under law.

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B.17.9 TCC members were of the opinion that the matter was related to interpretation of CERC regulations which cannot be decided in this forum.

B.17.10 Representative of SJVNL stated that as the matter could not be resolved in this forum, they would approach CERC.

NRPC Deliberation

NRPC concurred with the decision of the TCC.

COMMERCIAL ISSUES

C.1 Mechanism for Compensation for Degradation of Heat Rate, Aux Consumption and Secondary Fuel Oil Consumption, due to Part Load Operation and Multiple Start/Stop of Units(AG)

TCC Deliberation

C.1.1 Member Secretary, NRPC stated that Central Electricity Regulatory Commission, on 6th April 2016,notified,Central Electricity Regulatory Commission (IEGC) (Fourth Amendment) Regulations, 2016, which inter-alia contains provisions relating to Technical Minimum Schedule for operation of Central Generating Stations and Inter-State Generating Stations, whose tariff is determined or adopted by the Central Commission. These Regulations further provide for compensation to Generating Stations for degradation of Heat Rate, Auxiliary Consumption and Secondary Fuel Oil consumption due to part load operation and multiple start-ups of units. Sub-regulation 7 of Regulation 6.3 B of IEGC mandates RPCs to work out a mechanism for compensation for station heat rate and auxiliary energy consumption for low unit loading and for secondary fuel oil consumption for additional start-ups in excess of 7 start-ups.

C.1.2 Member Secretary, NRPC further stated that in accordance with the IEGC (Fourth Amendment) Regulations, 2016, NRPC Secretariat had prepared draft mechanism for compensation to Generating Stations for degradation of Heat Rate, Auxiliary Consumption and Secondary Fuel Oil consumption due to part load operation and multiple start-ups of units.

C.1.3 He further stated that the said draft was deliberated in the 31st Commercial Sub-Committee (CSC) meeting held on 04th July, 2016 and 125th OCC meeting held on 22nd July, 2016. Accordingly, the draft was modified by incorporating the views of stakeholders. The, modified draft was again deliberated in the 127th OCC meeting held on 23.09.2016 wherein representative of NTPC sought time for offering comment on revised draft. Other members had no comment to offer on revised draft. In the 128th OCC meeting held on 17.10.2016, representative of NTPC had requested for calculation of block wise compensation.

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C.1.4 In the TCC meeting, NTPC agreed for the draft mechanism except that the calculation should be done on the block wise basis instead of monthly basis. All other members had agreed to draft mechanism. Member Secretary, NRPC informed the members that CERC had called a meeting on 27th Oct 2016 to discuss the compensation mechanism with a view to bring uniformity in methodology prepared by all the RPCs. In light of the above discussion, Member Secretary, NRPC opined that final decision over this issue would be taken in the meeting with CERC, scheduled to be held on 27th Oct 2016.

C.1.5 After deliberations it was decided that the stakeholders may submit the comments on the detailed mechanism for compensation attached with agenda item. The revised mechanism after considering the comments from stakeholders would be put up to TCC/NRPC in the next meeting.

NRPC Deliberation

Members took note of the deliberations and concurred to the decisions taken in the TCC meeting.

C.2 Default in payment of outstanding dues and surcharge by beneficiaries

TCC Deliberation

C.2.1 Representative of NHPC stated that PDD J&K, BYPL, PSPCL, UPPCL and Rajasthan Discoms had outstanding dues for more than 60 days. He requested beneficiaries for early liquidation.

C.2.2 Representative of PDD J&K stated that they had paid Rs. 690.84 Cr. to NHPC in Oct,16 under UDAY(Ujwal Discom Assurance Yojana) Scheme.

C.2.3 As the representative of Rajasthan Discoms and UPPCL were not present in the meeting and BYPL is not the member of NRPC in the current year, NHPC was advised to take up with them directly.

C.2.4 TCC requested beneficiaries to liquidate the outstanding dues expeditiously.

NRPC Deliberation

Members noted the TCC deliberations.

C.3 Opening of Letter of Credit (LC)

TCC Deliberation

C.3.1 Representative of NHPC stated that LC opened by BRPL expired on 31.03.2015. BRPL did not open LC of requisite amount of ₹ 26.58 Crs. Also, LC of ₹ 18 Crs. opened by UPPCL expired on 30.04.2016. As on the date LC of only ₹ 100 Crs was available against requisite value of ₹ 115.77 Crs.

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Representative of NHPC requested UPPCL to open the LC of balance amount.

C.3.2 TCC requested UPPCL and BRPL to open the LC at the earliest.

NRPC Deliberation

Members noted the TCC deliberations.

C.4 Issues of Reconciliation

TCC Deliberation

C.4.1 Representative of NHPC informed that HPPC, Haryana and UPCL had not signed the reconciliation statements of energy accounts since 1st quarter of FY 2015-16 and 3rd quarter of FY 2015-16, respectively.

C.4.2 Representative of HPPC agreed to reconcile the statement at the earliest. Representative of UPCL was not present in the meeting and NHPC was advised to take up with them directly.

NRPC Deliberation

Members noted the TCC deliberations.

C.5 Signing of PPA of Tawang HE Projects Stage-I & II

TCC Deliberation

C.5.1 Representative of NHPC informed that the beneficiaries had been requested to convey their consent for signing of PPA of Tawang HE Project, Stage I (600 MW) & Stage II (800MW). All beneficiaries of Northern Region except UPCL did not sent their consent for signing the PPA. Representative of NHPC requested beneficiaries to give their consent for signing the PPA at the earliest.

C.5.2 Representatives" from Punjab and Himachal Pradesh stated that they had already conveyed their decision. Representative of BRPL, Delhi stated that they were not interested in signing the PPA.

NRPC Deliberation

Members noted the TCC deliberations.

C.6 Extension of PPAs/BPSAs

TCC Deliberation

C.6.1 Representative of NHPC requested the beneficiaries to convey their consent for extension of PPA/BPSA on the existing terms and conditions for a period

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of 35 years from the date of COD of the respective project. The list of beneficiaries along with the power station due for extension of PPA/BPSA was attached with agenda note of this meeting.

C.6.2 TCC requested the beneficiaries concerned to convey their consent for early signing the PPAs/ BPSA.

NRPC Deliberation

Members noted the TCC deliberations.

C.7 Surrender of power from selected power stations

TCC Deliberation

C.7.1 Representative of NHPC withdrew this agenda item as the matter was sub-judice under Hon"ble CERC.

NRPC Deliberation

Members noted the TCC deliberations.

C.8 Request for immediate release of THDCIL's payments by its beneficiaries

C.8.1 Representative of THDCIL stated that despite their sincere efforts, BSES Delhi Discoms, UPPCL (UP), PDD (J&K) had been making part payments and much beyond the due dates. BSES Yamuna Power Ltd. had not made any payment after 07.10.2015. .PDD, J&K has also not made any payment after 27.08.2015. He requested the aforesaid beneficiaries for early liquidation of dues.

C.8.2 Representative of THDCIL further stated that PDD, J&K had not opened the LC of requisite amount for FY 2016-17, even after repeated reminders. TCC requested PDD, J&K to open the same at the earliest.

C.8.3 Representative of PDD J&K stated that they had paid Rs.88.27 Cr. to THDCIL in Oct, 16 under UDAY (Ujwal Discom Assurance Yojana) Scheme.

C.8.4 Representative of BRPL stated that they had been making current payment. TCC requested BRPL to also liquidate the past outstanding dues at the earliest to avoid major financial repercussion/obligation accumulating due to huge outstanding dues.

C.8.5 Representative of HPSEBL stated that as per their records payment had already been made and should be reconciled. The amount due after reconciliation, if any, would be paid.

C.8.6 TCC advised HPSEBL to reconcile the records and make payment of dues, if any, at the earliest,

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C.8.7 Since representative of Rajasthan Discoms and UPPCL were not present and BYPL is not a member of NRPC in the current year, THDCIL was advised to take up with them directly.

NRPC Deliberation

Members noted the TCC deliberations.

C.9 Intimation for Payment of Energy and other bills

TCC Deliberation

C.9.1 Representative of THDCIL stated that despite the decision taken in the 33rd TCC /37th NRPC Meetings, the beneficiaries except TPDDL, released the payments without informing the details such as the bill against which the payments had been released etc. He requested beneficiaries to intimate the details immediately after release of any payment as the same is necessary for reconciling the amount received. This will also help in eliminating any dispute in mutual business interest. THDCIL representative stated that in absence of any detail for payment made by the utilities, THDCIL would adjust the payment for the oldest outstanding payment by the respective utility.

C.9.2 TCC suggested that bills could be settled on the basis of first in first out as already being followed by other GENCOs.

NRPC Deliberation

Members noted the TCC deliberations.

C.10 Payments through RTGS

TCC Deliberation

C.10.1 Representative of THDCIL stated that despite of regular follow-up for payments through RTGS only, HPPC, Haryana was still making payments through cheques.

C.10.2 Representative of HPPC agreed to resolve this issue at the earliest.

NRPC Deliberation

Members noted the TCC deliberations.

C.11 Delay in release of payment of SJVN bills by the beneficiaries of NJHPS & RHPS

TCC Deliberation

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C.11.1 Representative of SJVN stated that an amount of Rs. 1401.81Crorewas outstanding for a period more than sixty (60) days from some of the beneficiaries of NJHPS & RHPS. The beneficiaries who had not cleared their outstanding dues were Govt. of HP, HPSEB, PDD J&K, UPPCL, BRPL, BYPL, UPPCL, Rajasthan Discoms and DTL. It was requested that NRPC may intervene in liquidation of outstanding dues from the above defaulting entities as it was affecting the cash flow of SJVN and it was jeopardising the growth of the organisation.

C.11.2 Representative of PDD, J&K stated that Govt. of J&K had paid Rs. 105.34 Cr. in Oct.,2016 to SJVNL under UDAY(Ujwal Discom Assurance Yojana) Scheme.

C.11.3 Representative of HPSEBL stated that they had already made payment of Rs. 235 Crore and balance amount, if any, would be paid in due course of time. He further stated that the outstanding amount against GOHP needs to be reconciled. Representatives" of SJVN and HPSEBL agreed to reconcile the same.

C.11.4 Since representatives of Rajasthan Discoms and UPPCL were not present in the meeting and BYPL is not a member of NRPC in the current year, SJVNL was advised to take up with them directly.

C.11.5 TCC advised other members having outstanding dues towards SJVNL to liquidate the same at the earliest.

NRPC Deliberation

Members noted the TCC deliberations.

C.12 Non- Opening of Letter of Credit by certain beneficiaries for power supplied from NJHPS

TCC Deliberation

C.12.1 Representative of SJVN stated that as per provisions of CERC regulations and terms and conditions of power purchase agreement, beneficiaries were required to submit a Letter of Credit (LC) before start of the relevant financial year. However, PDD J&K, BYPL, BRPL and GOHP had not submitted the LC of requisite amount. He requested for opening of LC at the earliest.

C.12.2 Representative of BRPL stated that they were facing some difficulty with their bank in opening the LC. The same would be opened as soon as the issue gets resolved.

C.12.3 TCC was of the opinion that since allocation of Government of Himachal Pradesh (GoHP) had been assigned to HPSEBL, HPSEBL may open the LC. HPSEBL agreed for the same.

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C.12.4 PDD J&K was requested to open the LC of requisite amount at the earliest. Further, as BYPL is not a member of NRPC in the current year, SJVNL was advised to take up with them directly.

NRPC Deliberation

Members noted the TCC deliberations.

C.13 Non Opening of Letter of Credit by certain beneficiaries for power supplied from RHPS

C.13.1 Representative of SJVN stated that GoHP, HPSEB, PDD J&K, UPPCL and UHBVN were yet to submit their LC for the FY 2016-17. Here quested these beneficiaries to open the LC as per CERC regulation and PPA terms.

C.13.2 Beneficiarieswere requested to Open requisite LC at the earliest. Further, as representatives of UPPCL were not present, SJVN was advised to take up with them directly.

NRPC Deliberation

Members noted the TCC deliberations.

C.14 Payment of energy bills of NJHPS and RHPS through electronic modes

TCC Deliberation

C.14.1 Representative of SJVN stated that in 33rd TCC & 37th NRPC meeting of NRPC, the matter regarding releasing of payment through electronic modes by the beneficiaries to generating companies was discussed, wherein it was decided that all the payments by the beneficiaries would be made through electronic modes i.e. RTGS/NEFT. Representative of Haryana Power Purchase Centre (HPPC) agreed to look into the matter. Representative of SJVN further stated that, all the beneficiaries of SJVN were making payment through electronic modes except HPPC.

C.14.2 TCC requested HPPC to release all future payments though electronic mode only. Representative of HPPC agreed to resolve this issue at the earliest.

NRPC Deliberation

Members noted the TCC deliberations.

C.15 Consent for purchase of power from Naitwar Mori Hydro Electric Project (NMHEP), 60 MW (2X30 MW) in Uttarakhand

TCC Deliberation

(मनोज सिंह)

C.15.1 Representative of SJVN informed that Government of Uttarakhand (GoUK) has allotted Naitwar Mori Hydro Electric Project (2X30 MW) on River Tons (a tributary of river Yamuna) in district Uttarkashi in the state of Uttarakhand to SJVN Ltd. A Memorandum of Understanding (MoU) for execution of Naitwar Mori HEP was signed with the Govt. of Uttarakhand on 21st November, 2005.

C.15.2 He further stated that Naitwar Mori Hydro Electric Project (2X30 MW) is a run–of- river type scheme and is designed to generate Annually 265.50 MUs in 90 % dependable year and the commissioning of the project was expected in August, 2020.

C.15.3 As per the condition of Memorandum of Understanding (MoU), 12% of the net energy would be given to Government of Uttarakhand (GoUK) free of cost. SJVN would be in a position to offer the balance power being generated from project to interested states / UTs of the Northern Region as per the prevalent policies of Govt. of India issued from time to time.

C.15.4 The estimated project cost is Rs 624.11 Cr at April, 2016 price level. The levelized tariff of the generated power is Rs 6.14 per kwh based on above mentioned project cost and the final tariff would be calculated by the appropriate Regulatory Commission.

C.15.5 Representative of SJVN requested the members to convey their consent for purchase of power, indicating the quantum of power required from the aforesaid Hydro project.

C.15.6 TCC requested the members concerned to expedite their response for purchase of power from Naitwar Mori Hydro Electric Project (NMHEP).

NRPC Deliberation

Members noted the TCC deliberations.

C.16 NRPC certificate for additional RoE for Bhiwani - Hissar 400 kV D/C Line under NRSS XXV

TCC Deliberation

C.16.1 Member Secretary, NRPC informed that POWERGRID had requested certificate regarding benefit of early commissioning of Bhiwani - Hissar 400 kV D/C Line along with Bays at Bhiwani & Hissar under NRSS XXV. Such certificate is required from RPC under sub-regulation 24(2) (iii) of CERC (Terms and Conditions of Tariff) Regulations, 2014.The proposal was discussed in the 123rd OCC meeting. Members were of the view that in accordance with the provisions in the Regulation, the Transmission Licensee was required to approach the concerned RPC forum for the requisite certification before commissioning of the element.

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C.16.2In the OCC meeting mentioned above, representative of NRLDC had stated that this line had strengthened the link between Bhiwani (PG)-Hissar. He had also informed that Bhiwani (PG) had become important sub-station as it is one of main sub-station for further evacuation of power from HVDC Mundra-Mahendragarh as well as from 765 kV system. He opined that prior to commissioning of this line, 400 kV Bhiwani -Hissar S/C and 400 kV Bhiwani(PG)- Bhiwani (BBMB)- Hissar were the connections from the 400kV Bhiwani (PG) towards Punjab system. These lines were optimally loaded. Thus, commissioning of this line had helped in enhancing the connectivity of Bhiwani (PG) system as well as enhancing the reliability of the area. However, NRLDC was also of the view that in future such decisions should be taken based on data/studies. Accordingly, OCC had agreed as a special case to certify that commissioning of Bhiwani - Hissar 400 kV D/C Line has benefited the system operation in the Northern Regional Grid.

C.16.3It was also informed that POWERGRID had approached NRPC Secretariat for issuance of similar certificate for 400KV Patiala-Panchkula Transmission Line subsequent to Date of Commercial Operation of the line. The proposal of POWERGRID was not considered in the spirit of the deliberations in the 123rd OCC meeting.

C.16.4POWERGRID had requested for certification for this line from RPC as a special case.

C.16.5After detailed deliberation over this issue, TCC agreed, as a special case, to issue certification that commissioning of 400 kV Bhiwani-Hisar and Patiala-Panchkula Lines has benefited the system operation and recommended for further approval by NRPC. TCC opined that such cases would not be entertained in future and advised all Inter-state transmission licensees including POWERGRID to approach NRPC for such certification before Date of Commercial Operation (DoCO) of transmission element in accordance with the relevant regulatory provisions.

NRPC Deliberation

Member Secretary, NRPC briefed the members about the deliberations and decisions taken in the TCC meeting. NRPC concurred with the decisions taken by TCC.

Table Agenda

C.17 Status of LC against Deviation Charges delayed payment

TCC Deliberation

C.17.1Representative of NRLDC informed about the details of LC to be opened by NR entities for the FY 2016-17 as on 1st Oct 2016, as given below:

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Name of NR Pool members	LC Amount (Rs. in Lakh.)	Status	No. of defaults in Deviation Payment in 2015-16	No. of defaults in Deviation Payment in 2016-17
UPPCL,UP	1402.82	LC not opened	50	21
UPCL, UTTARAKHAND	307.31	LC not opened	12	2
HPSEB, Himachal	607.45	LC not opened	48	20
PDD,J&K	615.36	LC not opened	25	14
EPPL	18.81	LC not opened	38	19
GREENKO, Budhil	74.47	LC not opened	20	15
Punjab	865.06	LC not opened	28	10
DTL	179.57	LC not opened	2	
HBPCL (KWHEP)	39.02	LC not opened	5	
UT Chandigarh	58.46	LC not opened	13	
Rajasthan	441.11	LC not opened	4	2
Railway	69.56	LC not opened	1	
SJVNL	63.67	LC not opened	1	
APCL	68.41	LC not opened	5	2
Haryana	628.48	LC not opened	1	
BBMB	19.02	LC not opened		1

C.17.2 Defaulting entities were requested to open the LC against Deviation Charges as per the Regulations of CERC.

NRPC Deliberation

Members noted the TCC deliberations.

C.18 Implementation of ABT in BBMB System

TCC Deliberation

C.18.1 Representative of NRLDC stated that as per CERC order in Petition No. 251/GT/2013, BBMB had to commence the scheduling of power from it's generating units/transmission assets as per ABT from 01.06.2016.However, there were several issues related to accounting, metering and scheduling of the BBMB power. In this regard, meetings were held with all stakeholders to discuss the modalities regarding the issue.

C.18.2 Further, representative of NRLDC flagged the various issues viz. NFL registration, Small feeder data as well as water diversion issue. Representative of BBMB informed that these issues were being taken care of

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He further added that National Fertiliser Limited (NFL) was taking action independently on the issues related to it.

NRPC Deliberation

Members noted the TCC deliberations.

C.19 Congestion Charges Status

TCC Deliberation

C.19.1 Representative of NRLDCinformed that the outstanding amount against the entities as on 1st Oct 2016 was indicated as below:

S N.	CONSTITUENTS	Outstanding Amount (In Rs. Lakh)
1.	U.P.	130.31
2.	J&K	110.57
3.	HARYANA	65.10
4.	EPPL (MALLANA-II)	22.68
5.	GREENCO BUDHIL	3.49
6.	DELHI	2.26
7.	RAILWAY	0.09

C.19.2 Defaulting entities were requested to liquidate the outstanding amount at the earliest.

NRPC Deliberation

Members noted the TCC deliberations.

C.20 Reconciliation of Deviation & RE Account/ NRLDC Fee and charges

TCC Deliberation

C.20.1 Representative of NRLDC stated that they had sent the reconciliation statements sent Quarterly for Deviation Charges, RE Account, NRLDC Fee and charges. The utilities concerned were requested to verify the NRLDC Fee & Charges Reconciliation statement at the earliest. In case non receipt of any communication, it would be presumed that statement stands reconciled.

C.20.2 TCC noted the information.

NRPC Deliberation

Members noted the TCC deliberations.

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C.21 TDS against STOA Charges

TCC Deliberation

C.21.1 NRLDC representative stated that as per CERC regulation on Open Access in inter-State Transmission, RLDCs were providing single window clearance to the applicants and collecting all payments on behalf of STUs, SLDCs RLDCs and CTU. The charges on short term open access comprises PoC Charges, Application amount, RLDC Operating Charges, SLDC Operating Charges and STU Charges

C.21.2 He informed that the applicants were deducting the TDS on the charges being paid for Open Access under two PAN numbers i.e. POWERGRID PAN for PoC charges and POSOCO PAN for all other charges. He further stated that in order to further streamline the process, applicants would now be requested to deduct the TDS towards SLDC Operating Charges and STU Charges to the respective PAN nos. of the STUs and SLDCs. In view of this, it was requested to provide the PAN Number of STU &SLDC so that applicants may be advised to use the PAN Number of concerned STU/SLDC for deduction of TDS against STU/SLDC charges. He mentioned that NRLDC vide its letter POSOCO/2016/1292-1308 dated 28th Aug 2016 requested to provide the PAN details though the same was awaited from the concerned.

C.21.3 TCC advised the members to provide the PAN Number of concerned STU/SLDC for deduction of TDS against STU/SLDC charges, as requested by NRLDC.

NRPC Deliberation

Members noted the TCC deliberations.

C.22 Status of Ancillary Services:

TCC Deliberation

C.22.1 Representative of NRLDC stated that subsequent to approval of detailed procedure by CERC, Ancillary services had been implemented w.e.f. 11.04.2016. The Status given was as below:

(All fig in Rs. Cr.)

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Week	Surplus in DSM A/C(Addl+Cap) (A)	RRAS Billed		
		Regulation Up (B)	Regulation Down (C)	Net (D)=(B)-(C)
Week-3(11.04.16-17.04.16)	10.10	0.23	0.00	0.23
Week-4(18.04.16-24.04.16)	8.93	0.26	0.00	0.26
Week-5(25.04.16-01.05.16)	10.59	1.63	0.00	1.63
Week-6(02.05.16-08.05.16)	9.56	1.30	0.11	1.19
Week-7(09.05.16-15.05.16)	13.51	1.65	0.23	1.42
Week-8(16.05.16-22.05.16)	10.67	0.72	0.65	0.08
Week-9(23.05.16-29.05.16)	9.89	2.86	0.17	2.69
Week-10(30.05.16-05.06.16)	15.28	3.92	0.00	3.92
Week-11(06.06.16-12.06.16)	15.19	2.05	0.12	1.93
Week-12(13.06.16-19.06.16)	13.59	2.22	0.00	2.22
Week-13(20.06.16-26.06.16)	13.98	4.24	0.26	3.98
Week-14(27.06.16-03.07.16)	18.86	6.37	0.21	6.16
Week-15(04.07.16-10.07.16)	15.98	7.86	0.47	7.39
Week-16(11.07.16-17.07.16)	11.85	14.77	0.42	14.35
Week-17(18.07.16-24.07.16)	9.05	14.59	0.09	14.50
Week-18(25.07.16-31.07.16)	10.11	11.90	0.44	11.45
Week-19(01.08.16-07.08.16)	12.09	4.82	1.28	3.54
Week-20(08.08.16-14.08.16)	12.28	12.69	0.07	12.63
Week-21(15.08.16-21.08.16)	10.78	8.69	1.59	7.10
Week-22(22.08.16-28.08.16)	10.96	52.10	0.02	52.08
Week-23(29.08.16-04.09.16)	7.95	18.18	0.31	17.87
Week-24(05.09.16-11.09.16)	9.58	48.15	0.03	48.13

C.22.2 Members noted the information

NRPC Deliberation

Members noted the TCC deliberations.

D. ITEMS FOR NRPC ONLY

D.1 Transmission proposals as agreed in 38th Standing Committee Meeting on Power System Planning of Northern Region held on 30/05/2016

D.1.1 WR- NR 765kV Inter-regional corridor

Providing a brief background, CTU representative stated that the total power transfer requirement to NR is likely to increase to 26500-27000 MW in next 4-5 years. Further, as power from generation projects in WR (particularly in Chhattisgarh) and in Odisha predominantly flows through WR-NR corridor, thus stressing this path of power flow. Accordingly, to relieve these constraints, an additional transmission corridor was agreed in NR & WR Standing Committee meetings, which comprise of:

- 765kV Vindhyachal Pooling Station – Varanasi D/c Line
- 330 MVAr line reactor in both lines at Varanasi end

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Members agreed to the same.

D.1.2 <u>400kV bays at Bhinmal and Sikar substations under ISTS</u>

CTU representative stated that during the 30th Standing Committee Meeting of NR, 2 nos. of 400kV bays each at Bhinmal and Sikar substations were agreed under ISTS for integration of transmission system of RVPN associated with renewable projects. The said bays were for termination of 400kV D/c lines being constructed by RVPN. However, time frame for completion of bays was not firmed up during the 30th SCM of Transmission Planning of NR. Subsequently, RVPN vide letter dated 13/04/2016 intimated the time frame for bays. The matter was again discussed in 38th SCM held on 30/05/2016, wherein following was agreed under ISTS:

- 2 nos. of 400kV line bays at Bhinmal (PG) Substation
- 2 nos. of 400kV line bays at Sikar (PG) Substation along with 2 nos. of 50 MVAr line reactors

CTU representative further informed that award of work for aforesaid bays is expected by Feb."17 with a completion schedule of June"18.

Members agreed to the above.

D.1.3 <u>Transmission system for Ultra Mega Solar Parks in Fatehgarh, Distt. Jaisalmer Rajasthan</u>

CTU representative informed that M/s Adani Renewable Energy Park Rajasthan (AREPL) Ltd. has applied for connectivity (1000 MW) and Long Term Access (1000 MW) in ISTS with commissioning schedule of Dec"17 for its Ultra Mega Solar Power Park at Fatehgarh with target region as NR. To evacuate power from the Fatehgarh UMSPP, following transmission system was agreed in the 38th NR SCM:

- 765kV Fatehgarh Pooling Sub Station – Bhadla (PG) D/c line (initially to be operated at 400kV)
- Establishment of 400kV Pooling Station at Fatehgarh (with a provision to upgrade at 765kV level)
- 2 nos. of 400kV line bays at Fatehgarh Pooling Station
- 1X125 MVAr Bus Reactor at 400kV Fatehgarh Pooling Substation

Further, CTU representative mentioned that the system was discussed and agreed in the 36th Empowered committee meeting on transmission held on 26.07.16, wherein it was decided that scheme shall be implemented through TBCB route. It was also agreed that 2 nos. of 400kV line bays at Bhadla Pooling Station shall be provided by POWERGRID for termination of 765kV Fatehgarh Pooling Sub Station – Bhadla (PG) D/c line (initially to be operated at 400kV).

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Members agreed to the same.

D.1.4 Provision of 2 nos. of 765 kV bays at Ajmer (POWERGRID) and 2 nos. of 400 kV bays at Bikaner (POWERGRID) under ISTS for new intrastate interconnections to ISTS

CTU representative mentioned that Bhuj – Banaskantha – Chittorgarh – Ajmer – Bikaner – Moga 765 kV D/c line along with 765/400kV substations at Chittorgarh, Ajmer and Bikaner are being implemented under Green Energy Corridor. For interconnection of the intra-state system of Rajasthan with this Green Energy Corridor, RVPN has planned 765 kV D/c line from RVPN's 765/400kV Korna substation to Ajmer 765/400kV (PG) substation with 2x240 MVAr, 765kV switchable line reactors at Ajmer (PG) and Korna (RVPN) substations. The two nos. of 765kV line bays at Ajmer along with 2x240 MVAr, 765 kV switchable line reactors has been agreed to be implemented under ISTS in the 38th SCM of Power System Planning of NR held on 30/05/2016.

Further, CTU representative stated that in earlier Standing Committee Meeting of Transmission Planning of NR, LILO of one circuit of Bhadla (RRVPNL) – Bikaner(PG) 400kV D/c (Quad) line at Bikaner(PG) was agreed and currently is under implementation. To resolve the issue of unbalance loading of lines after LILO of 1stckt of Bhadla (RVPN) – Bikaner(PG) 400kV D/c (Quad) line at Bikaner(PG), LILO of the second circuit of Bhadla(RRVPNL) – Bikaner 400 kV D/c (Quad) line at Bikaner (PG) was agreed in 37th SCM of Power System Planning of NR. For LILO of second circuit, 2 nos. of 400 kV line bays at 765/400kV Bikaner S/s have been agreed to be provided under ISTS upon RVPNL request during the 38th SCM of Power System Planning of NR held on 30/05/2016.

Accordingly, following works are to be carried out under ISTS:

- 2 nos. of 765 kV bays at 765/400kV Ajmer S/s along with 2x240 MVAR, 765 kV switchable line reactors
- 2 nos. of 400 kV line bays at 765/400kV Bikaner (PG)

RVPN informed that abovementioned bays at Ajmer would be required by 2020-21. CTU requested RVPN to inform a firm date to take up the necessary activities for implementation.

Members agreed to the same.

D.1.5 Augmentation of Transformation Capacity at Raebareli & Sitarganj 220/132 kV substations

CTU representative stated that replacement of two nos. of 100MVA, 220/132kV ICTs by two nos. of 200MVA 220/132kV ICTs at 220/132kV Raebareli (PG) substation was in- principally agreed during the 37th Standing

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Committee meeting of Transmission Planning of NR held on 20/01/2016. Further, it has also been agreed that out of the two replaced transformers, one ICT may be installed at Sitarganj (PG) S/s and other may be used as a regional spare unit.

Accordingly, the scope of works under ISTS for the scheme is as follows:

- Two nos. of 100 MVA, 220/132 kV ICTs at Raebareli S/s to be replaced by two nos. of 200 MVA ICTs 220/132 kV ICTs.
- One of the two replaced 100 MVA, 220/132 kV ICTs at Raebareli S/s may be installed at Sitarganj S/s and the other may be used as regional spare.

Members agreed to the same

D.1.6 Provision of 2 nos. of 220 kV bays at Fatehpur and 1 220 kV bays at Roorkee under ISTS

CTU representative stated that during the 37th Standing Committee Meeting on Power System Planning of NR held on 20/01/2016, 2 nos. of 220kV baysat 765/400kV Fatehpur (PG) S/s under ISTS were agreed upon requestof UPPTCL for termination of 220kVFatehpur(PG) – Sarh (Kanpur) D/c line.

Similarly, during the 35th Standing committee meeting on Power System Planning of NR, 1 no. of 220kV bay at 400/220kV Roorkee(PG) S/s under ISTS has been agreed upon request of PTCUL for drawing power from Roorkee(PG) substation.

Members agreed to the same.

D.1.7 Transmission System associated with Kishenganga HEP

CTU representative stated that the scheme "Transmission System associated with Kishenganga HEP was agreed in 33rdStanding Committee on Power system Planning for Northern Region held on 23/12/2013 with following scope:

- Kiahenganga – Wagoora 220kV D/c line
- Kishenganga – Amargarh 220kV D/c line

CTU representative further stated that due to unrest in Kashmir, completion schedule of transmission system associated with Kishenganga HEP has been revised. The revised schedule is as follows:

- Kishenganga – Wagoora 220kV D/c line - (Mar."18)
- Kishenganga – Amargarh 220kV D/c line – (July"17)

Member Secretary NRPC enquired from NHPC about commissioning schedule of their generation project. NHPC representative informed that presently commissioning of Kishenganga is envisaged in July 2017.

Members noted the same.

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D.1.8 CTU representative stated that the applications mentioned in Annex-III &IV have been granted LTA/Connectivity in the recent past by CTU as per the Detailed Procedures of Central Transmission Utility of the CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009. Members noted that same.

D.2 Status of UI charges:

D.2.1 Member Secretary, NRPC stated that as per the information received from NRLDC, the status of payment of UI charges payable/Receivable by the utilities as on 30.09.2016is as given below:.

(Rs. in Lakh)

		Principal UI Charges	**Interest on UI charges**	**Principal + Interest**
S.No	**Utility Name**	**Net UI Payable(+) or Receivable(-)**	**Net UI Interest Payable(+) or Receivable(-)**	**Net Amount Payable (+) or Receivable(-)**
		1	2	3=1+2
1	Jammu and Kashmir	0.30296	0.00000	0.30296
2	Uttar Pradesh	33593.6208	3531.85195	37125.47275#
3	Uttarakhand	0.00000	0.03544	0.03544
4	EPPL	0.00000	1.14146	1.14146
5	GreenkoBudhil	0.00000	0.00343	0.00343

#1 The differential amount of Rs. 16039.76272 Lakh is there due to different UI ceiling rate as per CERC Regulation on UI Charges and High Court of Allahabad, Lucknow bench order dated 2.5.2008 and CERC order dated 29.5.2008 for implementation of High Court order which is subject to review based on the conclusion of the proceeding in the matter presently pending in High Court

#2 The additional UI charges of UP for the FY 2009-10 and up to week 5 of FY 2010-11 are Rs. 21085.71003 Lakh as per CERC Regulation on UI Charges which UPPCL was not required to pay in pursuance of High Court of Allahabad, Lucknow bench order dated 12.11.2009 and CERC order dated03.12.2010

#3 Accordingly the UI charges Payable by UP is Rs. 0 Lakh (Including interest)

D.2.2 Utilities that have to pay the UI charges and interest charges were requested to release the outstanding amount at the earliest.

D.2.3 After deliberations, it was decided that keeping in view small amount payable by some utilities, the same may be adjusted in deviation charges except that for UP, where the matter was sub-judice.

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D.3 Status of Deviation Settlement Charges

D.3.1 Member Secretary, NRPC informed that the status of payment of Deviation charges payable/receivable by the utilities as on 31.01.2016 had been prepared as per the information received from NRLDC are as given below:

(Rs. in Lakh)

		Principal DS Charges	Interest on DS charges	Principal + Interest
S.No	Utility Name	Net DSC Payable(+) or Receivable(-)	Net DSC Interest Payable(+) or Receivable(-)	Net Amount Payable(+) or Receivable(-)
		1	2	3=1+2
1	CHANDIGARH	-59.10196	0	-59.10196
2	DELHI	-97.6863	0	-97.6863
3	HARYANA	139.63125	0	139.63125
4	HIMACHAL PRADESH	-843.05347	0	-843.05347
5	JAMMU AND KASHMIR	7175.06851	0	7175.06851
6	N.F.L.	12.42856	0	12.42856
7	NEPAL	14.15746	0	14.15746
8	POWERGRID_NR	7.58218	0	7.58218
9	PUNJAB	1.56503	0	1.56503
10	RAILWAYS	-41.78668	0	-41.78668
11	RAJASTHAN	-49.8493	0	-49.8493
12	UTTAR PRADESH	16176.99844	0	16176.99844
13	UTTARAKHAND	0	0	0
14	APCPL	0	0	0
15	BBMB	-48.77713	0	-48.77713
16	NHPC	132.90044	0	132.90044
17	NTPC	-230.87865	0	-230.87865
18	NTPC SOLAR	-4.10029	0	-4.10029
19	SJVN	70.50936	0	70.50936
20	THDC	129.21046	0	129.21046
21	ADHPL	0	0	0
22	EPPL	83.88529	0	83.88529
23	GREENKO BUDHIL	26.15068	0	26.15068
24	HBPCL	14.57449	0	14.57449

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25	HIMACHAL SORANG	1.20094	0	1.20094
26	SCL	0	0	0
27	ER-NR	3979.6661	0	3979.6661
28	NER-NR	1514.2141	0	1514.2141
29	WR-NR	485.90653	0	485.90653
30	Pool Balance	-30898.94318	0	-30898.94318

D.3.2 Utilities that had to pay the deviation charges were requested to release the outstanding amount at the earliest.

D.4 Status of Reactive Energy (RE) Charges

D.4.1 Member Secretary, NRPC stated that as per the information received from NRLDC, the status of Reactive Energy charges payable/Receivable by the utilities as on 13.10.2016was as given below:

All Figures in Rupees Lakh

Sl. No	Constituent	NET RE Charges Balance Upto 31st Mar. 2016	RE Charges Payable/ Receivable During 2016-2017 (upto 13.10.2016)	NET RE Charges Balance as on 13.10.2016	Interest on delayed payment of RE charges UptoQtr 4 of 2015-16	Net Balance
1	CHANDIGARH	-265.16	-20.44	-285.6	-85.18	-370.78
2	DELHI	437.07	79.61	516.68	-97.02	419.66
3	HIMACHAL PRADESH	-512.13	21.65	-490.48	-132.39	-622.87
4	HARYANA	-6841.64	-486.12	-7327.76	-1569.9	-8897.66
5	JAMMU AND KASHMIR	24061.02	1980.66	26041.68	5312.9	31354.58
6	PUNJAB	964.94	455.62	1420.56	-28.93	1391.63
7	RAJASTHAN	-3800.59	-379.86	-4180.45	-902.06	-5082.51
8	UTTARAKHAND	-30.57	57.11	26.54	-9.7	16.84
9	UTTAR PRADESH	-12735.03	-1516.69	-14251.72	-2487.72	-16739.44

D.4.2 It was noted that as on 13.10.2016, total outstanding of Reactive Energy Charges against PDD J & K was Rs. 313.55 Cr. Members expressed concern over large outstanding payable by PDD-J&K.

D.4.3 All Payable constituents including PDD-J & K were requested to release outstanding RE charges payments at the earliest.

D.5 Reimbursement of Expenditure of NRPC Sectt. for the year 2016-17 by the members of NRPC

D.5.1 Member Secretary, NRPC stated that keeping in view the budget estimates approved by Government of India (GoI) for the financial year 2016-17 and expenditure likely to be incurred towards outsourcing of staff, conduct of various meetings, leasing of vehicle etc through NRPC fund and balance amount available in the NRPC Fund, the per member contribution for the year 2016-17 would be Rs. 7 lakhs.

D.5.2 Members agreed to contribute the said amount.

D.6 Reimbursement of Expenditure of NRPC Sectt. for the year 2015-16 by the members of NRPC

D.6.1 Member Secretary, NRPC stated that in the 35th NRPC meeting held on 09.07.2015, it was decided to contribute the amount of Rs.11 Lakh per member for the year 2015-16 toward reimbursing NRPC expenditure to GoI for the year 2015-16, for meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson, NRPC. List of members from which contribution was still awaited is given below.

Sl. No.	Constituent Member
1	J & K State Power Development Corp. Ltd., J&K
2	Punjab State Power Corp. Ltd.,
3	Paschimanchal Vidyut Vitran Nigam Ltd., Meerut, UP
4	Power Transmission Corp. of Uttarakhand Ltd.
5	GMR Energy Trading Limited, New Delhi

D.6.2 Members were requested to expedite the contribution.

D.7 Reimbursement of Expenditure of NRPC Sectt. by the members of NRPC for the previous years

D.7.1 Member Secretary, NRPC informed that annual contribution as decided at NRPC meetings from time to time for reimbursing NRPC expenditure to GoI and meeting the expenditure for meetings at held Secretariat was awaited from following members:

S.No.	Constituent Member	Amount
Financial Year 2014-2015		
1	J&K State PDC Ltd ,J&K	Rs. 11 Lakh
2	Dakshinanchal VUNL, Agra	
3	JdVVNL, Jaipur	
4	Bajaj Energy Pvt Ltd.	

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Financial Year 2012-2013		
1	Purvanchal Vidyut Vitaran Nigam Ltd.	Rs.10 Lakh

D.7.2 Members were requested to expedite the contribution.

D.8 Verification of NRPC Fund Account

D.8.1 Member Secretary, NRPC stated that as per the Bye-laws for NRPC Fund the "NRPC Fund" account was required to be audited annually for each financial year. Accordingly, the NRPC fund account for financial year 2015-16 was audited by the officers nominated by Chairperson, NRPC.

D.8.2 He further stated that the audit of NRPC Fund account was also carried out through the Chartered Accountant appointed with the approval of Chairperson, NRPC. The statement of audited accounts of NRPC Fund for the Financial Year 2015-16 duly audited by the Chartered Accountant was enclosed in the agenda.

D.8.3 Members approved the statement of audited accounts of "NRPC – Fund" for the Financial Year 2015-16.

D.9 Verification of Regional Board Fund

D.9.1 Member Secretary, NRPC stated that as per Bye-laws for Regional Board Fund (RBF), the account for each financial year was required to be audited annually by the officers nominated by Chairperson, NRPC. The auditing of expenditure of RBF account for the year 2015-16 was carried out by the officers nominated by Chairperson, NRPC and statement was placed in the agenda.

D.9.2 Members approved the statement of audited accounts of RBF for the Financial Year 2015-16.

D.10 Capacity Building Programme for Integration of Renewable Energy Sources into the Grid

D.10.1 Member Secretary, NRPC stated that in 30th TCC/34th NRPC meeting held in March 2015 it was decided that NRPC Secretariat, with the approval of Chairperson, NRPC, would finalize a capacity building programme for personnel involved in system operators, transmission system planning & operation and policy & regulatory implementation. Further, it was also agreed that this programme should be funded from PSDF. The grant for the capacity building programme through PSDF was sanctioned by Govt. of India. The programme was conducted as per schedule given below:

a) Middle Management Batch-I from 15.01.2016 to 27.01.2016

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b) Middle Management Batch 2.1 from 15.06.2016 to 25.06.2016 and Batch 2.2 from 21.06.2016 to 31.10.2016
c) Higher Management Batch from 11.07.2016 to 18.07.2016

D.10.2As per the terms and condition of contract the payment to the service provider was to be made in phases. Due to non-availability of sufficient fund from PSDF, only part payment was released to the service provider at the time of departure of first batch. Balance payment to the service provider and payment to income tax department for withholding tax was made after receipt of fund from PSDF. Due to delay in deposit of withholding tax, income tax department has imposed penalty. The penal charges were Rs. 37425/- and with accumulated interest amount it has increased to Rs. 38930/-.

D.10.3Member Secretary also stated that the matter was taken up with NLDC (the nodal agency for disbursement of PSDF) with the request to give consent for depositing the interest on TDS and subsequent penal charges on this interest from the sanctioned grant of PSDF. However, no reply was received from them. To avoid further penalty from income tax department it was proposed to release the Interest on Late Deduction of withholding tax from NRPC Fund.

Members approved the proposal.

D.11 Hosting of next meetings of NRPC / TCC

Member Secretary, NRPC stated that PDD J&K was agree able to host the next 35thTCC & 39thNRPCmeetings, which would become due in Feb./March, 2017.

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Annexure-I

List of Participants of 34rd Meeting of TCC on 24.10.2016 at Rishikesh

S.No.	Name of Officer	Designation	Organization
A	**Members Of TCC**		
1.	Shri J.K. Juneja	Chairman, TCC and Director(Tech.), HVPNL	HVPNL
2.	Shri V.K. Kalra	Member(Power)	BBMB
3.	Shri R.K. Sharma	Director(O)	HPSEBL
4.	Shri Rajesh Thakur	Director (Proj.)	HPPTCL
5.	Shri R.K. Bansal	Director(E)	SJVNL
6.	Shri Jagdish Kumar	Director (Technical)	IPGCL
7.	Smt ShashiPrabha	Director (Tech.)	PSTCL
8.	Shri S.P.Chaubay	Chief Engineer (TO)	UPRVUNL
9.	Shri JanardanChoudhary	Executive Director(O&M)	NHPC
10.	Shri R.S. Rathee	Regional Exec. Dir. North	NTPC
11.	Shri Rakesh Sharma	Superintending Engineer	SLDC,HP
12.	Shri P.K. Agarwal	General Manager	NRLDC
13.	Shri Anil K. Garg	General Manager(BD)	HPPTCL
14.	Shri Rajesh Gupta	Chief Engineer/SO&C	HVPN
15.	Shri Karunakar Jha	DY. General Manager (Comml.)	JPL
B	**Other Participants**		
I	**NRPC, Secretariat**		
16.	Shri Ajay Talegaonkar	Superintending Engineer	NRPC
17.	Shri Hemant Kumar Pandey	Superintending Engineer	NRPC
18.	Shri B.S. Bairwa	Executive Engineer (O)	NRPC
19.	Shri. Ratnesh Kumar	Executive Engineer(C)	NRPC
20.	Shri AkshyaDubey	Asst. Executive Engineer(O)	NRPC
21.	Shri Manish Maurya	Asst. Engineer(C)	NRPC
II	**BBMB**		
22.	Shri Anil Gautam	Director P.R.	BBMB
23.	Shri Kuldeep Singh	Power Controller	BBMB
24.	Shri Rakesh Birla	DY CE/HQ	BBMB
III	**DELHI**		
25.	Shri S.M. Verma	Executive Director (T)	DTL
26.	Shri. H. Vyas	Executive Director	DTL
IV	**HARYANA**		

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27.	Shri Ashok Garg	DySec.General	HPGCL
V	**HIMACHAL PRADESH**		
28.	Shri J.P. Kalta	Managing Director	HPPTCL
29.	Shri Suneel Grover	Chief Engineer (SO)	HPSEBL
VI	**J&K**		
30.	Shri S.K. Kaul	Superintending Engineer C&S,PDD	J & K
VII	**PUNJAB**		
31.	Shri S.S. Mal	Chief Engineer, SLDC	PSTCL
32.	Shri S.K. Kansal	Dy. Chief Engineer, ISB	PSPCL
VIII	**RAJASTHAN**		
33.	Shri Ajay Kumar Sharma	Chief Engineer (LD)	RVPNL
34.	Shri C.L. Koli	Superintending Engineer (PPM)	RRVUNL
35.	Shri Atul Sharma	Executive Engineer (SOLD)	RVPNL
IX	**UTTAR PRADESH**		
36.	Shri A.K. Jayaswal	Superintending Engineer	UPPTCL
37.	Shri C.K. Shukla	Superintending Engineer	UPSLDC
38.	Shri Brijesh Singh	Executive Engineer	UPRVUNL
39.	Shri S.K. Chaurasia	Executive Engineer	UPPTCL
40.	Shri Mithilesh K Gupta	Executive Engineer	UPSLDC
X	**UTTARAKHAND**		
41.	Shri Deep Sah	Chief Engineer (Proj.)	PTCUL
42.	Shri Neeraj Pathak	Superintending Engineer (Planning)	PTCUL
43.	Shri Ashok Kumar	Executive Engineer	PTCUL
XI	**NHPC**		
44.	Shri Chander Mohan	General Manager (Comml.)	NHPC
XII	**NTPC**		
45.	Shri Pravin Chaturvedi	General Manager (OS+NR)	NTPC
46.	Shri Rakesh Chopra	General Manager (Comml.)NRHQ	NTPC
47.	Shri Shailesh Dheman	Deputy General Manager (OS)CC	NTPC
48.	Shri Shyam Kumar	Addl..General Manager (Comml.)	NTPC

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XIII	**PGCIL**		
49.	Shri Sunil Agrawal	Executive Director(LD & C)	POWERGRID
50.	Shri R.V.S. Kushwaha	General Manager (AM)	POWERGRID
51.	Shri Rajiv Mohan	General Manager(AM)	POWERGRID
52.	Shri Y.S. Sai Prasad	DGM (ULDC &Comml.)	POWERGRID
53.	Shri Mukesh Khanna	Addl. General Manager (CTU,PLG)	POWERGRID
XIV	**SJVNL**		
54.	Shri Romesh Kapoor	General Manager (C&So)	SJVNL
XV	**THDCIL**		
55.	Shri D.V. Singh	Director(T)	THDC
56.	Shri H.L. Arora	Executive Director (OMS)	THDC
57.	Shri Rajiv Vishnoi	Executive Director (Design)	THDC
58.	Shri Ajay Mathur	General Manager (Comml.)	THDC
59.	Shri R.K. Verma	Deputy General Manager (Comml.)	THDC
60.	Shri Rajeev Jain	Executive Manager (Design)	THDC
61.	Shri L.P. Joshi	Addl.General Manager (EMD)	THDC
XVI	**NRLDC**		
62.	Shri Rajiv Porwal	Deputy General Manager	POSOCO,NRLDC
63.	Shri Alok Kumar	Chief Manager	POSOCO,NRLDC
XVII	**JHAJJAR POWER(CLP)**		
64.	Shri Rajneesh Setia	Senior Manager	CLP
XVIII	**PRIVATE DISCOM(BRPL)**		
65.	Shri Satinder Singh Sondhi	Vice President	BRPL

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Annexure-II

List of Participants of 38th Meeting of NRPC on 25.10.2016 at Rishikesh

S. N	Name of Officer	Designation	Organization
A	**Members of NRPC**		
1.	Shri Vineet Garg	Chairperson, NRPC and Managing Director, HVPNL	HVPNL
2.	Shri S.D.Dubey	Chairperson, CEA & Member (PS)	CEA
3.	Shri R.N. Misra	Chairman &Managing Director	SJVNL
4.	Shri Prem Prakash	Managing Director	DTL
5.	Shri Rajesh Singh	Director (Proj.)	HPPTCL
6.	Shri Preman Dinaraj	Director(Fin.)	NPCIL
7.	Shri D.V. Singh	Director(Tech)	THDC
8.	Shri Ajay K. Sharma	Chief Engineer (LD)	SLDC, Rajsthan
9.	Shri Rajesh Gupta	Chief Engineer /SO&Comml.	HVPNL
10.	Shri V. Venugopal	General Manager(SLDC)	DTL
11.	Shri P.K. Agarwal	General Manager	NRLDC
12.	Shri. P.S. Mhaske	Member Secretary	NRPC
B	**Members of TCC**		
13.	Shri J.K. Juneja	Director(Tech.) HVPNL & Chairman (TCC), NRPC	HVPNL
14.	Shri V.K. Kalra	Member(Power)	BBMB
15.	Shri R.K. Sharma	Director(O)	HPSEBL
16.	Shri Rajesh Thakur	Director (Proj.)	HPPTCL
17.	Shri R.K. Bansal	Director(E)	SJVNL
18.	Shri Jagdish Kumar	Director (Tech.)	IPGCL
19.	Smt Shashi Prabha	Director (Tech.)	PSTCL
20.	Shri R.S. Rathee	Regional Exec. Dir. North	NTPC
21.	Shri Janardan Choudhary	Executive Director(O&M)	NHPC
22.	Shri S.P. Chaubay	Chief Engineer (TO)	UPRVUNL
23.	Shri P.K. Agarwal	General Manager	NRLDC
24.	Shri Anil K. Garg	General Manager(BD)	HPPTCL
25.	Shri Rakesh Sharma	Superintending Engineer	SLDC,HP
26.	Shri Karunakar Jha	DY. General Manager (Comml.)	JPL
27.	Shri Shravan K Sharma	Director(O&M)	PTCUL
C	**Other Participants**		
I	**NRPC, Secretariat**		
28.	Shri Hemant Kumar	Superintending Engineer	NRPC

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S. N	Name of Officer	Designation	Organization
	Pandey		
29.	Shri B.S. Bairwa	Executive Engineer (O)	NRPC
30.	Shri Ratnesh Kumar	Executive Engineer(C)	NRPC
31.	Shri AkshyaDubey	Asst. Executive Engineer(O)	NRPC
32.	Shri Manish Maurya	Asst. Engineer(C)	NRPC
II	**BBMB**		
33.	ShriAnil Gautam	Director P.R.	BBMB
34.	ShriKuldeep Singh	Power Controller	BBMB
35.	ShriRakesh Birla	DY Chief Engineer /HQ	BBMB
III	**DELHI**		
36.	Shri S.M.Verma	Executive Director (T)	DTL
37.	Shri H.Vyas	Executive Director	DTL
IV	**HARYANA**		
38.	Shri S.S. Dalal	Director	HPGCL
39.	Shri O.K. Sharma	Chief Engineer	HPPC
40.	Shri Ashok Garg	DySec.General	HPGCL
V	**HIMACHAL PRADESH**		
41.	Shri J.P. Kalta	Managing Director	HPPTCL
42.	Shri Suneel Grover	Chief Engineer (SO)	HPSEBL
43.	Shri Rakesh Sharma	Dy. Chief Engineer	HPLDS
44.	Shri Deepak Uppal	Superintending Engineer (PR&ALDC)	HPSEBL
45.	Shri Joginder Singh	Superintending Engineer (Inter State)	HPSEBL
VI	**J&K**		
46.	Shri S.K. Kaul	Superintending Engineer, C&S,PDD	J & K
VII	**PUNJAB**		
47.	Shri S.S. Mal	Chief Engineer /SLDC	PSTCL
48.	Shri S.K. Kansal	DyChief Engineer	PSPCL
VIII	**RAJASTHAN**		
49.	Shri C.L. Koli	Superintending Engineer (PP)	RRVUNL
50.	Shri Atul Sharma	Executive Engineer (SOLD)	RRVPNL

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S. N	Name of Officer	Designation	Organization
IX	**UTTARAKHAND**		
51.	Shri Purushottam Singh	Executive Director(O&M)	UJVNL
52.	Shri Deep Sah	Chief Engineer (Proj.)	PTCUL
53.	Shri Neeraj Pathak	Superintending Engineer(Plg.)	PTCUL
54.	Shri Ashok Kumar	Executive Engineer	PTCUL
X	**UTTAR PRADESH**		
55.	Shri A.K. Jayaswal	Superintending Engineer	UPPTCL
56.	Shri Brijesh Singh	Executive Engineer	UPRVUNL
57.	Shri S.K. Chaurasia	Executive Engineer	UPPTCL
58.	Shri Mithilesh K.Gupta	Executive Engineer	SLDC,UPPTCL
XI	**NHPC**		
59.	Shri Chander Mohan	General Manager (Comml.)	NHPC
XII	**NTPC**		
60.	Shri Rakesh Chopra	General Manager (Comml.)	NTPC
61.	Shri Shailesh Dhaman	DGM (OS)CC	NTPC
62.	Shri Shyam Kumar	Addl.General Manager(Comml.)	NTPC
XIII	**PGCIL, New Delhi**		
63.	Shri Sunil Agrawal	Executive Director (LD & C)	POWERGRID
64.	Shri R.V.S.Kushwaha	General Manager(AM)	POWERGRID
65.	Shri Rajiv Mohan	General Manager(AM)	POWERGRID
66.	Shri Mukesh Khanna	Addl. General Manager (CTU,PLG)	POWERGRID
67.	Shri Y.S.Sai Prasad	DGM(ULDC &Comml.)	POWERGRID
XIV	**SJVNL**		
68.	Shri Romesh Kapoor	General Manager(C&SO)	SJVNL
XV	**THDCIL**		
69.	Shri H.L. Arora	Executive Director (OMS)	THDC
70.	Shri Ajay Mathur	General Manager (Comml.)	THDC
71.	Shri Muhar Mani	General Manager(Tehri St-I)	THDC
72.	Shri Sajeev R	Addl.General Manager(O&M)	THDC
73.	Shri L.P. Joshi	Addl.General Manager (EMD)	THDC

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S. N	Name of Officer	Designation	Organization
XVI	**NRLDC**		
74.	Shri Rajiv Porwal	DeputyGeneral Manager	POSOCO,NRLDC
75.	Shri Alok Kumar	Chief Manager	POSOCO,NRLDC
XVII	**JHAJJAR POWER(CLP)**		
76.	Shri Rajneesh Setia	Sr. Manager	CLP
XVIII	**ADANI POWER RAJ. Ltd.**		
77.	Shri Manoj Taunk	General Manager	Adani Power Raj.Ltd.
XIX	**Pvt. DISCOM**		
78.	Shri Satinder Singh Sondhi	Vice President	BSES-Rajdhani

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Annexure-III

Details of Connectivity Applications granted by CTU

S.No.	Name of the Applicant	Location	Region	Installed Capacity (MW)	Connectivity Granted for (MW)	Connectivity Granted from	Transmission System identified for Connectivity
1	THDC India Ltd. (Tehri PSP)	Uttarakhand	NR	1000	1000	3-Nov-2017	Through Bus Bar extension at Tehri Bus
2	Adani Renewable Energy Park Rajasthan Limited	Bhadla, Rajasthan	NR	250	250	15-Dec-2016 or availability of Tr. System whichever is later	Adani Gen. Switchyard - Bhadla (PG) Pooling Station 220kV D/c line
3	Saurya Urja Company of Rajasthan Ltd	Jodhpur, Rajasthan	NR	500	500	01-Jan-2017 or availability of Tr. System whichever is later	SauryaUrja generation switchyard - Bhadla (PG) Pooling Station 220 kV D/c (Twin Zebra) line
4	L&T Uttaranchal Hydropower Limited	Uttarakhand	NR	99	99	15-Nov-2017	LILO of one circuit of Srinagar-Baramwari 220 kV D/C line at SingoliBhatwari Generation switchyard
5	Adani Renewable Energy Park Rajasthan Limited	Jaisalmer, Rajasthan	NR	1500	1000	30-Dec-2017 or availability of Tr. System under ISTS whichever is later	i) Adani Generation Switchyard - Fatehgarh Pooling Station 400kV D/c line (by applicant), ii) Fatehgarh PS - Bhadla (PG) 765kV D/c line

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							along with Fatehgarh PS (under ISTS)
6	Indian Oil Corporation Ltd.	U.P	NR	100	100	31-Dec-2018	IOCL Refinery-Math (UPPTCL) 220 kV D/c line

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Annexure-IV

Details of Long Term Access Applications granted by CTU

Sl. No.	Name of the Applicant	Location	Region	LTOA/LTA granted for (MW)	Point or points of injection	Tr. System Requirement	
						Dedicated / Connectivity Tr. System	Common
1	THDC India Ltd. (Tehri PSP)	Tehri, Uttarakhand	NR	1000	Tehri PSP, Uttarakhand	Through Bus Bar extension at Tehri Bus	Tehri Generation – Koteshwar Pooling Stn. 400 kV S/c (Quad Conductor), Establishment of 765/400 kV GIS substation at KoteshwarPlg. Stn., Aug. of 765/400 transformation capacity by 1x1500 MVA at Meerut, Charging of Tehri Pooling – Meerut line at 765 kV level.
2	Himachal Pradesh Power Corporation Limited (Shongtong)	Himachal Pradesh	NR	450	ShongtongKarcham HEP, Himachal Pradesh	Shongtong Generation Switchyard	ShongtongKarcham – Wangtoo 400 kV D/c Line (Quad HTLS Conductor Equivalent to about 3000MW) – 18km (ISTS) Establishment of 220/400kV GIS Pooling Station at Wangtoo along with LILO of both circuits of 400 kV Karcham Wangtoo-Abdullapur D/c line at Wangtoo S/s

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3	Solar Energy Corporation of India (Rajasthan to Punjab)	RVPN-STU interconnection with ISTS in Rajasthan	NR	30	RVPN-STU interconnection with ISTS in Rajasthan	Not Applicable	Existing Transmission System
4	Saurya Urja Company of Rajasthan Ltd. (U-I)	Badla, Rajasthan	NR	250	765/400/220 kV Bhadla Pooling Station	SauryaUrja generation switchyard - Bhadla (PG) Plg. Stn. 220 kV D/c (Twin Zebra) line	Transmission System for Solar Power Parks at Bhadla, Rajasthan
5	Adani Renewable Energy Park Rajasthan Limited	Bhadla, Rajasthan	NR	250	765/400/220 kV Bhadla Pooling Station	Adani generation switchyard - Bhadla (PG) Pooling Station 220 kV D/c line	Transmission System for Solar Power Parks at Bhadla, Rajasthan
6	Saurya Urja Company of Rajasthan Ltd. (U-II)	Badla, Rajasthan	NR	250	765/400/220 kV Bhadla Pooling Station	SauryaUrja generation switchyard - Bhadla (PG) Pooling Station 220 kV D/c (Twin Zebra) line	Transmission System for Solar Power Parks at Bhadla, Rajasthan
7	Himachal Baspa Power Company Ltd. (earlier Jaiprakash Power Ventures Ltd)	Himachal Pradesh	NR	264	KarchamWangtoo generation	NIL	Existing Transmission System
8	NSL Tidong Power Generation Private Limited	Himachal Pradesh	NR	88	NSL Tidong Power Gen. Pvt. Ltd., Himachal Pradesh	a) Tidong-Jangi Pooling Station 220 kV D/c line - by HPPTCL b) 2x315 MVA, 220/400 kV GIS Jangi PS	Transmission System for transfer of power to Southern Region ie.: a) Angul – Srikakulam – Vemagiri (PG) 765 kV D/c line b) Wardha – Nizamabad 765 kV D/c line c) Nizamabad – Hyderabad (Maheshwaram)

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							765kV D/c line
9	Adani Renewable Energy Park Rajasthan Ltd.	Jaisalmer, Rajasthan	NR	250	400kV Fatehgarh Pooling Station	Adani Generation Switchyard - Fatehgarh Pooling Station 400kV D/c line	Existing and under construction Transmission System of Green Energy Corridor
10	Adani Renewable Energy Park Rajasthan Ltd.	Jaisalmer, Rajasthan	NR	750	400kV Fatehgarh Pooling Station	Adani Generation Switchyard - Fatehgarh Pooling Station 400kV D/c line	Existing and under construction Transmission System of Green Energy Corridor

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Annexure 4

Weighted Average Rate of Interest

FY 2014-15

S. No.	Lender	Opening as on 01.04.2014	Current Maturity from long term debt	Opening as on 01.04.2014	Addition	Repayment	Closing as on 31.03.2015	Current Maturity from long term debt	Closing as on 31.03.2015	Interest
1	PFC Trans	21,10,66,12,384	2,02,16,78,566	19,08,49,33,818	1,70,39,64,393	2,02,16,78,566	20,78,88,98,211	2,25,11,63,395	18,53,77,34,816	2,72,14,49,392
2	PFC BLC	0	0	0	0	0	0	0	0	0
3	REC (RES)	46,50,75,801	11,31,15,299	35,19,60,502	0	11,22,29,485	35,28,46,316	12,45,68,924	22,82,77,392	22,42,04,578
4	REC Trans	43,07,78,86,690	1,84,85,85,345	41,22,93,01,345	6,41,00,38,677	1,84,85,85,350	47,63,93,40,017	2,97,40,09,260	44,66,53,30,757	5,56,91,20,931
5	REC (PCL)	1,54,00,69,737	28,87,63,128	1,25,13,06,609	0	28,87,63,128	1,25,13,06,609	28,87,63,128	96,25,43,481	17,39,37,112
6	GoUP	99,71,46,000	33,37,92,958	66,33,53,042	0	99,71,46,000	0	0	0	0
	Grand Total	67,18,67,90,612	4,60,59,35,296	62,58,08,55,316	8,11,40,03,070	5,26,84,02,529	70,03,23,91,153	5,63,85,04,707	64,39,38,86,446	8,68,87,12,013
Weighted Avg. Interest Rate for Long Term Debts										12.66%

FY 2015-16

S. No.	Lender	Opening as on 01.04.2015	Current Maturity from long term debt	Opening as on 01.04.2015	Addition	Repayment	Closing as on 31.03.2016	Current Maturity from long term debt	Closing as on 31.03.2016	Interest
1	PFC	20,78,88,98,211	22,51,11,63,395	18,53,77,34,816	3,78,62,27,629	1,62,57,69,486	22,94,93,36,352	2,19,96,84,770	20,74,96,51,582	2,69,75,59,289
2	REC	49,24,34,92,942	3,38,73,41,312	45,85,61,51,630	15,21,47,52,264	3,42,12,53,441	61,03,69,91,765	3,39,99,54,688	57,63,70,37,077	6,91,50,61,891
	Total	70,03,23,91,153	25,89,85,04,707	64,39,38,86,446	19,00,09,79,893	5,04,70,42,929	83,98,63,28,117	5,59,96,39,458	78,38,66,88,659	9,61,26,20,180
	Weighted Avg. Interest Rate for Long Term Debts									12.48%

FY 2016-17

S. No.	Lender	Opening as on 01.04.2016	Current Maturity from long term debt	Opening as on 01.04.2016	Addition	Repayment	Closing as on 31.03.2017	Current Maturity from long term debt	Closing as on 31.03.2017	Interest
1	PFC	22,94,93,36,352	2,19,96,84,770	20,74,96,51,582	8,91,31,73,921	2,73,72,49,392	29,12,52,60,881	1,64,36,16,781	27,48,16,44,100	3,69,27,96,845
2	REC	61,03,69,91,765	3,39,99,54,688	57,63,70,37,077	15,26,24,46,208	4,18,73,24,123	72,13,21,12,850	5,29,53,08,518	66,84,68,04,332	8,12,36,11,374
	Total	83,98,63,28,117	5,59,96,39,458	78,38,66,88,659	24,17,56,19,129	6,90,45,73,515	1,01,25,73,73,731	6,93,89,25,299	94,32,84,48,432	11,81,64,08,219
	Weighted Avg. Interest Rate for Long Term Debts									12.76%

FY 2017-18

S. No.	Lender	Opening as on 01.04.2016	Current Maturity from long term debt	Opening as on 01.04.2016	Addition	Repayment	Closing as on 31.03.2017	Current Maturity from long term debt	Closing as on 31.03.2017	Interest
1	PFC	29,12,52,60,661	1,64,36,16,781	27,48,16,44,100	15,59,37,17,778	1,64,36,16,781	43,07,53,61,878	1,46,37,29,299	41,61,16,32,579	3,84,76,24,714
2	REC	72,13,21,12,650	5,28,53,08,518	66,84,68,04,332	5,99,67,08,815	5,28,53,08,508	72,84,25,12,957	6,83,12,09,248	66,01,13,03,709	8,47,18,80,871
	Total	1,01,25,73,73,731	6,92,89,25,299	94,32,84,48,432	21,58,94,26,593	6,92,89,25,289	1,15,91,78,74,835	8,29,49,38,547	1,07,62,29,36,288	12,11,95,05,585
	Weighted Avg. Interest Rate for Long Term Debts									11.16%

FY 2018-19

Loan No.	Lender	Opening as on 01.04.2018	Current Maturity from long term debt	Opening as on 01.04.2018	Addition	Repayment	Closing as on 31.03.2019	Current Maturity from long term debt	Closing as on 31.03.2019	Interest
1	PFC	43,07,53,61,878	1,46,37,29,299	41,61,16,32,579	9,28,29,57,949	1,49,41,46,993	50,86,41,70,834	3,16,20,21,676	47,70,21,49,158	4,72,00,07,570
2	REC	72,84,25,12,957	6,83,12,09,248	66,01,13,03,709	2,02,63,53,373	6,86,90,87,754	67,99,97,78,576	6,68,49,01,178	61,31,48,77,398	7,85,94,42,992
	Total	1,15,91,78,74,835	8,29,49,38,647	1,07,62,29,36,288	11,30,93,11,322	8,36,32,36,747	1,18,86,39,49,410	9,84,69,22,854	1,09,01,70,26,556	12,57,94,50,562
	Weighted Avg. Interest Rate for Long Term Debts									10.72%

FY 2019-20

S.NO.	Lender	Opening as on 01.04.2019	Addition	Repayment	Closing as on 31.03.2020	Interest
1	PFC	50,86,42,00,000	9,16,25,00,000	3,43,37,00,000	56,59,30,00,000	5,73,84,00,000
2	REC	67,99,98,00,000	12,48,31,00,000	7,20,55,00,000	73,27,74,00,000	7,85,00,00,000
	TOTAL	1,18,86,40,00,000	21,64,56,00,000	10,63,92,00,000	1,29,87,04,00,000	13,58,84,00,000
Weighted Avg. Interest Rate for Long Term Debts						10.93%

FY 2020-21

S.NO.	Lender	Opening as on 01.04.2020	Current Maturity from long term debt	Opening as on 01.04.2020	Addition	Repayment	Closing as on 31.03.2021	Current Maturity from long term debt	Closing as on 31.03.2021	Net Interest
1	PFC	56,59,30,00,000	6,12,37,56,344	50,46,92,43,656	7,64,99,37,704	6,33,66,75,273	57,90,62,62,431	6,45,95,90,852	51,44,66,71,579	5,43,36,49,124
2	REC	73,27,74,00,000	7,81,30,70,405	65,46,43,29,595	9,66,57,56,486	8,07,86,99,577	74,86,44,56,909	8,08,95,95,365	66,77,48,61,544	8,43,41,83,286
	TOTAL	1,29,87,04,00,000	13,93,68,26,749	1,15,93,35,73,251	17,31,56,94,190	14,41,53,74,850	1,32,77,07,19,340	14,54,91,86,217	1,18,22,15,33,123	13,86,78,32,410
Weighted Avg. Interest Rate for Long Term Debts										11.84%

Annexure 5 – Tariff Formats for Asset I to Asset XVIII for the tariff period 2014-19 and 2019-24

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV Muzaffarnagar (Nara)-Roorkee line

Name of the Transmission Element or Communication system: 220 kV Muzaffarnagar (Nara)-Roorkee line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.65	0.67	0.69	0.71	0.74
1.5	O & M Expenses*		11.72	12.12	12.53	12.93	13.34
	Total		**12.36**	**12.79**	**13.22**	**13.65**	**14.08**

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV Muzaffarnagar (Nara)-Roorkee line
Name of the Transmission Element or Communication system: 220 kV Muzaffarnagar (Nara)-Roorkee line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV Muzaffarnagar (Nara)-Roorkee line	AC	SC	1	220	58	58	17-Sep-79	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional/Greenfield/Brownfield/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV Muzaffarnagar (Nara)-Roorkee line

Name of the Transmission Element or Communication system: 220 kV Muzaffarnagar (Nara)-Roorkee line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV Muzaffarnagar (Nara)-Roorkee line
Name of the Transmission Element or Communication system: 220 kV Muzaffarnagar (Nara)-Roorkee line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.98	1.01	1.04	1.08	1.11
2	Maintenance Spares	1.76	1.82	1.88	1.94	2.00
3	Receivables	2.06	2.13	2.20	2.27	2.35
4	Total Working Capital	4.79	4.96	5.13	5.29	5.46
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.65	0.67	0.69	0.71	0.74

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV Muzaffarnagar (Nara)-Roorkee line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.64	0.66	0.68	0.71	0.73
5	O & M Expenses		14.62	15.08	15.66	16.18	16.76
	Total AFC		**15.25**	**15.74**	**16.34**	**16.89**	**17.49**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV Muzaffarnagar (Nara)-Roorkee line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltag e Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV Muzaffarnagar (Nara)-Roorkee line	AC	SC	1	220	0	0	58	9/17/1979	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	58	58	58	58	58
O&M Claimed (Rupees in Lakh)	14.62	15.08	15.66	16.18	16.76

2.

S.No.	Name of Sub- station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVD	Voltage level kV	No. of transform ers / Reactors/S VC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commer cia l operatio n	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communicatio	Length of OPGWin ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	14.62	15.08	15.68	16.18	16.76
2	Substation					
3	Communication System					
	Total Normative O&M	14.62	15.08	15.68	16.18	16.76
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	14.62	15.08	15.68	16.18	16.76

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV Muzaffarnagar (Nara)-Roorkee line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV Muzaffarnagar (Nara)-Roorkee line

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		1.22	1.26	1.31	1.35	1.40
2	Maintenance Spares 15% of O&M Expenses		2.19	2.26	2.35	2.43	2.51
3	Receivables equivalent to 45 days of AFC		1.88	1.94	2.01	2.08	2.15
4	Total Working Capital		5.29	5.46	5.67	5.85	6.06
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.64	0.66	0.68	0.71	0.73

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Khodri-Saharanpur-1 Line

Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-1 Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.93	0.96	0.99	1.03	1.06
1.5	O & M Expenses*		16.83	17.42	18.00	18.58	19.17
	Total		**17.76**	**18.38**	**18.99**	**19.61**	**20.22**

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Khodri-Saharanpur-1 Line
Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-1 Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Khodri-Saharanpur-1 Line	AC	SC	1	220	83.33	83.33	12-Apr-72	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Khodri-Saharanpur-1 Line

Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-1 Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Khodri-Saharanpur-1 Line
Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-1 Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	1.40	1.45	1.50	1.55	1.60
2	Maintenance Spares	2.52	2.61	2.70	2.79	2.87
3	Receivables	2.96	3.06	3.17	3.27	3.37
4	Total Working Capital	6.89	7.13	7.37	7.60	7.84
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.93	0.96	0.99	1.03	1.06

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-1 Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.92	0.95	0.98	1.01	1.05
5	O & M Expenses		21.00	21.67	22.50	23.25	24.08
	Total AFC		**21.91**	**22.61**	**23.48**	**24.26**	**25.13**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-1 Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(Including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV SC Khodri-Saharanpur-1 Line	AC	SC	1	220	0	0	83.33	12-Apr-72	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	83.33	83.33	83.33	83.33	83.33
O&M Claimed (Rupees in Lakh)	21.00	21.67	22.50	23.26	24.08

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC terminal/HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the Instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	21.00	21.67	22.50	23.25	24.08
2	Substation					
3	Communication System					
	Total Normative O&M	21.00	21.67	22.50	23.25	24.08
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	21.00	21.67	22.50	23.25	24.08

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-1 Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्पर्क निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-1 Line

(Amount in Rs. Lakh)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year	366	365	365	365	366
II	No. of days for which tariff claimed	366	365	365	365	366
1	O & M Expenses - one month	1.75	1.81	1.87	1.94	2.01
2	Maintenance Spares 15% of O&M Expenses	3.15	3.25	3.37	3.49	3.61
3	Receivables equivalent to 45 days of AFC	2.69	2.79	2.89	2.99	3.09
4	Total Working Capital	7.59	7.84	8.14	8.42	8.71
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.	12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital	0.92	0.95	0.98	1.01	1.05

(Petitioner)

(मनोज सिंह)
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राज्यक्षेत्र निदेशक (नियोजन एवं वाणिज्य)
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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Khodri-Saharanpur-2 Line

Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-2 Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.90	0.94	0.97	1.00	1.03
1.5	O & M Expenses*		16.37	16.94	17.51	18.07	18.64
	Total		17.28	17.88	18.47	19.07	19.67

(Petitioner)

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सम्पत्ति नियंत्रक (नियोजन एवं वाणिज्य)
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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Khodri-Saharanpur-2 Line
Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-2 Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Khodri-Saharanpur-2 Line	AC	SC	1	220	81.05	81.05	31-Mar-80	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Khodri-Saharanpur-2 Line

Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-2 Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

(मनोज सिंह)

Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Khodri-Saharanpur-2 Line
Name of the Transmission Element or Communication system: 220 kV SC Khodri-Saharanpur-2 Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	1.36	1.41	1.46	1.51	1.55
2	Maintenance Spares	2.46	2.54	2.63	2.71	2.80
3	Receivables	2.88	2.98	3.08	3.18	3.28
4	Total Working Capital	6.70	6.93	7.16	7.40	7.63
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.90**	**0.94**	**0.97**	**1.00**	**1.03**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-2 Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.89	0.92	0.95	0.99	1.02
5	O & M Expenses		20.42	21.07	21.88	22.61	23.42
	Total AFC		**21.31**	**21.99**	**22.84**	**23.60**	**24.44**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-2 Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltag e Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV SC Khodri-Saharanpur-2 Line	AC	SC	1	220	0	0	81.05	3/31/1980	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	81.05	81.05	81.05	81.05	81.05
O&M Claimed (Rupees in Lakh)	20.42	21.07	21.88	22.61	23.42

2.

S.No.	Name of Sub- station	Type of Substation Conventional/(Greenfield/Brownfield)/ GIS/HVDC	Voltage level kV	No. of transform ers / Reactors/S VC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communicatio	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the Instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	20.42	21.07	21.88	22.61	23.42
2	Substation					
3	Communication System					
	Total Normative O&M	20.42	21.07	21.88	22.61	23.42
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	20.42	21.07	21.88	22.61	23.42

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-2 Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
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सचिव निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV SC Khodri-Saharanpur-2 Line

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		1.70	1.76	1.82	1.88	1.95
2	Maintenance Spares 15% of O&M Expenses		3.06	3.16	3.28	3.39	3.51
3	Receivables equivalent to 45 days of AFC		2.62	2.71	2.82	2.91	3.01
4	Total Working Capital		7.39	7.63	7.92	8.19	8.47
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.89	0.92	0.95	0.99	1.02

(Petitioner)

(मनोज सिंह)
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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	3.56	1.38	1.38	1.38	1.38
1.2	Interest on Loan	9E	0.79	0.47	0.31	0.11	0.02
1.3	Return on Equity[1]	8	3.13	3.13	3.13	3.13	3.13
1.4	Interest on Working Capital	11	0.23	0.18	0.18	0.17	0.17
1.5	O & M Expenses		1.11	1.15	1.19	1.23	1.27
	Total		**8.82**	**6.31**	**6.18**	**6.03**	**5.97**

Note
1: Details of calculations, considering equity as per regulation, to be furnished (As per Form 8).

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Bareilly - Pantnagar Line	AC	SC	1	220	5.501	5.501	4-Mar-03	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

(मनोज सिंह)
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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Bareilly - Pantnagar Line

Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Effective tax rate[1]	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

(Petitioner)

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Part III Form-4

Abstract of admitted parameters for the existing transmission assets/elements under project.

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs.lakhs)

	Asset IV	Total Gross Block as on 31.03.2014
Name of the Assets	220 kV SC Bareilly - Pantnagar Line	
DOCO	4-Mar-03	
Petition Number	168/TT/2016	
Tariff order date	19.12.2017	
Particulars	**Capital Expenditure admitted as on 31.03.2014**	
Apportioned approved Cost/Revised cost estimates, If any (with reference and date of approval)	NA	
Freehold Land		
Leasehold Land		
Building & Other Civil Works		
Transmission Line		
Sub-Station Equipments		
PLCC		
Total		
Notional Loan		
Notional Equity		
Total		
Debt-Equity Ratio		
Debt		
Equity		
Total		
Cumulative amount of Depreciation		
Cumulative Repayment of Loan		
Initial Spares*		

(Petitioner)

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Part III Form-4A

Statement of Capital Cost (To be given for relevant dates and year wise)

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

		2014-15	2015-16	2016-17	2017-18	2018-19
A	a) Opening Gross Block Amount as per books	67.33	67.33	67.33	67.33	67.33
	b) Amount of capital liabilities in A(a) above	0.00	0.00	0.00	0.00	0.00
	c) Amount of (i) IDC (ii) FC (iii) FERV & (iv) Hedging cost included in A(a) above	0.00	0.00	0.00	0.00	0.00
	d) Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in A(a) above	0.00	0.00	0.00	0.00	0.00
B	a) Addition in Gross Block Amount during the period	0.00	0.00	0.00	0.00	0.00
	b) Amount of capital liabilities in B(a) above	0.00	0.00	0.00	0.00	0.00
	c) Amount of (i) IDC (ii) FC (iii) FERV & (iv) Hedging cost included in B(a) above	0.00	0.00	0.00	0.00	0.00
	d) Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in B(a) above	0.00	0.00	0.00	0.00	0.00
C	a) Closing Gross Block Amount as per books	67.33	67.33	67.33	67.33	67.33
	b) Amount of capital liabilities in C(a) above	0.00	0.00	0.00	0.00	0.00
	c) Amount of (i) IDC (ii) FC (iii) FERV & (iv) Hedging cost included in C(a) above	0.00	0.00	0.00	0.00	0.00
	d) Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in C(a) above	0.00	0.00	0.00	0.00	0.00

Note:
Capital cost considered in line with the methodology adopted by Hon'ble CERC.

(Petitioner)

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Part-III Form-6

Financial Package upto COD

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

	Financial Package as Approved		Financial Package as on COD		As Admitted on 31.03.2014	
	Currency and Amount		Currency and Amount		Currency and	
1	2	3	4	5	6	7
Loan-I						
Loan-II						
Loan-III						
and so on						
Total Loans					INR	47.13
Equity-						
Foreign						
Domestic						
Total Equity					INR	20.20
Debt : Equity Ratio						
Total Cost					INR	67.33
	Debt	Equity	Total			
Add cap for Year 2014-15						

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Add cap for Year 2015-16						
Add cap for Year 2016-17						
Add cap for Year 2017-18						
Add cap for Year 2018-19						
Add cap for Year 2014-15						
Debt						
Equity						
Total						
Add cap for Year 2015-16						
Debt						
Equity						
Total						
Add cap for Year 2016-17						
Debt						
Equity						

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Total						
Add cap for Year 2017-18						
Debt						
Equity						
Total						
Add cap for Year 2018-19						
Debt						
Equity						
Total						
Total Capital Cost with add cap.						

Note:

* Say Rs. 800 Lakh. + US$ 5m=Rs. 3900 Lakh including US$ 5 m at an exchange rate of US$=Rs62

For example: US $ 5m, etc.

$ In case of foreign loans exchange rate considered on date of commercial operation.

(Petitioner)

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PART-III FORM- 7

Statement of Additional Capitalisation after COD

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

Sr.No.	Year	Work/Equipment proposed to be added after COD upto Cut off Date/beyond Cut-off Date	Amount capitalized /Proposed to be capitalized (Rs Lakh)	Justification	Regulations under which covered	Admitted Cost[1] (Rs Lakh) in CERC order 168/TT/2016 dated 19.12.2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2014-15	NA	NA	NA		67.33
2	2015-16					0.00
3	2016-17					0.00
4	2017-18					0.00
5	2018-19					0.00

1. In case the project has been completed and any tariff notification(s) has already been issued in the past, fill column 7 giving the cost as admitted for the purpose of tariff notification already issued by (Name of the authority) (Enclose copy of the tariff Order).

Note:

- Fill the form in chronological order year wise along with detailed justification clearly bringing out the necessity and the benefits accruing to the beneficiaries.
- In case initial spares are purchased along with any equipment, then the cost of such spares should be indicated separately.
- In case of de-capitalisation of assets separate details to be furnished. Further, the original book value and year of capitalisation of such asset to be furnished. Where de-caps are on estimated basis the same to be shown separately.

(Petitioner)

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Part-III Form 8

Calculation of Return on Equity

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

S.No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1.1	Equity as on COD/Admitted equity	20.20	20.20	20.20	20.20	20.20
1.2	Total Equity	20.20	20.20	20.20	20.20	20.20
1.3	Return on Equity*	3.13	3.13	3.13	3.13	3.13
	Total	**3.13**	**3.13**	**3.13**	**3.13**	**3.13**

Note
1: *To be calculated on average equity during the year.

(Petitioner)

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Part-III Form 9E

Calculation of Interest on Normative Loans

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

(Amount in Rs. Lakh)

Particulars	Existing 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	3	4	5	6	7
Gross Normative loan - Opening		47.13	47.13	47.13	47.13	47.13
Cumulative repayment of Normative Loan upto previous year		39.11	42.66	44.04	45.42	46.80
Net Normative loan - Opening		8.03	4.47	3.09	1.71	0.33
Increase/Decrease due to ACE/de-capitalization during the Year		0.00	0.00	0.00	0.00	0.00
Repayments of Normative Loan during the year		3.56	1.38	1.38	1.38	0.33
Net Normative loan - Closing		4.47	3.09	1.71	0.33	0.00
Average Normative Loan		6.25	3.78	2.40	1.02	0.17
Weighted average Rate of Interest of actual Loans		12.66%	12.48%	12.76%	11.16%	10.72%
Interest on Normative loan		0.79	0.47	0.31	0.11	0.02

Note:

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Part-III Form 10A

Statement of Depriciation

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Opening Capital Cost		67.33	67.33	67.33	67.33	67.33
2	Closing Capital Cost		67.33	67.33	67.33	67.33	67.33
3	Average Capital Cost		67.33	67.33	67.33	67.33	67.33
6	Depreciable value		60.60	60.60	60.60	60.60	60.60
8	Remaining depreciable value		60.60	60.60	60.60	60.60	60.60
9	Depreciation (for the period)		3.56	1.38	1.38	1.38	1.38
10	Depreciation (annualised)		3.56	1.38	1.38	1.38	1.38
11	Cumulative depreciation at the end of the period	39.11	42.66	44.04	45.42	46.80	48.18

1. In case of details of FERV and AAD, give information for the applicable period.

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Bareilly - Pantnagar Line
Name of the Transmission Element or Communication system: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.09	0.10	0.10	0.10	0.11
2	Maintenance Spares	0.17	0.17	0.18	0.18	0.19
3	Receivables	1.47	1.05	1.03	1.00	0.99
4	Total Working Capital	1.73	1.32	1.31	1.29	1.29
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.23**	**0.18**	**0.18**	**0.17**	**0.17**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	1.38	1.38	1.38	1.38	1.38
2	Interest on Loan	9E	0.00	0.00	0.00	0.00	0.00
3	Return on Equity	8	3.13	3.13	3.13	3.13	3.13
4	Interest on Working Capital	11	0.13	0.13	0.13	0.13	0.14
5	O & M Expenses		1.39	1.43	1.49	1.53	1.59
	Total AFC		**6.03**	**6.07**	**6.13**	**6.18**	**6.24**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-1A

Summary of Asset Level Cost

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

A) Summary of Capital Cost, Means of Finance of the Asset

Particular	i) Apportioned Approved Cost		ii) Summary of Actual / Projected Capital Cost						
	As per IA	As per RCE-3	As on COD/01-04-2019	2019-20 (Actual/Projected)	2020-21 (Actual/Projected)	2021-22 (Actual/Projected)	2022-23 (Actual/Projected)	2023-24 (Actual/Projected)	as on 31.03.2024
Land (Freehold Land)									
Land (Leasehold)									
Building & Civil Works									
Transmission Line									
Sub-Station									
PLCC									
Total Capital Cost as per Books									
Less: Liability									
Add: Discharge of liability									
Total Capital Cost			67.33						67.33
Equity			20.20						20.20
Debt			47.13						47.13

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition No.
1	220 kV SC Bareilly - Pantnagar Line	AC	SC	1	220	0	0	5.501	4-Mar-08	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.282	0.28	0.27	0.278	0.269
Length in km	5.501	5.501	5.501	5.501	5.501
O&M Claimed (Rupees in Lakh)	1.39	1.43	1.49	1.53	1.59

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC terminal/HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

1. Number of ba

Note:

Inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.

2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communication	Length of OPGW in km	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					
1	Transmission line	1.39	1.43	1.49	1.53	1.59
2	Substation					
3	Communication System					
	Total Normative O&M	1.39	1.43	1.49	1.53	1.59
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Effective Tax Rate[2]	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.23	0.252	0.26	0.27	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(संजीव सिंह)

PART-II FORM-4

Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

A) Details of All the Asset Covered under the Scope of the Project

Asset No. & Asset Name description	Actual COD	COD considered for Tariff	Effective COD for the project as whole (Refer C)		Weighted Average useful life of the project (Refer D)	Lapsed useful life of the project as on 01-04-2019 (Refer E)
220 kV Neak-Nawsari-1 SC line	4-Mar-03	4-Mar-03	4-Mar-03		25	16

B) Details as on 01-04-2019 for determination of Single Tariff for the Projects Commissioned prior to 01.04.2019

Particulars as on 31-03-2019 after true up of 2014- 19 period.	Asset IV					Total as on 01.04.2019 for the project as whole
a	b	c				g=(b+c+d+e+f)
Capital Cost as on 31.03.2019	0.00					67.33
Cumulative Depreciation as on 31-03-2019	48.18					48.18
Debt Equity Ratio as on 31.03.2019	70:30					70:30
Gross Equity for Normative ROE as on 31.03.2019	0.00					20.20
Gross Loan as on 31.03.2019	0.00					47.13
Cumulative Re-payment of Loan as on 31.03.2019	48.18					48.18

C) Computation of Effective COD for determining lapsed useful life of the project as whole.

Asset No.	Asset IV					Total
a	b	c	d	e	f	g=(b+c+d+e+f)
1) Actual COD of the Asset.	4-Mar-03					
2) COD considered for tariff purpose [a]	4-Mar-03					
3) No. of days between the COD of the asset considered for tariff and the COD of the Project [b&c]	0.00					
4) True up Capital Cost as on 31-03-2019 (in Lakh)	67.33					67.33
5) Weight of the Cost of an asset (in %) [c]	100.00%					
6) Weighted days = (3)*5	0.00					0.00
7) Effective COD = (i.e. COD of the Project - Total Weighted days)						3/4/2003

Note:

i) COD of the Asset considered for tariff: This normally refers the actual COD of the project. In case commission had admitted clubbing of the assets if any in previous tariff period, then the COD considered for such clubbed asset for tariff purpose has to be considered here (eg. National COD)

ii) No. of days from the COD of the Project: It refers the distance between the COD considered for tariff for the individual Asset and the COD of the Project. This has been computed by (COD of the project - COD of the individual asset)

iii) COD of the Project = The COD of the last asset of the Project.

iv) Weight of the Cost of an asset = It refers the proportion (i.e. weight) of individual asset's cost on comparing the Total capital cost of the project. It has to be computed by (Trued up cost of concerned asset as on 31.03.2019 /Total of true up cost of all the assets) x100

vi) Weighted days: This is the product of the Weight of the Cost of an asset and the distance from its COD to the COD of the project.

D) Weighted Average useful Life of the Project as whole

Particulars	Capital Cost as on 01-04-2019 after true up of 2014-19					Combined Cost	Useful life/	Weighted Cost
	Asset IV							
a	b	c				g=(b+c+d+e+f)	h	i = (g)x(h)
Freehold Land							0	
Leasehold Land							30	
Building & Other Civil Works							25	
Transmission Line	67.33					67.33	25	1683.31
Sub-Station Equipment							25	
PLCC							15	
and so on								
Total	67.33					67.33		1683.31
Weighted Average life = Total Weighted Cost/Total Combine Cost (Rounded off to get complete year)							25	Years

E) Lapsed weighted average useful life of the project & Balance weighted average Useful life

This refers to the No. of completed years from the Effective COD till the last day of the previous tariff period (i.e. 31.03.2019)

i) Effective COD	3/4/2003	
ii) Last day of the previous tariff control period	3/31/2019	
iii) No. of Completed years lapsed as on 01.04.2019 (ii)-(i)		
iv) Remaining useful life (in year) (WAL-lapsed year)		

Note: 1) The petitioner has to maintain the identity of the individual assets. In consolidation petitions, the petitioner has to maintain and provide the details of individual assets, like description, actual COD, effective COD, cut-off date, admitted capital cost, O&M Expenses etc. The petitioner has to make all claims of additional capital expenditure or de-capitalization for the project, along with Auditor certificate by clearly mentioning the individual assets to which the claim has been made. Accordingly the relevant tariff forms should show the individual asset wise breakup. 2) This form is required to be submitted when the project is commissioned prior to 01.04.2019 (i.e. the last element of the project commissioned prior to 01.04.2019. 3) The No. of completed year can be arrived by the excel function viz. YEARFRAC(31-03-2019,Effective COD) and ignore the fraction if any from the result.

(Petitioner)

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PART-III FORM- 6

Calculation of Return on Equity at Normal Rate

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

S. No	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366	365	365	365	366
1	Opening Normative Equity		20.20	20.20	20.20	20.20	20.20
2	Less: Adjustment in Equity*						
3	Adjustment during the year						
4	Net Opening Equity (Normal)		20.20	20.20	20.20	20.20	20.20
5	Add: Increase in Equity due to addition during the year/period						
6	Less: Decrease due to de-capitalisation during the year						
7	Add: Increase due to discharges during the year/period						
8	Closing Normative Equity		20.20	20.20	20.20	20.20	20.20
9	Average Normative Equity		20.20	20.20	20.20	20.20	20.20
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
12	Reduced rate of 1% decided by commission under Regulation 30 (2) (if any)						
13	Effective tax rate / MAT rate for the respective years		0.00%	0.00%	0.00%	0.00%	0.00%
14	Rate of Return on Equity (Pre Tax)		15.50%	15.50%	15.50%	15.50%	15.50%
15	Return on Equity of project cost till cut off date (Pre Tax)		3.13	3.13	3.13	3.13	3.13

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उत्तरांचल पावर कारपोरेशन

PART-III FORM 9E

Calculation of Interest on Normative Loan

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

S.No.	Particulars	As on 01-04- 2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366	365	365	365	366
1	Gross Normative loan – Opening		47.13	47.13	47.13	47.13	47.13
2	Cumulative repayment of Normative Loan upto previous year		47.13	47.13	47.13	47.13	47.13
3	Net normative loan – Opening		0.00	0.00	0.00	0.00	0.00
4	Addition in Normative loan towards the ACE		0.00	0.00	0.00	0.00	0.00
5	Adjustment of Normative Gross loan pertaining to the decapitalised asset.						
6	Normative Repayments of Normative Loan during the year		0.00	0.00	0.00	0.00	0.00
7	Adjustment of Cum. repayment pertaining to the decapitalised asset.						
8	Net Normative loan – Closing		0.00	0.00	0.00	0.00	0.00
9	Average Normative Loan		0.00	0.00	0.00	0.00	0.00
10	Weighted average Rate of Interest of actual Loans		10.93%	11.84%	11.84%	11.84%	11.84%
15	Interest on Normative loan		0.00	0.00	0.00	0.00	0.00

(Petitioner)

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PART-III FORM- 10 A

Name of the Transmission Assets: 220 kV SC Bareilly - Pantnagar Line

(Amount in Rs. Lakh)

Statement of Depreciation							
S. No.	Particulars	As on 01-04-2019 / COD	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
Life at the beginning of year							
1.1	Weighted Average useful Life of the Asset/Project.		25	25	25	25	25
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).						
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)						
Capital Base							
1.4	Opening Capital Cost		67.33	67.33	67.33	67.33	67.33
1.5	Additional Capital Expenditure dr. the year		0.00	0.00	0.00	0.00	0.00
1.6	De-Capitalisation during the year						
1.7	Closing Capital Cost		67.33	67.33	67.33	67.33	67.33
1.8	Average Capital Cost		67.33	67.33	67.33	67.33	67.33
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00
1.10	Asset having Nil, Salvage value included in 1.8						
1.11	Asset having 10% Salvage value included in 1.8		67.33	67.33	67.33	67.33	67.33
1.12	Depreciable value (1.10+ 90% of 1.11)		60.60	60.60	60.60	60.60	60.60
Depreciation for the period and Cum. Depreciation.							
1.13	Weighted Average Rate of depreciation						
1.14	Depreciation (for the period)		1.38	1.38	1.38	1.38	1.38
1.15	Depreciation (annualised)		1.38	1.38	1.38	1.38	1.38
1.16	Cumulative depreciation at the beginning of the period	48.16	49.58	50.94	52.32	53.70	55.08
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.						
1.18	Cumulative depreciation at the end of the period		49.58	50.94	52.32	53.70	55.08

(Petitioner)

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV DC Sahibabad-Patparganj Line

Name of the Transmission Element or Communication system: 220 kV DC Sahibabad-Patparganj Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.12	0.12	0.13	0.13	0.13
1.5	O & M Expenses*		2.12	2.19	2.27	2.34	2.42
	Total		**2.24**	**2.31**	**2.39**	**2.47**	**2.56**

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV DC Sahibabad-Patparganj Line
Name of the Transmission Element or Communication system: 220 kV DC Sahibabad-Patparganj Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV DC Sahibabad-Patparganj Line	AC	DC	1	220	7.002	3.501	31-Mar-83	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV DC Sahibabad-Patparganj Line

Name of the Transmission Element or Communication system: 220 kV DC Sahibabad-Patparganj Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.303	0.313	0.324	0.334	0.346
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV DC Sahibabad-Patparganj Line
Name of the Transmission Element or Communication system: 220 kV DC Sahibabad-Patparganj Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.18	0.18	0.19	0.19	0.20
2	Maintenance Spares	0.32	0.33	0.34	0.35	0.36
3	Receivables	0.37	0.39	0.40	0.41	0.43
4	Total Working Capital	0.87	0.90	0.93	0.96	0.99
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.12	0.12	0.13	0.13	0.13

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV DC Sahibabad-Patparganj Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.12	0.12	0.12	0.13	0.13
5	O & M Expenses		2.64	2.74	2.83	2.93	3.03
	Total AFC		2.75	2.86	2.95	3.06	3.16

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV DC Sahibabad-Patparganj Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length Ckm	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV DC Sahibabad-Patparganj Line	AC	DC	1	220	0	0	7.002	3/31/1983	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.377	0.391	0.404	0.419	0.433
Length in km	7.002	7.002	7.002	7.002	7.002
O&M Claimed (Rupees in Lakh)	2.64	2.74	2.83	2.93	3.03

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC terminal/HVD	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the Instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	2.64	2.74	2.83	2.93	3.03
2	Substation					
3	Communication System					
	Total Normative O&M	2.64	2.74	2.83	2.93	3.03
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	2.64	2.74	2.83	2.93	3.03

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV DC Sahibabad-Patparganj Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.346	0.377	0.391	0.404	0.419	0.433
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV DC Sahibabad-Patparganj Line

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.22	0.23	0.24	0.24	0.25
2	Maintenance Spares 15% of O&M Expenses		0.40	0.41	0.42	0.44	0.45
3	Receivables equivalent to 45 days of AFC		0.34	0.35	0.36	0.38	0.39
4	Total Working Capital		0.95	0.99	1.02	1.06	1.10
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.12	0.12	0.12	0.13	0.13

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	2.71	2.71	2.71	2.71	2.71
1.2	Interest on Loan	9E	2.66	2.29	1.99	1.44	1.09
1.3	Return on Equity[1]	8	2.39	2.39	2.39	2.39	2.39
1.4	Interest on Working Capital	11	0.21	0.20	0.20	0.19	0.18
1.5	O & M Expenses		0.61	0.63	0.65	0.67	0.69
	Total		**8.58**	**8.22**	**7.94**	**7.39**	**7.06**

Note

1: Details of calculations, considering equity as per regulation, to be furnished (As per Form 8).

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Noida Sec 62-Gazipur Line	AC	SC	1	220	3	3	26-Mar-09	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Effective tax rate[1]	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

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Part III Form-4

Abstract of admitted parameters for the existing transmission assets/elements under project.

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs.lakhs)

	Asset IV	Total Gross Block as on 31.03.2014
Name of the Assets	220 kV SC Noida Sec 62-Gazipur Line	
DOCO	26-Mar-09	
Petition Number	168/TT/2016	
Tariff order date	19.12.2017	
Particulars	**Capital Expenditure admitted as on 31.03.2014**	
Apportioned approved Cost/Revised cost estimates, if any (with reference and date of approval)	NA	
Freehold Land		
Leasehold Land		
Building & Other Civil Works		
Transmission Line		
Sub-Station Equipments		
PLCC		
Total		
Notional Loan		
Notional Equity		
Total		
Debt-Equity Ratio		
Debt		
Equity		
Total		
Cumulative amount of Depreciation		
Cumulative Repayment of Loan		
Initial Spares*		

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(Petitioner)

Part III Form-4A

Statement of Capital Cost (To be given for relevant dates and year wise)

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

		2014-15	2015-16	2016-17	2017-18	2018-19
A	a) Opening Gross Block Amount as per books	51.34	51.34	51.34	51.34	51.34
	b) Amount of capital liabilities in A(a) above	0.00	0.00	0.00	0.00	0.00
	c) Amount of (i) IDC (ii) FC (iii) FERV & (iv) Hedging cost included in A(a) above	0.00	0.00	0.00	0.00	0.00
	d) Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in A(a) above	0.00	0.00	0.00	0.00	0.00
B	a) Addition in Gross Block Amount during the period	0.00	0.00	0.00	0.00	0.00
	b) Amount of capital liabilities in B(a) above	0.00	0.00	0.00	0.00	0.00
	c) Amount of (i) IDC (ii) FC (iii) FERV & (iv) Hedging cost included in B(a) above	0.00	0.00	0.00	0.00	0.00
	d) Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in B(a) above	0.00	0.00	0.00	0.00	0.00
C	a) Closing Gross Block Amount as per books	51.34	51.34	51.34	51.34	51.34
	b) Amount of capital liabilities in C(a) above	0.00	0.00	0.00	0.00	0.00
	c) Amount of (i) IDC (ii) FC (iii) FERV & (iv) Hedging cost included in C(a) above	0.00	0.00	0.00	0.00	0.00
	d) Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in C(a) above	0.00	0.00	0.00	0.00	0.00

Note:
Capital cost considered in line with the methodology adopted by Hon'ble CERC.

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Part-III Form-6

Financial Package upto COD

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

	Financial Package as Approved		Financial Package as on COD		As Admitted on 31.03.2014	
	Currency and Amount		Currency and Amount		Currency and	
1	2	3	4	5	6	7
Loan-I						
Loan-II						
Loan-III						
and so on						
Total Loans					INR	35.94
Equity-						
Foreign						
Domestic						
Total Equity					INR	15.40
Debt : Equity Ratio						
Total Cost					INR	51.34
	Debt	Equity	Total			
Add cap for Year 2014-15						

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Add cap for Year 2015-16						
Add cap for Year 2016-17						
Add cap for Year 2017-18						
Add cap for Year 2018-19						
Add cap for Year 2014-15						
Debt						
Equity						
Total						
Add cap for Year 2015-16						
Debt						
Equity						
Total						
Add cap for Year 2016-17						
Debt						
Equity						

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Total						
Add cap for Year 2017-18						
Debt						
Equity						
Total						
Add cap for Year 2018-19						
Debt						
Equity						
Total						
Total Capital Cost with add cap.						

Note:

* Say Rs. 800 Lakh. + US$ 5m=Rs. 3900 Lakh including US$ 5 m at an exchange rate of US$=Rs62

For example: US $ 5m, etc.

$ In case of foreign loans exchange rate considered on date of commercial operation.

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PART-III FORM- 7

Statement of Additional Capitalisation after COD

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

Sr.No.	Year	Work/Equipment proposed to be added after COD upto Cut off Date/beyond Cut-off Date	Amount capitalized /Proposed to be capitalized (Rs Lakh)	Justification	Regulations under which covered	Admitted Cost[1] (Rs Lakh) in CERC order 168/TT/2016 dated 19.12.2017
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2014-15	NA	NA	NA		51.34
2	2015-16					0.00
3	2016-17					0.00
4	2017-18					0.00
5	2018-19					0.00

1. In case the project has been completed and any tariff notification(s) has already been issued in the past, fill column 7 giving the cost as admitted for the purpose of tariff notification already issued by (Name of the authority) (Enclose copy of the tariff Order).

Note:

- Fill the form in chronological order year wise along with detailed justification clearly bringing out the necessity and the benefits accruing to the beneficiaries.
- In case initial spares are purchased along with any equipment, then the cost of such spares should be indicated separately.
- In case of de-capitalisation of assets separate details to be furnished. Further, the original book value and year of capitalisation of such asset to be furnished.

Where de-caps are on estimated basis the same to be shown separately.

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Part-III Form 8

Calculation of Return on Equity

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

S.No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1.1	Equity as on COD/Admitted equity	15.40	15.40	15.40	15.40	15.40
1.2	Total Equity	15.40	15.40	15.40	15.40	15.40
1.3	Return on Equity*	2.39	2.39	2.39	2.39	2.39
	Total	**2.39**	**2.39**	**2.39**	**2.39**	**2.39**

Note
1: *To be calculated on average equity during the year.

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Part-III Form 9E

Calculation of Interest on Normative Loans

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

(Amount in Rs. Lakh)

Particulars	Existing 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	3	4	5	6	7
Gross Normative loan - Opening		35.94	35.94	35.94	35.94	35.94
Cumulative repayment of Normative Loan upto previous year		13.55	16.27	18.98	21.69	24.40
Net Normative loan - Opening		22.39	19.67	16.96	14.25	11.54
Increase/Decrease due to ACE/de-capitalization during the Year		0.00	0.00	0.00	0.00	0.00
Repayments of Normative Loan during the year		2.71	2.71	2.71	2.71	2.71
Net Normative loan - Closing		19.67	16.96	14.25	11.54	8.83
Average Normative Loan		21.03	18.32	15.61	12.90	10.19
Weighted average Rate of Interest of actual Loans		12.66%	12.48%	12.76%	11.16%	10.72%
Interest on Normative loan		2.66	2.29	1.99	1.44	1.09

Note:

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Part-III Form 10A

Statement of Depriciation

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Opening Capital Cost		51.34	51.34	51.34	51.34	51.34
2	Closing Capital Cost		51.34	51.34	51.34	51.34	51.34
3	Average Capital Cost		51.34	51.34	51.34	51.34	51.34
6	Depreciable value		46.21	46.21	46.21	46.21	46.21
8	Remaining depreciable value		46.21	46.21	46.21	46.21	46.21
9	Depreciation (for the period)		2.71	2.71	2.71	2.71	2.71
10	Depreciation (annualised)		2.71	2.71	2.71	2.71	2.71
11	Cumulative depreciation at the end of the period	13.55	16.27	18.98	21.69	24.40	27.11

1. In case of details of FERV and AAD, give information for the applicable period.

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 62-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.05	0.05	0.05	0.06	0.06
2	Maintenance Spares	0.09	0.09	0.10	0.10	0.10
3	Receivables	1.43	1.37	1.32	1.23	1.18
4	Total Working Capital	1.57	1.52	1.47	1.39	1.34
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.21**	**0.20**	**0.20**	**0.19**	**0.18**

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	2.71	2.71	2.71	0.84	0.84
2	Interest on Loan	9E	0.82	0.56	0.24	0.04	0.00
3	Return on Equity	8	2.39	2.39	2.39	2.39	2.39
4	Interest on Working Capital	11	0.12	0.12	0.12	0.09	0.09
5	O & M Expenses		0.76	0.78	0.81	0.84	0.87
	Total AFC		**6.79**	**6.56**	**6.27**	**4.20**	**4.18**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

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PART-III FORM-1A

Summary of Asset Level Cost

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

A) Summary of Capital Cost, Means of Finance of the Asset

Particular	I) Apportioned Approved Cost		II) Summary of Actual / Projected Capital Cost						
	As per IA	As per RCE-3	As on COD/01-04-2019	2019-20 (Actual/Projected)	2020-21 (Actual/Projected)	2021-22 (Actual/Projected)	2022-23 (Actual/Projected)	2023-24 (Actual/Projected)	as on 31.03.2024
Land (Freehold Land)									
Land (Leasehold)									
Building & Civil Works									
Transmission Line									
Sub-Station									
PLCC									
Total Capital Cost as per Books									
Less: Liability									
Add: Discharge of liability									
Total Capital Cost			51.34						51.34
Equity			15.40						15.40
Debt			35.94						35.94

Note: This Form is a summary form and the Data to this from should flow from other base forms.

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition No.
1	220 kV SC Noida Sec 62-Gazipur Line	AC	SC	1	220	0	0	3	29-Mar-08	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	3	3	3	3	3
O&M Claimed (Rupees in Lakh)	0.76	0.78	0.81	0.84	0.87

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield)/ GIS/HVDC terminal(HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

1. Number of ba

Note:

Inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.

2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communication	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					
1	Transmission line	0.76	0.78	0.81	0.84	0.87
2	Substation					
3	Communication System					
	Total Normative O&M	0.76	0.78	0.81	0.84	0.87
	B) O&M Claimed under Regulation 35 (3)(c)					
1	Security Expenses					

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Effective Tax Rate[2]	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.23	0.252	0.26	0.27	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM 4

Abstract of existing transmission assets/elements under project, Determination of Effective COD and Weighted Average Life for single AFC for the project as whole

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

A) Details of All the Asset Covered under the Scope of the Project

Asset No. & Asset Name description	Actual COD	COD considered for Tariff	Effective COD for the project as whole (Refer C)	Weighted Average useful life of the project (Refer D)	Lapsed useful Life of the project as on 01-04-2019 (Refer E)
220 kV Nasik-Navsari-1 D/C line	26-Mar-09	26-Mar-09	26-Mar-09	25	10

B) Details as on 01-04-2019 for determination of Single Tariff for the Projects Commissioned prior to 01.04.2019

Particulars as on 31-03-2019 after true up of 2014-19 period.	Asset IV					Total as on 01.04.2019 for the project as whole
a	b	c				g=(b+c+d+e+f)
Capital Cost as on 31.03.2019	0.00					51.34
Cumulative Depreciation as on 31-03-2019	27.11					27.11
Debt Equity Ratio as on 31.03.2019	70:30					70:30
Gross Equity for Normative ROE as on 31.03.2019	0.00					15.40
Gross Loan as on 31.03.2019	0.00					35.94
Cumulative Re-payment of Loan as on 31.03.2019	27.11					27.11

C) Computation of Effective COD for determining lapsed useful life of the project as whole.

Asset No.	Asset IV					Total
a	b	c	d	e	f	g=(b+c+d+e+f)
1) Actual COD of the Asset.	3/25/2009					
2) COD considered for tariff purpose (i)	3/26/2009					
3) No. of days between the COD of the asset considered for tariff and the COD of the Project (ii)(iii)	0.00					
4) True up Capital Cost as on 31-03-2019 (in Lakh)	51.34					51.34
5) Weight of the Cost of an asset (in %) (iv)	100.00%					
6) Weighted days = (3x5)	0.00					0.00
7) Effective COD = (i.e. COD of the Project - Total Weighted days)						3/26/2009

Note:

i) COD of the Asset considered for tariff: This normally refers the actual COD of the project. In case commission had admitted clubbing of the assets if any in previous tariff period, then the COD considered for such clubbed asses for tariff purpose has to be considered here (eg. Notional COD)

ii) No. of days from the COD of the Project: It refers the distance between the COD considered for tariff for the individual Asset and the COD of the Project. This has been computed by (COD of the project - COD of the individual asset)

iii) COD of the Project = The COD of the last asset of the Project.

iv) Weight of the Cost of an asset = It refers the proportion (i.e. weight) of individual asset's cost on comparing the Total capital cost of the project. It has to be computed by (Trued up cost of concerned asset as on 31.03.2019 /Total of true up cost of all the assets) x100

v) Weighted days: This is the product of the Weight of the Cost of an asset and the distance from its COD to the COD of the project.

D) Weighted Average useful Life of the Project as whole

Particulars	Capital Cost as on 01-04-2019 after true up of 2014-19					Combined Cost	Useful life	Weighted Cost
	Asset VI							
a	b	c				g=(b+c+d+e+f)	h	i = (g)x(h)
Freehold Land							0	
Leasehold Land							25	
Building & Other Civil Works							25	
Transmission Line	51.34					51.34	25	1283.50
Sub-Station Equipment							25	
PLCC							15	
and so on								
Total	51.34					51.34		1283.50
Weighted Average life = Total Weighted Cost/Total Combine Cost (Rounded off to get complete year)							25	Years

E) Lapsed weighted average useful life of the project & Balance weighted average Useful life

This refers to the No. of completed years from the Effective COD till the last day of the previous tariff period (i.e. 31.03.2019)

i) Effective COD	3/26/2009	
ii) Last day of the previous tariff control period	3/31/2019	
iii) No. of Completed years lapsed as on 01.04.2019 (ii)-(i)		
iv) Remaining useful life (in year) (WAL-lapsed year)		

Note: 1) The petitioner has to maintain the identity of the individual assets. In consolidation petitions, the petitioner has to maintain and provide the details of individual assets, like description, actual COD, effective COD, cut-off date, admitted capital cost,O&M Expenses etc. The petitioner has to make all claims of additional capital expenditure or de-capitalization for the project, along with Auditor certificate by clearly mentioning the individual assets to which the claim has been made. Accordingly the relevant tariff forms should show the individual asset wise breakup. 2) This form is required to be submitted when the project is commissioned prior to 01.04.2019 (i.e. the last element of the project commissioned prior to 01.04.2019. 3) The No. of completed year can be arrived by the excel function viz. YEARFRAC(31-03-2019,Effective COD) and ignore the fraction if any from the result.

(Petitioner)

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PART-III FORM- 6

Calculation of Return on Equity at Normal Rate

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

Sl. No	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)		(3)	(4)	(5)	(6)	(7)
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366	365	365	365	366
1	Opening Normative Equity		15.40	15.40	15.40	15.40	15.40
2	Less: Adjustment in Equity*						
3	Adjustment during the year						
4	Net Opening Equity (Normal)		15.40	15.40	15.40	15.40	15.40
5	Add: Increase in Equity due to addition during the year/period						
6	Less: Decrease due to de-capitalisation during the year						
7	Add: Increase due to discharges during the year/period						
8	Closing Normative Equity		15.40	15.40	15.40	15.40	15.40
9	Average Normative Equity		15.40	15.40	15.40	15.40	15.40
11	Rate of Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%	15.50%
12	Reduced rate of 1% decided by commission under Regulation 30 (2) (if any)						
13	Effective tax rate / MAT rate for the respective years		0.00%	0.00%	0.00%	0.00%	0.00%
14	Rate of Return on Equity (Pre Tax)		15.50%	15.50%	15.50%	15.50%	15.50%
15	Return on Equity of project cost till cut off date (Pre Tax)		2.39	2.39	2.39	2.39	2.39

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PART-III FORM 9E

Calculation of Interest on Normative Loan

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

S.No.	Particulars	As on 01-04- 2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
	No. of Days in the year		366	365	365	365	366
	No. of days for which tariff claimed		366	365	365	365	366
1	Gross Normative loan – Opening		35.94	35.94	35.94	35.94	35.94
2	Cumulative repayment of Normative Loan upto previous year		27.11	29.82	32.53	35.24	35.94
3	Net normative loan – Opening		8.83	6.12	3.41	0.70	0.00
4	Addition in Normative loan towards the ACE		0.00	0.00	0.00	0.00	0.00
5	Adjustment of Normative Gross loan pertaining to the decapitalised asset.						
6	Normative Repayments of Normative Loan during the year		2.71	2.71	2.71	0.84	0.84
7	Adjustment of Cum. repayment pertaining to the decapitalised asset.						
8	Net Normative loan – Closing		6.12	3.41	0.70	0.00	0.00
9	Average Normative Loan		7.48	4.76	2.05	0.35	0.00
10	Weighted average Rate of Interest of actual Loans		10.83%	11.84%	11.84%	11.84%	11.84%
15	Interest on Normative loan		0.82	0.56	0.24	0.04	0.00

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PART-III FORM - 10 A

Name of the Transmission Assets: 220 kV SC Noida Sec 62-Gazipur Line

(Amount in Rs. Lakh)

Statement of Depreciation							
S. No.	Particulars	As on 01-04-2019 / COD	2019-20	2020-21	2021-22	2022-23	2023-24
I	**No. of Days in the year**		366	365	365	365	366
II	**No. of days for which tariff claimed**		366	365	365	365	366
Life at the beginning of year							
1.1	Weighted Average useful Life of the Asset/Project.		25	25	25	25	25
1.2	Lapsed weighted average useful life of the asset/project (in Completed no. of Year).						
1.3	Balance weighted average useful life of the asset/project (in Completed no. of Years)						
Capital Base							
1.4	**Opening Capital Cost**		51.34	51.34	51.34	51.34	51.34
1.5	Additional Capital Expenditure dr. the year		0.00	0.00	0.00	0.00	0.00
1.6	De-Capitalisation during the year						
1.7	**Closing Capital Cost**		51.34	51.34	51.34	51.34	51.34
1.8	**Average Capital Cost**		51.34	51.34	51.34	51.34	51.34
1.9	Freehold land included in 1.8		0.00	0.00	0.00	0.00	0.00
1.10	Asset having NIL Salvage value included in 1.8						
1.11	Asset having 10% Salvage value included in 1.8		51.34	51.34	51.34	51.34	51.34
1.12	Depreciable value (1.10+ 90% of 1.11)		46.21	46.21	46.21	46.21	46.21
Depreciation for the period and Cum. Depreciation.							
1.13	Weighted Average Rate of depreciation						
1.14	**Depreciation (for the period)**		2.71	2.71	2.71	0.84	0.84
1.15	**Depreciation (annualised)**		2.71	2.71	2.71	0.84	0.84
1.16	Cumulative depreciation at the beginning of the period	27.11	29.82	32.53	35.24	36.09	36.93
1.17	Less: Adj. of Cum.dep. pertaining to the decapitalised asset.						
1.18	Cumulative depreciation at the end of the period		29.82	32.53	35.24	36.09	36.93

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 20-Gazipur Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-Gazipur Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.05	0.05	0.05	0.05	0.06
1.5	O & M Expenses*		0.88	0.91	0.94	0.97	1.00
	Total		**0.93**	**0.96**	**0.99**	**1.02**	**1.06**

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 20-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-Gazipur Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Noida Sec 20-Gazipur Line	AC	SC	1	220	4.354	4.354	31-Mar-83	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 20-Gazipur Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-Gazipur Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 20-Gazipur Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-Gazipur Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.07	0.08	0.08	0.08	0.08
2	Maintenance Spares	0.13	0.14	0.14	0.15	0.15
3	Receivables	0.15	0.16	0.17	0.17	0.18
4	Total Working Capital	0.36	0.37	0.38	0.40	0.41
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.05**	**0.05**	**0.05**	**0.05**	**0.06**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Noida Sec 20-Gazipur Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.05	0.05	0.05	0.05	0.05
5	O & M Expenses		1.10	1.13	1.18	1.21	1.26
	Total AFC		**1.15**	**1.18**	**1.23**	**1.27**	**1.31**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Noida Sec 20-Gazipur Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV SC Noida Sec 20-Gazipur Line	AC	SC	1	220	0	0	4.354	3/31/1983	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	4.354	4.354	4.354	4.354	4.354
O&M Claimed (Rupees in Lakh)	1.10	1.13	1.18	1.21	1.26

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW/in ka	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	1.10	1.13	1.16	1.21	1.26
2	Substation					
3	Communication System					
	Total Normative O&M	1.10	1.13	1.16	1.21	1.26
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	1.10	1.13	1.16	1.21	1.26

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Noida Sec 20-Gazipur Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[2]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV SC Noida Sec 20-Gazipur Line

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.09	0.09	0.10	0.10	0.10
2	Maintenance Spares 15% of O&M Expenses		0.16	0.17	0.18	0.18	0.19
3	Receivables equivalent to 45 days of AFC		0.14	0.15	0.15	0.16	0.16
4	Total Working Capital		0.40	0.41	0.43	0.44	0.46
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.05	0.05	0.05	0.05	0.05

(Petitioner)

(मनोज सिंह)
अतिरिक्त अभियन्ता
सम्पर्क निदेशक (नियोजन एवं वाणिज्य)
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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 20-BTPS Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-BTPS Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.15	0.15	0.16	0.16	0.17
1.5	O & M Expenses*		2.69	2.78	2.87	2.97	3.06
	Total		**2.84**	**2.93**	**3.03**	**3.13**	**3.23**

(Petitioner)

(मनोज सिंह)
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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 20-BTPS Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-BTPS Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Noida Sec 20-BTPS Line	AC	SC	1	220	13.303	13.303	30-Sep-85	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

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(Petitioner)

(मनोज सिंह)
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मण्डल निदेशक (नियोजन एवं वाणिज्य)
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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Noida Sec 20-BTPS Line

Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-BTPS Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

(मनोज सिंह)
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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Noida Sec 20-BTPS Line
Name of the Transmission Element or Communication system: 220 kV SC Noida Sec 20-BTPS Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.22	0.23	0.24	0.25	0.25
2	Maintenance Spares	0.40	0.42	0.43	0.44	0.46
3	Receivables	0.47	0.49	0.51	0.52	0.54
4	Total Working Capital	1.10	1.14	1.18	1.21	1.25
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.15**	**0.15**	**0.16**	**0.16**	**0.17**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Noida Sec 20-BTPS Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.15	0.15	0.16	0.16	0.17
5	O & M Expenses		3.35	3.46	3.59	3.71	3.84
	Total AFC		**3.50**	**3.61**	**3.75**	**3.87**	**4.01**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Noida Sec 20-BTPS Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV SC Noida Sec 20-BTPS Line	AC	SC	1	220	0	0	13.303	9/30/1986	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	13.303	13.303	13.303	13.303	13.303
O&M Claimed (Rupees in Lakh)	3.35	3.46	3.59	3.71	3.84

2.

S.No.	Name of Sub- station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVD	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communication	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	3.35	3.46	3.59	3.71	3.84
2	Substation					
3	Communication System					
	Total Normative O&M	3.35	3.46	3.59	3.71	3.84
	B] O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	3.35	3.46	3.59	3.71	3.84

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Noida Sec 20-BTPS Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
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सम्पर्क निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV SC Noida Sec 20-BTPS Line

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.28	0.29	0.30	0.31	0.32
2	Maintenance Spares 15% of O&M Expenses		0.50	0.52	0.54	0.56	0.58
3	Receivables equivalent to 45 days of AFC		0.43	0.45	0.46	0.48	0.49
4	Total Working Capital		1.21	1.25	1.30	1.34	1.39
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later,		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.15	0.15	0.16	0.16	0.17

(Petitioner)

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Sahupuri-Pasauli Line

Name of the Transmission Element or Communication system: 220 kV SC Sahupuri-Pasauli Line

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.41	0.42	0.44	0.45	0.47
1.5	O & M Expenses*		7.41	7.67	7.93	8.18	8.44
	Total		**7.82**	**8.09**	**8.37**	**8.64**	**8.91**

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Sahupuri-Pasauli Line
Name of the Transmission Element or Communication system: 220 kV SC Sahupuri-Pasauli Line

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	220 kV SC Sahupuri-Pasauli Line	AC	SC	1	220	38.7	38.7	26-Apr-79	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 220 kV SC Sahupuri-Pasauli Line

Name of the Transmission Element or Communication system: 220 kV SC Sahupuri-Pasauli Line

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

(मनोज सिंह)
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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 220 kV SC Sahupuri-Pasauli Line
Name of the Transmission Element or Communication system: 220 kV SC Sahupuri-Pasauli Line

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.62	0.64	0.66	0.68	0.70
2	Maintenance Spares	1.11	1.15	1.19	1.23	1.27
3	Receivables	1.30	1.35	1.39	1.44	1.48
4	Total Working Capital	3.03	3.14	3.24	3.35	3.45
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.41	0.42	0.44	0.45	0.47

(Petitioner)

(मनोज सिंह)
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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 220 kV SC Sahupuri-Pasauli Line

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.40	0.42	0.43	0.45	0.46
5	O & M Expenses		9.25	9.54	9.91	10.24	10.61
	Total AFC		**9.65**	**9.96**	**10.34**	**10.69**	**11.07**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 220 kV SC Sahupuri-Pasauli Line

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	220 kV SC Sahupuri-Pasauli Line	AC	SC	1	220	0	0	38.7	4/26/1979	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.288
Length in km	36.7	36.7	36.7	36.7	36.7
O&M Claimed (Rupees in Lakh)	9.25	9.54	9.91	10.24	10.61

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC terminal(B/B)	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communicatio	Length of OPGW/in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	9.25	9.54	9.91	10.24	10.61
2	Substation					
3	Communication System					
	Total Normative O&M	9.25	9.54	9.91	10.24	10.61
	B) O&M Claimed under Regulation 36 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	9.25	9.54	9.91	10.24	10.61

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 220 kV SC Sahupuri-Pasauli Line

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 220 kV SC Sahupuri-Pasauli Line

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	366	365	365	366
1	O & M Expenses - one month		0.77	0.80	0.83	0.85	0.88
2	Maintenance Spares 15% of O&M Expenses		1.39	1.43	1.49	1.54	1.59
3	Receivables equivalent to 45 days of AFC		1.19	1.23	1.27	1.32	1.36
4	Total Working Capital		3.34	3.45	3.59	3.71	3.84
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.40	0.42	0.43	0.45	0.46

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV SAHUPURI-KARMNASHA

Name of the Transmission Element or Communication system: 132 KV SAHUPURI-KARMNASHA

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.43	0.44	0.46	0.47	0.49
1.5	O & M Expenses*		7.76	8.03	8.29	8.56	8.83
	Total		8.19	8.47	8.75	9.04	9.32

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV SAHUPURI-KARMNASHA
Name of the Transmission Element or Communication system: 132 KV SAHUPURI-KARMNASHA

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV SAHUPURI-KARMNASHA	AC	SC	1	132	38.4	38.4	1-Jan-1962	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV SAHUPURI-KARMNASHA

Name of the Transmission Element or Communication system: 132 KV SAHUPURI-KARMNASHA

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV SAHUPURI-KARMNASHA
Name of the Transmission Element or Communication system: 132 KV SAHUPURI-KARMNASHA

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.65	0.67	0.69	0.71	0.74
2	Maintenance Spares	1.16	1.20	1.24	1.28	1.32
3	Receivables	1.36	1.41	1.46	1.51	1.55
4	Total Working Capital	3.17	3.28	3.39	3.50	3.61
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.43	0.44	0.46	0.47	0.49

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV SAHUPURI-KARMNASHA

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.42	0.44	0.45	0.47	0.48
5	O & M Expenses		9.68	9.98	10.37	10.71	11.10
	Total AFC		**10.10**	**10.42**	**10.82**	**11.18**	**11.58**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV SAHUPURI-KARMNASHA

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV SAHUPURI-KARMNASHA	AC	SC	1	132	0	0	38.4	1-Jan-1962	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	38.4	38.4	38.4	38.4	38.4
O&M Claimed (Rupees in Lakh)	9.68	9.98	10.37	10.71	11.10

2.

S.No.	Name of Sub-station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC (terminal/HVD	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW/links	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	9.68	9.98	10.37	10.71	11.10
2	Substation					
3	Communication System					
	Total Normative O&M	9.68	9.98	10.37	10.71	11.10
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	9.68	9.98	10.37	10.71	11.10

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV SAHUPURI-KARMNASHA

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV SAHUPURI-KARMNASHA

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.81	0.83	0.86	0.89	0.92
2	Maintenance Spares 15% of O&M Expenses		1.45	1.50	1.56	1.61	1.66
3	Receivables equivalent to 45 days of AFC		1.24	1.28	1.33	1.38	1.42
4	Total Working Capital		3.50	3.61	3.75	3.88	4.01
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.42	0.44	0.45	0.47	0.48

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV CHANDAULI- KARMNASHA
Name of the Transmission Element or Communication system: 132 KV CHANDAULI- KARMNASHA

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.20	0.20	0.21	0.22	0.22
1.5	O & M Expenses*		3.58	3.70	3.82	3.95	4.07
	Total		**3.77**	**3.90**	**4.03**	**4.17**	**4.30**

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV CHANDAULI- KARMNASHA
Name of the Transmission Element or Communication system: 132 KV CHANDAULI- KARMNASHA

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV CHANDAULI-KARMNASHA	AC	SC	1	132	17.7	17.7	1-Jan-1992	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Green field/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV CHANDAULI- KARMNASHA

Name of the Transmission Element or Communication system: 132 KV CHANDAULI- KARMNASHA

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV CHANDAULI- KARMNASHA
Name of the Transmission Element or Communication system: 132 KV CHANDAULI-KARMNASHA

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.30	0.31	0.32	0.33	0.34
2	Maintenance Spares	0.54	0.55	0.57	0.59	0.61
3	Receivables	0.63	0.65	0.67	0.69	0.72
4	Total Working Capital	1.46	1.51	1.56	1.62	1.67
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.20	0.20	0.21	0.22	0.22

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV CHANDAULI- KARMNASHA

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.19	0.20	0.21	0.22	0.22
5	O & M Expenses		4.46	4.60	4.78	4.94	5.12
	Total AFC		**4.65**	**4.80**	**4.99**	**5.15**	**5.34**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-II FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV CHANDAULI- KARMNASHA

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(Including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV CHANDAULI-KARMNASHA	AC	SC	1	132	0	0	17.7	1-Jan-1992	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	17.7	17.7	17.7	17.7	17.7
O&M Claimed (Rupees in Lakh)	4.46	4.60	4.78	4.94	5.12

2.

S.No.	Name of Sub- station	Type of Substation Conventional/(Greenfield/Brownfield)/ GIS/HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	4.46	4.60	4.78	4.94	5.12
2	Substation					
3	Communication System					
	Total Normative O&M	4.46	4.60	4.78	4.94	5.12
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	4.46	4.60	4.78	4.94	5.12

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV CHANDAULI- KARMNASHA

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV CHANDAULI- KARMNASHA

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	365
II	No. of days for which tariff claimed		366	365	365	365	365
1	O & M Expenses - one month		0.37	0.38	0.40	0.41	0.43
2	Maintenance Spares 15% of O&M Expenses		0.67	0.69	0.72	0.74	0.77
3	Receivables equivalent to 45 days of AFC		0.57	0.59	0.61	0.64	0.66
4	Total Working Capital		1.61	1.67	1.73	1.79	1.85
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.19	0.20	0.21	0.22	0.22

(Petitioner)

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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV Kiratpur-Manglore

Name of the Transmission Element or Communication system: 132 KV Kiratpur-Manglore

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.80	0.83	0.86	0.89	0.91
1.5	O & M Expenses*		14.54	15.05	15.55	16.06	16.56
	Total		**15.35**	**15.88**	**16.41**	**16.94**	**17.47**

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Kiratpur-Manglore
Name of the Transmission Element or Communication system: 132 KV Kiratpur-Manglore

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV Kiratpur-Manglore	AC	SC	1	132	72	72	1-Jan-1964	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV Kiratpur-Manglore

Name of the Transmission Element or Communication system: 132 KV Kiratpur-Manglore

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Kiratpur-Manglore
Name of the Transmission Element or Communication system: 132 KV Kiratpur-Manglore

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	1.21	1.25	1.30	1.34	1.38
2	Maintenance Spares	2.18	2.26	2.33	2.41	2.48
3	Receivables	2.56	2.65	2.74	2.82	2.91
4	Total Working Capital	5.95	6.16	6.36	6.57	6.78
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.80**	**0.83**	**0.86**	**0.89**	**0.91**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV Kiratpur-Manglore

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.79	0.82	0.85	0.88	0.91
5	O & M Expenses		18.14	18.72	19.44	20.09	20.81
	Total AFC		18.93	19.54	20.29	20.96	21.71

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV Kiratpur-Manglore

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV Kiratpur-Manglore	AC	SC	1	132	0	0	72	1-Jan-1964	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	72	72	72	72	72
O&M Claimed (Rupees in Lakh)	18.14	18.72	19.44	20.09	20.81

2.

S.No.	Name of Sub- station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC (terminal/HVD	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	18.14	18.72	19.44	20.09	20.81
2	Substation					
3	Communication System					
	Total Normative O&M	18.14	18.72	19.44	20.09	20.81
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	18.14	18.72	19.44	20.09	20.81

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

(नवराज सिंह)
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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV Kiratpur-Manglore

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV Kiratpur-Manglore

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		1.51	1.56	1.62	1.67	1.73
2	Maintenance Spares 15% of O&M Expenses		2.72	2.81	2.92	3.01	3.12
3	Receivables equivalent to 45 days of AFC		2.33	2.41	2.50	2.58	2.67
4	Total Working Capital		6.56	6.78	7.04	7.27	7.53
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.79	0.82	0.85	0.88	0.91

(Petitioner)

(मनोज सिंह)
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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Chandak-Luksar
Name of the Transmission Element or Communication system: 132 KV Chandak-Luksar

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.36	0.37	0.38	0.39	0.41
1.5	O & M Expenses*		6.46	6.69	6.91	7.14	7.36
	Total		**6.82**	**7.06**	**7.29**	**7.53**	**7.77**

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Chandak-Luksar
Name of the Transmission Element or Communication system: 132 KV Chandak-Luksar

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV Chandak-Luksar	AC	SC	1	132	32	32	1-Jan-1964	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Chandak-Luksar
Name of the Transmission Element or Communication system: 132 KV Chandak-Luksar

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Chandak-Luksar
Name of the Transmission Element or Communication system: 132 KV Chandak-Luksar

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.54	0.56	0.58	0.59	0.61
2	Maintenance Spares	0.97	1.00	1.04	1.07	1.10
3	Receivables	1.14	1.18	1.22	1.26	1.29
4	Total Working Capital	2.65	2.74	2.83	2.92	3.01
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.36**	**0.37**	**0.38**	**0.39**	**0.41**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV Chandak-Luksar

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.35	0.36	0.38	0.39	0.40
5	O & M Expenses		8.06	8.32	8.64	8.93	9.25
	Total AFC		**8.42**	**8.68**	**9.02**	**9.32**	**9.65**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV Chandak-Luksar

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltag e Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV Chandak-Luksar	AC	SC	1	132	0	0	32	1-Jan-1964	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	32	32	32	32	32
O&M Claimed (Rupees in Lakh)	8.05	8.32	8.64	8.93	9.25

2.

S.No.	Name of Sub- station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC	Voltage level kV	No. of transform ers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercia l operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:
1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communicatio	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the Instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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उत्तराखण्ड काली

1	Transmission line	8.06	8.32	8.64	8.93	9.25
2	Substation					
3	Communication System					
	Total Normative O&M	8.06	8.32	8.64	8.93	9.25
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	8.06	8.32	8.64	8.93	9.25

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV Chandak-Luksar

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV Chandak-Lukser

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.67	0.69	0.72	0.74	0.77
2	Maintenance Spares 15% of O&M Expenses		1.21	1.25	1.30	1.34	1.39
3	Receivables equivalent to 45 days of AFC		1.03	1.07	1.11	1.15	1.19
4	Total Working Capital		2.92	3.01	3.13	3.23	3.34
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.35	0.36	0.38	0.39	0.40

(Petitioner)

(मनोज सिंह)
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Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Afzalgarh-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Afzalgarh-Kalagarh

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.07	0.07	0.07	0.07	0.08
1.5	O & M Expenses*		1.23	1.27	1.32	1.36	1.40
	Total		**1.30**	**1.34**	**1.39**	**1.43**	**1.48**

(Petitioner)

(मनोज सिंह)
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सम्पद निदेशक (नियोजन एवं अभिकल्प)
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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Afzalgarh-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Afzalgarh-Kalagarh

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV Afzalgarh-Kalagarh	AC	SC	1	132	6.088	6.088	1-Jan-1975	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

(मनोज सिंह)
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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV Afzalgarh-Kalagarh

Name of the Transmission Element or Communication system: 132 KV Afzalgarh-Kalagarh

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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मुख्य निदेशक (नियोजन एवं वाणिज्य)

Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Afzalgarh-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Afzalgarh-Kalagarh

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.10	0.11	0.11	0.11	0.12
2	Maintenance Spares	0.18	0.19	0.20	0.20	0.21
3	Receivables	0.22	0.22	0.23	0.24	0.25
4	Total Working Capital	0.50	0.52	0.54	0.56	0.57
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	Interest on Working	0.07	0.07	0.07	0.07	0.08

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV Afzalgarh-Kalagarh

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.07	0.07	0.07	0.07	0.08
5	O & M Expenses		1.53	1.58	1.64	1.70	1.76
	Total AFC		**1.60**	**1.65**	**1.72**	**1.77**	**1.84**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV Afzalgarh-Kalagarh

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltag e Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV Afzalgarh-Kalagarh	AC	SC	1	132	0	0	6.088	1-Jan-1975	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	6.088	6.088	6.088	6.088	6.088
O&M Claimed (Rupees in Lakh)	1.53	1.58	1.64	1.70	1.76

2.

S.No.	Name of Sub- station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC	Voltage level kV	No. of transform ers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercia l operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communicatio	Length of OPGW/in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	1.53	1.58	1.64	1.70	1.76
2	Substation					
3	Communication System					
	Total Normative O&M	1.53	1.58	1.64	1.70	1.76
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	1.53	1.58	1.64	1.70	1.76

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV Afzalgarh-Kalagarh

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.

2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.

3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
अधिशासी अभियन्ता
सम्पदा निदेशक (निर्माण एवं वाणिज्य)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV Afzalgarh-Kalagarh

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.13	0.13	0.14	0.14	0.15
2	Maintenance Spares 15% of O&M Expenses		0.23	0.24	0.25	0.25	0.26
3	Receivables equivalent to 45 days of AFC		0.20	0.20	0.21	0.22	0.23
4	Total Working Capital		0.55	0.57	0.60	0.61	0.64
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.07	0.07	0.07	0.07	0.08

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता

Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Dhampur-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Dhampur-Kalagarh

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A					
1.2	Interest on Loan	9E			NA		
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.50	0.52	0.54	0.55	0.57
1.5	O & M Expenses*		9.09	9.41	9.72	10.04	10.35
	Total		9.59	9.92	10.26	10.59	10.92

(Petitioner)

(मनोज शाह)
अधीक्षण अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
उ०प्र०पा०ट्रा०का०लि०

Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Dhampur-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Dhampur-Kalagarh

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV Dhampur-Kalagarh	AC	SC	1	132	45	45	1-Jan-1975	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

(मनोज सिंह)
अधिशासी अभियन्ता
मण्डल निदेशक (नियोजन एवं वाणिज्य)
उ.प्र.पा.प्र.नि.लि.

Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Dhampur-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Dhampur-Kalagarh

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

(मनोज सिंह)
अधिशासी अभियन्ता
मण्डल निदेशक (निर्माण एवं वाणिज्य)
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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV Dhampur-Kalagarh
Name of the Transmission Element or Communication system: 132 KV Dhampur-Kalagarh

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.76	0.78	0.81	0.84	0.86
2	Maintenance Spares	1.36	1.41	1.46	1.51	1.55
3	Receivables	1.60	1.65	1.71	1.76	1.82
4	Total Working Capital	3.72	3.85	3.98	4.11	4.24
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.50**	**0.52**	**0.54**	**0.55**	**0.57**

(Petitioner)

(मनोज सिंह)
अधिशासी अभियन्ता
परियोजना निदेशक (निर्माण एवं वाणिज्य)

PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV Dhampur-Kalagarh

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.49	0.51	0.53	0.55	0.57
5	O & M Expenses		11.34	11.70	12.15	12.56	13.01
	Total AFC		**11.83**	**12.21**	**12.68**	**13.10**	**13.57**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

(मनोज सिंह)
उपखण्ड अधिकारी
सचिव निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV Dhampur-Kalagarh

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltag e Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV Dhampur-Kalagarh	AC	SC	1	132	0	0	45	1-Jan-1975	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	45	45	45	45	45
O&M Claimed (Rupees in Lakh)	11.34	11.70	12.15	12.56	13.01

2.

S.No.	Name of Sub-station	Type of Substation Conventional/ Greenfield/Brownfield/ GIS/HVDC terminal/HVD	Voltage level kV	No. of transform ers / Reactors/S VC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communicati on System	Type of Communicatio	Length of OPGWin ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

(मनोज सिंह)
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सम्पत्ति नियंत्रण (निर्माण एवं वाणिज्य)
उ.प्र.पा.प.नि.लि.

1	Transmission line	11.34	11.70	12.15	12.56	13.01
2	Substation					
3	Communication System					
	Total Normative O&M	11.34	11.70	12.15	12.56	13.01
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	11.34	11.70	12.15	12.56	13.01

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

(मनोज सिंह)
अधीक्षण अभियन्ता
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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV Dhampur-Kalagarh

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(गंगाज सिंह)
अधिशाषी अभियन्ता
सम्पर्क निरीक्षक (नियन्त्रण एवं वाणिज्य)
उपरोक्त कार्यालय

PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV Dhampur-Kalagarh

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.95	0.98	1.01	1.05	1.08
2	Maintenance Spares 15% of O&M Expenses		1.70	1.76	1.82	1.88	1.95
3	Receivables equivalent to 45 days of AFC		1.46	1.51	1.56	1.62	1.67
4	Total Working Capital		4.10	4.24	4.40	4.54	4.70
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.49	0.51	0.53	0.55	0.57

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्पर्क निदेशक (निर्माण एवं कार्मिक)

Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV LALITPUR-RAJGHAT
Name of the Transmission Element or Communication system: 132 KV LALITPUR-RAJGHAT

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.28	0.29	0.30	0.31	0.32
1.5	O & M Expenses*		5.05	5.23	5.40	5.58	5.75
	Total		**5.33**	**5.51**	**5.70**	**5.88**	**6.07**

(Petitioner)

(सुनील सिंह)
अधिशासी अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV LALITPUR-RAJGHAT
Name of the Transmission Element or Communication system: 132 KV LALITPUR-RAJGHAT

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV LALITPUR-RAJGHAT	AC	SC	1	132	25	25	1-Jan-1995	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield/GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

(समाज सिंह)
अधिशासी अभियन्ता
मण्डल नियंत्रक (नियोजन एवं वाणिज्य)
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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV LALITPUR-RAJGHAT
Name of the Transmission Element or Communication system: 132 KV LALITPUR-RAJGHAT

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

(मनोज सिंह)
अधिशासी अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV LALITPUR-RAJGHAT
Name of the Transmission Element or Communication system: 132 KV LALITPUR-RAJGHAT

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.42	0.44	0.45	0.46	0.48
2	Maintenance Spares	0.76	0.78	0.81	0.84	0.86
3	Receivables	0.89	0.92	0.95	0.98	1.01
4	Total Working Capital	2.07	2.14	2.21	2.28	2.35
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.28**	**0.29**	**0.30**	**0.31**	**0.32**

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता
सम्पद निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV LALITPUR-RAJGHAT

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.27	0.28	0.29	0.30	0.31
5	O & M Expenses		6.30	6.50	6.75	6.98	7.23
	Total AFC		**6.57**	**6.78**	**7.04**	**7.28**	**7.54**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

(समाज सिंह)
अधिशाषी अभियन्ता
सम्बद्ध निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV LALITPUR-RAJGHAT

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV LALITPUR-RAJGHAT	AC	SC	1	132	0	0	25	1-Jan-1995	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	25	25	25	25	25
O&M Claimed (Rupees in Lakh)	6.30	6.50	6.75	6.98	7.23

2.

S.No.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/GIS/HVDC terminal/HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:
1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communication	Length of OPGW in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	6.30	6.50	6.75	6.98	7.23
2	Substation					
3	Communication System					
	Total Normative O&M	6.30	6.50	6.75	6.98	7.23
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	6.30	6.50	6.75	6.98	7.23

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV LALITPUR-RAJGHAT

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(संजय सिंह)
कार्यकारी अभियन्ता
सम्पर्क निदेशक (नियोजन एवं वाणिज्य)
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV LALITPUR-RAJGHAT

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.53	0.54	0.56	0.58	0.60
2	Maintenance Spares 15% of O&M Expenses		0.95	0.98	1.01	1.05	1.08
3	Receivables equivalent to 45 days of AFC		0.81	0.84	0.87	0.90	0.93
4	Total Working Capital		2.28	2.35	2.44	2.52	2.61
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.27	0.28	0.29	0.30	0.31

(Petitioner)

(मनोज सिंह)

Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV ANPARA-MORWA
Name of the Transmission Element or Communication system: 132 KV ANPARA-MORWA

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.13	0.13	0.14	0.14	0.15
1.5	O & M Expenses*		2.32	2.40	2.48	2.56	2.65
	Total		**2.45**	**2.54**	**2.62**	**2.71**	**2.79**

(Petitioner)

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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV ANPARA-MORWA

Name of the Transmission Element or Communication system: 132 KV ANPARA-MORWA

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV ANPARA-MORWA	AC	SC	1	132	11.5	11.5	1-Jan-1985	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

(मनोज सिंह)
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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV ANPARA-MORWA
Name of the Transmission Element or Communication system: 132 KV ANPARA-MORWA

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh	NA				
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

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Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV ANPARA-MORWA
Name of the Transmission Element or Communication system: 132 KV ANPARA-MORWA

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.19	0.20	0.21	0.21	0.22
2	Maintenance Spares	0.35	0.36	0.37	0.38	0.40
3	Receivables	0.41	0.42	0.44	0.45	0.47
4	Total Working Capital	0.95	0.98	1.02	1.05	1.08
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.13**	**0.13**	**0.14**	**0.14**	**0.15**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV ANPARA-MORWA

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.13	0.13	0.14	0.14	0.14
5	O & M Expenses		2.90	2.99	3.11	3.21	3.32
	Total AFC		3.02	3.12	3.24	3.35	3.47

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV ANPARA-MORWA

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV ANPARA-MORWA	AC	SC	1	132	0	0	11.5	1-Jan-1985	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.279	0.289
Length in km	11.5	11.5	11.5	11.5	11.5
O&M Claimed (Rupees in Lakh)	2.90	2.99	3.11	3.21	3.32

2.

S.No.	Name of Sub- station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW(in kms	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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एनएचपीटीसी लि०

1	Transmission line	2.90	2.99	3.11	3.21	3.32
2	Substation					
3	Communication System					
	Total Normative O&M	2.90	2.99	3.11	3.21	3.32
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	2.90	2.99	3.11	3.21	3.32

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

(मनोज सिंह)
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सम्बद्ध निदेशक (निर्माण एवं परिचालन)

PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV ANPARA-MORWA

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.
2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता
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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV ANPARA-MORWA

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	366	366	365	366
1	O & M Expenses - one month		0.24	0.25	0.26	0.27	0.28
2	Maintenance Spares 15% of O&M Expenses		0.43	0.45	0.47	0.46	0.50
3	Receivables equivalent to 45 days of AFC		0.37	0.38	0.40	0.41	0.43
4	Total Working Capital		1.05	1.08	1.12	1.15	1.20
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.13	0.13	0.14	0.14	0.14

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता
मुख्य निदेशक (नियोजन एवं वाणिज्य)
उत्तरांचल पावर लिमिटेड

Part III Form-1

Summary Sheet

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited

Name of the Region: North

Name of the Project: 132 KV BINA-MORWA

Name of the Transmission Element or Communication system: 132 KV BINA-MORWA

(Amount in Rs. Lakhs)

S.No.	Particulars	Form No.	2014-15	2015-16	2016-17	2017-18	2018-19
1	2		4	5	6	7	8
1.1	Depreciation	10A	NA				
1.2	Interest on Loan	9E					
1.3	Return on Equity[1]	8					
1.4	Interest on Working Capital	11	0.13	0.13	0.14	0.14	0.15
1.5	O & M Expenses*		2.32	2.40	2.48	2.56	2.65
	Total		**2.45**	**2.54**	**2.62**	**2.71**	**2.79**

(Petitioner)

(भंवर सिंह)
अधिशाषी अभियन्ता
संयुक्त निदेशक (नियोजन एवं वाणिज्य)
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Part III Form-2

Details of Transmission Lines and Substations and Communication Systems

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV BINA-MORWA
Name of the Transmission Element or Communication system: 132 KV BINA-MORWA

Transmission Lines:

S. No.	Name of line	Type of line AC/HV DC	S/C or D/C	No. of Sub-Conductors	Voltage level kV	Line length Ckt.- km.	Line length km	Date of Commercial operation	Covered in the present petition	
									Yes/No	If No, petition No.
1	132 KV BINA-MORWA	AC	SC	1	132	11.5	11.5	1-Jan-1978	Yes	
2										
3										
4										
-										
-										
-										

Substations:

S.NO.	Name of Sub-station	Type of Substation Conventional(Gr eenfield/Brownfi eld)/ GIS/HVDC terminal/HVDC Back to Back	Voltage level kV	No. of transformers / Reactors/SV C etc. (with capacity)	No. of Bays				Date of Commercial operation	Covered in the	
					765 kV	400 kV	220 kV	132 kV & Below		Yes/N o	If No, petition No.
1	NA										
2											
3											
4											
-											
-											

Communication System:

S. No.	Name of Communication System	Type of Communication System – Communication System under ULDC/ SCADA/ WAMS/Fibre Optic Communication System/RTU/PABX etc	Technical Particulars	Number/ length	Date of Commercial operation	Covered in the present	
						Yes/No	If No, petition No.
1	NA						
2							
3							
4							
-							

(Petitioner)

(मनोज शाह)
अधीक्षण अभियन्ता
कार्यालय निदेशक (नियोजन एवं वाणिज्य)
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Part III Form-3

Normative parameters considered for tariff computations

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV BINA-MORWA
Name of the Transmission Element or Communication system: 132 KV BINA-MORWA

Year Ending March

Particulars	Unit	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%
Target Availability	%	98.00%	98.00%	98.00%	98.00%	98.00%
Normative O&M per km	Rs. Lakh	0.202	0.209	0.216	0.223	0.230
Normative O&M per bay	Rs. Lakh			NA		
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%
Receivables in Months for WC	Months	2	2	2	2	2
Bank Rate as on 01.04.2014[2]	%	13.50%	13.50%	13.50%	13.50%	13.50%

1. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance with Regulation 25 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.
2. Mention relevant date

(Petitioner)

(मनोज सिंह)
अधीक्षण अभियन्ता

Part-III Form 11

Calculation of Interest on Working Capital

Name of the Petitioner: Uttar Pradesh Power Transmission Corporation Limited
Name of the Region: North
Name of the Project: 132 KV BINA-MORWA
Name of the Transmission Element or Communication system: 132 KV BINA-MORWA

(Amount in Rs. Lakh)

Sl. No.	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	2	4	5	6	7	8
1	O & M Expenses	0.19	0.20	0.21	0.21	0.22
2	Maintenance Spares	0.35	0.36	0.37	0.38	0.40
3	Receivables	0.41	0.42	0.44	0.45	0.47
4	Total Working Capital	0.95	0.98	1.02	1.05	1.08
5	Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
6	**Interest on Working**	**0.13**	**0.13**	**0.14**	**0.14**	**0.15**

(Petitioner)

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PART-III FORM-1

Summary of Tariff

Name of the Transmission Assets: 132 KV BINA-MORWA

S.No.	Particulars	Form No.	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Depreciation	10A	NA				
2	Interest on Loan	9E					
3	Return on Equity	8					
4	Interest on Working Capital	11	0.13	0.13	0.14	0.14	0.14
5	O & M Expenses		2.90	2.99	3.11	3.21	3.32
	Total AFC		**3.02**	**3.12**	**3.24**	**3.35**	**3.47**

Note: This Form is a summary form and the Data to this from should flow from other base forms.

(Petitioner)

(पंकज सिंह)
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संचरण विकास, नियोजन एवं वाणिज्य)
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PART-III FORM-2

Details of Transmission Lines, Substations and Communication System covered in the project scope and O&M for instant asset

Name of the Transmission Assets: 132 KV BINA-MORWA

1. Transmission Lines:

S.No.	Name of Line	Type of Line AC/HVDC	S/C or D/C	No. of Sub-Conductors	Voltage Level kV	Line Bays	Line Reactor(including Switchable Reactor)	Line length km	Date of Commercial Operation	Covered in the present Petition	
										Yes/No	If No, Petition
1	132 KV BINA-MORWA	AC	SC	1	132	0	0	11.5	1-Jan-1978	Yes	

Summary:

O& M Expenses for the Transmission lines covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	0.252	0.26	0.27	0.278	0.289
Length in km	11.5	11.5	11.5	11.5	11.5
O&M Claimed (Rupees in Lakh)	2.90	2.99	3.11	3.21	3.32

2.

S.No.	Name of Sub- station	Type of Substation Conventional(Greenfield/Brownfield)/ GIS/HVDC (series/MVT)	Voltage level kV	No. of transformers / Reactors/SVC etc. (with capacity)	No. of Bays				MVA Capacity				Date of Commercial operation	Covered in the	
					765 kV	400kV	220 kV	132 kV & Below	765 kV	400 kV	220 kV	132 kV & Below		Yes/No	If No, Petition No.
1	NA														

Summary:

O& M Expenses for the Substations covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
Normative rate of O&M as per Regulation (Rupees in Lakh)	NA				
No. of units					
O&M Claimed (Rupees in Lakh)					

Note:

1. Number of bays is inclusive of line bays, ICT bays, reactor bays etc. Each ICT bays, line bays, reactor bays shall be considered separately for purpose of O&M expenses.
2. The MVA Capacity shall exclude the capacity of reactor, FSE, Stat Com

3. Communication System:

S. No.	Name of Communication System	Type of Communicatio	Length of OPGW(in ks	No. of RTU	No. of PMU	Date of Commercial operation	Capital Cost upto Cutoff	Covered in the present Petition	
								Yes/No	If No, Petition No.
1	NA								
2									
3									
-									

Summary

O& M Expenses for the Communication System covered in the instant petition	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses as per regulations	NA				
Actual O&M Expense (Rupees in Lakh)					
Original project cost / Asset related to the communication system					

Note: The O&M expenses as per regulation shall be worked on based on estimated project cost. The actual O&M expenses to be

4) Summary of O&M Expenses claim

S. No	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	A) Normative O&M					

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1	Transmission line	2.90	2.99	3.11	3.21	3.32
2	Substation					
3	Communication System					
	Total Normative O&M	2.90	2.99	3.11	3.21	3.32
	B) O&M Claimed under Regulation 35 (3)(C)					
1	Security Expenses					
2	Actual Capital Spare consumed					
3	Total O&M	2.90	2.99	3.11	3.21	3.32

Note: The security expenses and Capital Spares are to be submitted on estimated basis for the purpose

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जयपुर

PART-III FORM-3

Normative Parameters considered for Tariff Computation

Name of the Transmission Assets: 132 KV BINA-MORWA

Year Ending March

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Base Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Base Rate of Return on Equity on Additional Capitalization after Cut-off Date [1]	%	NA					
Target Availability	%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%
Normative O&M per km	Rs. Lakh	0.230	0.252	0.260	0.270	0.279	0.289
Normative O&M per Bay	Rs. Lakh	NA					
Normative O&M per MVA	Rs. Lakh						
Spares for WC as % of O&M	%	15%	15%	15%	15%	15%	15%
Receivables in Days for WC	Days	60	45	45	45	45	45
Bank Rate as on first day of financial year[3]	%	13.50%	12.05%	12.05%	12.05%	12.05%	12.05%
Lapsed life as on 01.04.2019 and beginning of every year(in completed years)	No. of years						

1. The additional capitalization on account of Change-in-Law to be excluded and To be equivalent to Weighted Average Rate of Loan in accordance with first Proviso to Regulation 30.

2. To be supported by necessary documents and calculations. Effective tax rate is to be computed in accordance withRegulation 31 i.e. actual tax (or estimated tax)/gross income, where gross income refers the profit before tax.

3. For Tariff Petition, it should be 1.4.2019, while for True-up Petition, it should be 1st April of the respective financial years.

(Petitioner)

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PART-III FORM-11

Calculation of Interest on Working Capital

Name of the Transmission Assets: 132 KV BINA-MORWA

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01-04-2019 / as on COD whichever is later	2019-20	2020-21	2021-22	2022-23	2023-24
I	No. of Days in the year		366	365	365	365	366
II	No. of days for which tariff claimed		366	365	365	365	366
1	O & M Expenses - one month		0.24	0.25	0.26	0.27	0.28
2	Maintenance Spares 15% of O&M Expenses		0.43	0.45	0.47	0.48	0.50
3	Receivables equivalent to 45 days of AFC		0.37	0.38	0.40	0.41	0.43
4	Total Working Capital		1.05	1.08	1.12	1.16	1.20
5	Bank rate as on 01.04.2019 or as on 01st April of the COD year, whichever is later.		12.05%	12.05%	12.05%	12.05%	12.05%
6	Interest on Working Capital		0.13	0.13	0.14	0.14	0.14

(Petitioner)

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Annexure – 6

Anil Jain
Director(Planning & Commercial)

J.P.Power Transmission Corporaton Ltd.
(U.P. Govt. Undertaking)
5th floor, Shakti Bhawan,
14-Ashok Marg, Lucknow-226001
Phone : 0522 2218511
Email- director_comm@upptcl.org

CIN No.U40101UP2004SGC028687
GSTIN-09AAACU8823E1Z9

No.462 Dir(P&C)/UPPTCL/2020 Date: 09 July, 2020

SUB : LETTER OF AUTHORIZATION

Pursuant to power delegated by the Board of Directors of U.P. Power Transmission Corporation Limited on dated 09.07.2020, I do hereby authorize Sh. Manoj Singh, Superintending Engineer to sign on Vakalatnama, Affidavits and to appear and conduct case proceedings on behalf of the company before APTEL, CERC, UPERC etc.

(Anil Jain) 9/7/20

Director (Planning & Commercial)

(Anil Jain)
Director (Planning & Commercial)

(मनोज सिंह)
अधिशासी अभियन्ता

Annexure-7

Fee Acknowledgement

Counterfoil (Office Copy)

Transaction Id.:	900138f5d38b14204ecd
PayU Id. :	16240267921
Status:	success

Received From :	U.P. POWER TRANSMISSION CORPORATION LIMITED (UPPTCL)		
The Sum of Rs. :	940287		
Fee Type	Petition Filing Fees	**Dated :**	Nov 18, 2022, 12:40 PM
Fee Mode	NEFTRTGS		

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Annexure – 8

Form - I (Payment Related Report)		
Particulars		
1.	Name of the Petitioner / Applicant	U.P. POWER TRANSMISSION CORPORATION LIMITED UPPTCL
2.	Address of the Petitioner / Applicant	5th FLOOR SHAKTI BHAWAN 14 ASHOK MARG LUCKNOW Lucknow*
3.	Subject Matter	(Approval under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations'1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2014 for Truing up Transmission Tariff for 2014-19 Tariff Block and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations' 2019 for determination of Transmission Tariff for 2019-24 Tariff Block for in respect of Uttar Pradesh Power Transmission Corporation Limited (UPPTCL) owned Transmission Lines/System conveying electricity to other States.)
4.	Diary No.	
5.	Petition No., if any	
6.	Details of generation / Transmission assets	TT
	(a) Generating station / units	132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA , 132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA ,132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore ,132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV

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		Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-

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		Pasauli Line,132 KV Afzalgarh-Kalagarh,132 KV ANPARA-MORWA ,132 KV BINA-MORWA ,132 KV Chandak-Luksar ,132 KV CHANDAULI- KARMNASHA , 132 KV Dhampur-Kalagarh ,132 KV Kiratpur-Manglore , 132 KV LALITPUR-RAJGHAT ,132 KV SAHUPURI-KARMNASHA ,Bareilly- Pantnagar Line,Khodri-Saharanpur-1 Line,Khodri-Saharanpur-2 Line,Muzaffarnagar (Nara)-Roorkee Line,Noida Sec 20-BTPS Line,Noida Sec 20-Gazipur Line,Noida Sec 62-Gazipur Line,Sahibabad-Patarganj Line,Sahupuri-Pasauli Line
	(b) Capacity in MW / ATC	129771,245133,245133,682109,377292,959216,153474
	(c) Date of commercial operation	01/01/1975,01/01/1985,01/01/1978,01/01/1964,01/01/19
	(d) Period of which fee paid	2019-2024
	(e) Amount Paid	Rs. 940287 paid towards filing fee
		with Transaction ID: 900138f5d38b14204ecd
7.	Application fee for licence	
	(a) Trading licence	
	(b) Transmission licence	
	(c) Period of which paid	
	(d) Amount of fee paid	
8.	Fee paid for Miscellaneous Application	
9.	Fee paid for Interlocutory Application	
10	Fee paid for Regulatory Compliance petition	
	Fee paid for Review Application	
	Licence fee for inter-state trading	
	(a) Category	
	(b) Period	
	(c) Amount of fee paid	
	(d) Surcharge, if any	
	Annual Registration Charge for Power Exchange	
	(a) Period	
	(b) Amount of turnover	
	(c) Fee paid	
	(d) Surcharge, if any	
	Details of fee remitted	
	(a) UTR No.	
	(b) Date of remittance	
	(c) Amount remitted	

Note : While Sl. Nos. 1 to 3 and 16 are compulsory, the rest may be filled up as applicable.

Signature of the authorized signatory with date	

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