

**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations '2014 for determination of Transmission Tariff from anticipated DOCOs to 31/03/2019 for **Asset I:** 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:** 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "**Eastern Region Strengthening Scheme – VIII**" in Eastern Region.

PETITIONER

Power Grid Corporation of India Ltd. (Govt. of India undertaking)

Registered office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi- 110 016

Corporate office: "Saudamini", Plot no.2, Sector-29, Gurgaon -122 001. (Haryana)

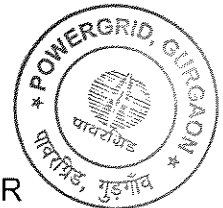
Power Grid Corporation of India Ltd., the petitioner in the matter, is filing petition under Regulation-86 of CERC (Conduct of Business) Regulations, 1999 for approval of transmission tariff for the above said assets under Transmission System for "**Eastern Region Strengthening Scheme – VIII**" for tariff block 2014-19 period.

In terms of Regulation 3(2) of the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004, copy of complete tariff application is hereby served to the respondents (beneficiaries of **Eastern Region**), for information and necessary action in the matter.

The tariff application is hereby served through the nodal officers of the respondents for CERC matters, on the addresses as mentioned below:

ADDRESSES OF NODAL OFFICERS

1. BIHAR STATE POWER (HOLDING) COMPANY LTD
(FORMERLY BIHAR STATE ELECTRICITY BOARD -BSEB)
VIDYUT BHAVAN, BAILEY ROAD, PATNA – 800 001
REPRESENTED BY ITS CHAIRMAN
2. WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY
LIMITED
BIDYUT BHAWAN, BIDHAN NAGAR
BLOCK DJ, SECTOR-II, SALT LAKE CITY
CALCUTTA - 700 091
REPRESENTED BY ITS CHAIRMAN
3. GRID CORPORATION OF ORISSA LTD.
SHAHID NAGAR, BHUBANESWAR - 751 007
REPRESENTED BY ITS CHAIRMAN cum MANAGING DIRECTOR



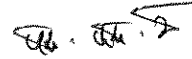
4. DAMODAR VALLEY CORPORATION
DVC TOWER, MANIKTALA
CIVIC CENTRE, VIP ROAD, CALCUTTA - 700 054
REPRESENTED BY ITS CHAIRMAN

5. POWER DEPARTMENT
GOVT. OF SIKKIM, GANGTOK - 737 101
REPRESENTED BY ITS COMMISSIONER & SECRETARY (POWER)

6. JHARKHAND STATE ELECTRICITY BOARD
IN FRONT OF MAIN SECRETARIAT
DORANDA, RANCHI - 834002
REPRESENTED BY ITS CHAIRMAN

Kindly acknowledge the receipt.

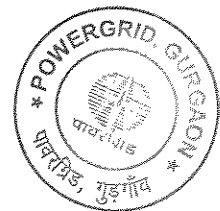
**PETITIONER
POWER GRID CORPORATION OF INDIA LTD.
REPRESENTED BY**



(S. S. Raju)

ADDL. GENERAL MANAGER (COMMERCIAL)

**GURGAON
DATED: 29.06.2015**



BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

PETITION FOR

APPROVAL OF TRANSMISSION TARIFF
for

Asset I:01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/Sand **Asset II:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/Sunder Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.

PETITION NO. :

TARIFF BLOCK: 2014 - 2019

POWER GRID CORPORATION OF INDIA LTD.

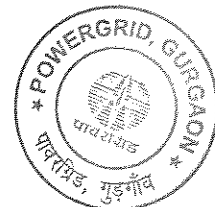
REGISTERED OFFICE

B-9, QUTAB INSTITUTIONAL AREA, KATWARIA SARAI,
NEW DELHI – 110 016

CORPORATE CENTRE

"SAUDAMINI", PLOT NO-2, SECTOR-29,
GURGAON-122 001 (HARYANA)
EPABX: 0124-2571 700 TO 719, FAX: 0124-2571989

Handwritten signature/initials



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO.:

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations '2014 for determination of Transmission Tariff from anticipated DOCO to 31/03/2019 for **Asset I:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.

Power Grid Corporation of India Ltd.

--- PETITIONER

Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi. 110 016.

Corporate Centre: 'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

Bihar State Power (Holding) Company Ltd

----- RESPONDENTS

(Formerly Bihar State Electricity Board -BSEB)

Vidyut Bhavan, Bailey Road, Patna – 800 001

Represented by its Chairman

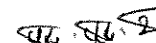
And Others

Sl. No.	Description	Enclosure No.	Page No.
1	Index	-	
2	Letter for registration	-	
3	Memo of Parties	-	
4	Affidavit	-	
5	Application for determination of Tariff	-	
6	Copy of Investment approval	Encl.- 1	19-23
7	MOM of SCM OF ER and ERPC	Encl.- 2	24-30
8	Schematic Diagram & SLD	Encl. – 3	31-33
10	Delay reason documents	Encl. – 4a & 4b	34-50
11	Copy of Auditor's Certificates	Encl. – 5	51-54
12	Tariff Filing Formats	Encl. –6	55-105

FILED BY

POWER GRID CORPORATION OF INDIA LTD.

REPRESENTED BY

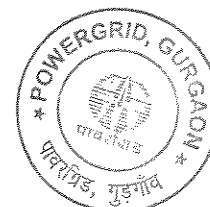


(S. S. RAJU)

GURGAON

DATED: 29.06.2015

Additional General Manager (Commercial)



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO.:

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations '2014 for determination of Transmission Tariff from anticipated DOCO to 31/03/2019 for **Asset I:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.

Power Grid Corporation of India Ltd.

--- PETITIONER

Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi. 110 016.

Corporate Centre : 'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

Bihar State Power (Holding) Company Ltd

----- RESPONDENTS

(Formerly Bihar State Electricity Board -BSEB)

Vidyut Bhavan, Bailey Road, Patna – 800 001

Represented by its Chairman

And Others

To
The Secretary
Central Electricity Regulatory Commission
New Delhi 110001

Sir,

The application filed under Regulation 86 of CERC (Conduct of Business) Regulation, 1999 and CERC (Terms and Conditions of Tariff) Regulations'2014 for determination of Transmission tariff from anticipated DOCOs to 31.03.2019 may please be registered.

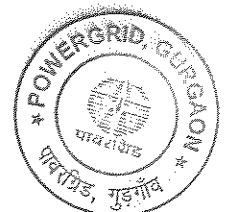
**FILED BY
POWER GRID CORPORATION OF INDIA LTD.**

REPRESENTED BY


(S. S. RAJU)

**GURGAON
DATED: 29.06.2015**

Additional General Manager (Commercial)



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO.:

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations '2014 for determination of Transmission Tariff from anticipated DOCO to 31/03/2019 for **Asset I:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.

Power Grid Corporation of India Ltd.

--- PETITIONER

Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi. 110 016.

Corporate Centre: 'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

Bihar State Power (Holding) Company Ltd

----- RESPONDENTS

(Formerly Bihar State Electricity Board -BSEB)

Vidyut Bhavan, Bailey Road, Patna – 800 001

Represented by its Chairman

And Others

MEMO OF PARTIES

Power Grid Corporation of India Ltd.

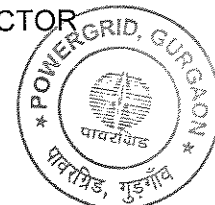
---PETITIONER

VERSUS

Eastern Region


1. BIHAR STATE POWER (HOLDING) COMPANY LTD
(FORMERLY BIHAR STATE ELECTRICITY BOARD -BSEB)
VIDYUT BHAVAN, BAILEY ROAD, PATNA – 800 001
REPRESENTED BY ITS CHAIRMAN
2. WEST BENGAL STATE ELECTRICITY DISTRIBUTION COMPANY
LIMITED
BIDYUT BHAWAN, BIDHAN NAGAR
BLOCK DJ, SECTOR-II, SALT LAKE CITY
CALCUTTA - 700 091
REPRESENTED BY ITS CHAIRMAN
3. GRID CORPORATION OF ORISSA LTD.
SHAHID NAGAR, BHUBANESWAR - 751 007
REPRESENTED BY ITS CHAIRMAN cum MANAGING DIRECTOR





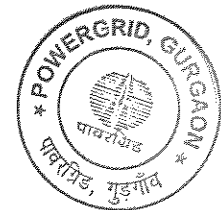
4. JHARKHAND STATE ELECTRICITY BOARD
IN FRONT OF MAIN SECRETARIAT
DORANDA, RANCHI - 834002
REPRESENTED BY ITS CHAIRMAN
5. DAMODAR VALLEY CORPORATION
DVC TOWER, MANIKTALA
CIVIC CENTRE, VIPROAD, CALCUTTA - 700 054
REPRESENTED BY ITS CHAIRMAN
6. POWER DEPARTMENT
GOVT. OF SIKKIM, GANGTOK - 737 101
REPRESENTED BY ITS COMMISSIONER & SECRETARY (POWER)

FILED BY
POWER GRID CORPORATION OF INDIA LTD.
REPRESENTED BY


(S. S. RAJU)

Additional General Manager (Commercial)

GURGAON
DATED: 29.06.2015



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO.:

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations '2014 for determination of Transmission Tariff from anticipated DOCO to 31/03/2019 for **Asset I:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.

Power Grid Corporation of India Ltd.

--- PETITIONER

Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi. 110 016.

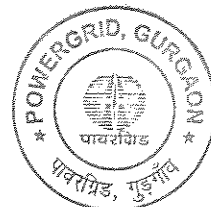
Corporate Centre: 'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

Bihar State Power (Holding) Company Ltd
(Formerly Bihar State Electricity Board -BSEB)
Vidyut Bhavan, Bailey Road, Patna – 800 001
Represented by its Chairman And Others

----- RESPONDENTS

Affidavit verifying the Petition

I, S SRaju, S/O Sh S B Raju, working as Additional General Manager (Commercial) in the PowerGrid Corporation of India Ltd., having its registered Office at B-9, Institutional Area, Katwaria Sarai, New Delhi-110 016, do hereby solemnly affirm and state as under:-



[Handwritten signature]

1. I am the Additional General Manager of Power Grid Corporation of India Ltd., the representative of the Petitioner in the above matter, and am duly authorized to make this affidavit.
2. I submit that the enclosed tariff Petition is being filed for determination of Transmission Tariff for 2014-19 Block for from DOCO to 31/03/2019 for **Asset I:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.
3. I submit that no other tariff Petition except this Petition has been filed directly or indirectly for approval of Transmission Tariff for 2014-19 Block from anticipated DOCO to 31/03/2019 for **Asset I:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.
4. The statements made in the tariff Petition herein are based on petitioner company's official records maintained in the ordinary course of business and I believe them to be true and correct.
5. The documents attached with the petition are legible copies and duly attested by me.



(DEPONENT)

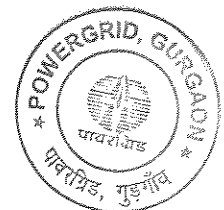
VERIFICATION

Solemnly affirmed at Gurgaon on this 29th day of June, 2015 that the contents of the above affidavit are true to my knowledge and belief and no part of it is false and nothing material has been concealed there from.


(DEPONENT)



ATTESTED

 29/6/2015
 SAJJAN SINGH
 ADVOCATE & NOTARY
 AT GURGAON



**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO.:

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations '2014 for determination of Transmission Tariff from anticipated DOCO to 31/03/2019 for **Asset I:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:**01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region.

Power Grid Corporation of India Ltd.

--- PETITIONER

Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi. 110 016.

Corporate Centre : 'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

Bihar State Power (Holding) Company Ltd

----- RESPONDENTS

(Formerly Bihar State Electricity Board -BSEB)

Vidyut Bhavan, Bailey Road, Patna – 800 001

Represented by its Chairman

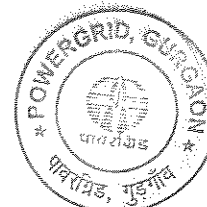
And Others

To
The Hon'ble Chairman and
his Companion Members of The Hon'ble CERC

The humble application filed by the Petitioner

MOST RESPECTFULLY SHOWETH

- 1.0 That, Hon'ble Commission have made CERC (Terms and Conditions of Tariff) Regulations, 2014 and issued vide notification dated 21.02.2014. These regulations shall remain in force for a period of 5 years w.e.f. 01.04.2014, unless reviewed earlier or extended by the Hon'ble Commission.
- 2.0 The Petitioner herein, Power Grid Corporation of India Ltd. is a Government Company within the meaning of Companies Act, 1956. In exercise of powers under sub-section (1) of section 38(1) the Electricity Act 2003, the Government of India has declared the Petitioner herein as the Central Transmission Utility (CTU). The petitioner being CTU is deemed to be a transmission licensee under section 14 of the Electricity Act' 2003.



- 3.0 That the instant petition covers approval of transmission tariff from anticipated DOCO to 31/03/2019 for **Asset I:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region, which is anticipated to be put under commercial operation **w.e.f.30.06.2015**.
- 4.0 The tariff for the said transmission systems shall be determined by the Hon'ble Commission in accordance with the CERC (Terms and Conditions of Tariff) Regulations, 2014.

5.0 Approval of the Scheme

That the petitioner has been entrusted with the implementation of Eastern Region Strengthening Scheme VIII (ERSS-VIII). To contain the over voltage issue at many substations in Eastern Region and to cater to the increase in demand in Subhashgram area of Kolkata in West Bengal, a comprehensive system strengthening scheme has been evolved which inter-alia include reactive compensations at 400kV substations like Muzaffarpur, Rourkela, Indravati and Jeypore of Eastern Region. While 2x125 MVAR bus reactors would be installed at Muzaffarpur, 1x125MVAR bus reactors would be installed each at Rourkela, Indravati and Jeypore. Due to space constraint 1x125MVAR reactor at Muzaffarpur and Jeypore would be installed by replacing 1x63MVAR bus reactor. The 2 nos. of 63 MVAR bus reactors thus released from Muzaffarpur&Jeypore shall be used as regional spare.

The administrative approval and expenditure sanction to the transmission project was accorded by the Board of Directors of POWERGRID vide **C/CP/ERSS VIII dated 28th August'2013 for Rs 73.48 crores including an IDC of Rs 3.61 crores based on April 2013 price level**, a copy whereof is attached hereto as **Encl.-1, (page..1.9...to.23.)**

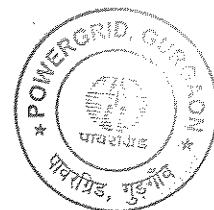
The above system requirement was discussed in the Standing committee Meeting of ER held on 08/02/2012 at NRPC New Delhi. The matter was further discussed and agreed in the 21st TCC & ERPC Meeting held on 20-21 April, 2012 at Rajarhat, Kolkata.

Copy of the relevant extract of minutes is enclosed. **Encl.-2, (page²⁴.....to³⁰.)**

- 5.1 The scope of work covered under "Eastern Region Strengthening Scheme VIII" is as follows:

• Installation of Bus Reactor

- 2x125 MVAR bus reactor at Muzaffarpur (one 125MVAR reactor would be installed by replacing the existing 63MVAR bus reactor at Muzaffarpur, which shall be used as spare)
- 1x125 MVAR bus reactor at Rourkela



14/4/12

- 1x125 MVAR bus reactor at Indravati
- Replacement of existing 1x63MVAR bus reactor with 1x125 MVAR bus reactor at Jeypore (63 MVAR reactor thus released shall be used as spare reactor)
- Shifting of Line Reactor
 - Shifting of 2x50 MVAR line reactor from Patna end of 400kV Kahalgaon/Barh – Patna D/c line to Balia end of 400kV Patna-Balia D/c line.
- Augmentation of Transformation Capacity
 - Addition of 1x500 MVA, 400/220kV ICT with associated bays at Subhashgram along with 2 nos. of 220kV equipped line bays.

The Schematic diagram^{2 SLD} of the subject system is attached hereto as Encl.-3, (page. 31...to 33...)

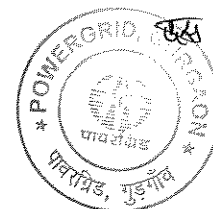
The following Assets are covered under the instant petition for determination of tariff:-

S. No	Name of Asset	Anticipated DOCO
1	Asset I: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S.	30.06.2015
2	Asset II: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S	30.06.2015

The instant petition covers approval of transmission tariff for aforesaid 02 Nos. of Assets under Transmission System associated with ERSS-VIII scheme in Eastern Region from anticipated DOCO to 31.03.2019.

6.0 Implementation Schedule

As per the Investment Approval, the commissioning schedule of the project is 20 months from the date of Investment Approval. The date of Investment Approval is 27.08.2013 hence the assets are to be declared under commercial operation in progressive manner upto 27.04.2015 against which the subject assets are anticipated to be commissioned and put under commercial operation with following DOCO (anticipated) as per the details given below:



SN.	Name of Asset	Anticipated DOCO	Delay
1	Asset I: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S.	30.06.2015	02 months
2	Asset II: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S	30.06.2015	02 months

Thus there is a delay of around 02 months in the commissioning of elements as mentioned above.

Reasons for Delay:

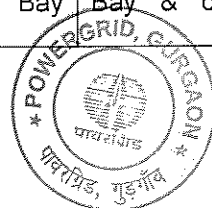
Asset-I delay reason:

The delay in commissioning of Bus reactor at Indravati S/S is attributable to the slow progress of bay extension work for Bus reactor owing to carrying out the works during the charged condition of the Sub Station.

It is submitted that the construction work was carried out in a charged 400 KV Switch Yard. As such works (which involved excavation, civil works, JCB & heavy equipment movement, etc) had to be done with complete safety of manpower as well as without disturbing the adjacent charged equipment's. Due to this the pace of work was sometimes slow.

The nature of this extension work required shutdown and isolation of various SS elements at various point of time. The same are elaborated as below:

Shutdown applied/ approved on	Period of Shutdown	Nature of work carried out	Isolation required for
10.10.14/ 10.10.14	10.10.14 to 31.10.14 (09:00 hrs to 17:00 hrs)	Bay extension for reactor (civil work)	Not req.
03.11.14/ 03.11.14	03.11.14 (09:00 hrs to 17:00 hrs)	Bay extension for reactor	Not req.
04.11.14/ 04.11.14	04.11.14 (08:00 hrs to 18:00 hrs)	Bay extension for reactor (excavation of foundation for CT, CB, Isolator, etc)	Tie Bay, Rengali reactor Bay, Rengali Main Bay & corresponding isolators.
05.11.14/ 05.11.14	05.11.14 (10:30 hrs to	Bay extension for reactor (Tie Bay & Main Bay	Tie Bay, Rengali Main Bay & corresponding



Handwritten signature/initials

	18:00 hrs)	extension work)	isolators.
01.12.14/ 09.12.14	09.12.14 to 31.12.14	Bay extension for reactor	Not req.
23.04.15/ 23.04.15	23.04.15 to 13.05.15 (10:00 hrs to 18:00 hrs)	Bay extension for reactor (ladder foundation for CB & other erection work)	Not req.

The documentary correspondences in this regard are enclosed as **Encl-4a** (page.34...to.45.)

Further, on few occasions, there was unforeseen time gap between shutdown sought and its corresponding approval. Since, planning for such extension work cannot be exactly assessed in the FR stage, it is thus re-iterated that in spite of our best effort to minimize the delay unforeseen difficulties as detailed above, delay were experienced due since works were to be carried out due to typical nature of construction site i.e. work in a charged Switch Yard with safety and with out disturbing the other charged equipments which reduced the pace of work.

Asset-II delay reason:

The delay in commissioning of Bus reactor at Jeypore SS is attributable to the revision in scope of bay extension work for Bus reactor.

Revision of Scope of work :

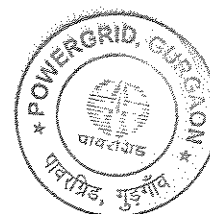
Original scope of work: Replacement of existing 63MVAR Bus Reactor with new 125MVAR Bus reactor on the same foundation.

In view of high voltage problem at 400kV Jeypore substation (PG) and space constraints there, replacement of existing 63 MVAR bus reactor by 125 MVAR bus reactor at Jeypore was approved in the 1st-2012 Standing Committee held on 08-02-2012.

Later, in the standing committee meeting on Power System Planning in Eastern Region held at NRPC, New Delhi on 02.05.2014, 125 MVAR Bus Reactor at Jeypore it was agreed that shall be installed as separate bus reactor (In paralleled to existing 63 MVAR Bus Reactor)

The documentary correspondences in this regard are enclosed as **Encl-4b** (page.46...to.52.)

Due to revision in scope, initial engg drawings / designs and layout got revised, which had a cascading effect on the further bay extension work of the said reactor at Jeypore SS. and intimation to the party, approved on submission etc Hence delay caused is due to re-engineering and change in item /quantity to be supplied by the sub-venders., which was unforeseen and beyond the control of the petitioner.



7.0 Completion Cost

7.1 That the application for determination of tariff is filed in line with provision 7 (2) of tariff Regulation 2014 applicable for 2014-19 period. Further, that the present petition covers approval of tariff based on actual/estimated expenditure incurred up to DOCO and additional capitalization projected to be incurred from DOCO to 31.03.2019 in respect of the subject asset as per detail given below. That the capital cost incurred/estimated upto anticipated DOCO and projected to be incurred during 2015-16 & 2016-17 is duly certified by auditors in auditor/management certificate; copy whereof in respect of the assets covered in this petition is enclosed herewith as **Encl - 5 (pages 7. to 54.)**

(Rs in Lakhs)

Name of the element	Cost as per FR (apportioned)	Estimated Cost on DOCO	Est. Add Cap 1.4.15 to 31.3.16	Est. Add Cap 1.4.16 to 31.3.17	Total Estimated Cost	Spares	
						SS	TL
Asset I	1023.69	817.32	117.93	100.00	1035.25	-	-
Asset II	748.67	700.20	84.74	50.00	834.94	-	-
Total	1772.36	1517.52	202.67	150.00	1870.19	-	-

7.2 Against the total apportioned approved cost of **Rs. 1772.36 lakhs**, the anticipated completed cost is **Rs.1870.19 lakhs**, so there is cost variation in comparison to apportioned cost.

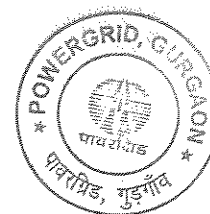
Initial spares:

NIL (No initial spares have been claimed for the subject assets)

7.3 The details of underlying assumptions for additional capitalization for this asset is summarized below:

The admissibility of additional capital expenditure (Add. Cap.) incurred after DOCO is to be dealt in accordance with the provisions of Regulation 14 (1), the extract of clause 14 (1) of the Regulations, 2014 is reproduced as under:

"Additional Capitalization and Decapitalisation"



(1) *The capital expenditure in respect of new projects or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and upto the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) *Undischarged liabilities recognized to be payable at a future date;*
- (ii) *Works deferred for execution*
- (iii) *Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*
- (iv) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and*
- (v) *Change in Law or compliance of any existing law: Provided that the details of works assetwise / workwise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.*

7.4 The additional Capitalization incurred/projected to be incurred in the contextual asset is mainly on account of Balance/Retention Payments and hence the same may be allowed by Hon'ble Commission. The details of underlying reasons for additional capitalization for **Asset I:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and **Asset II:01** No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under Transmission System for "Eastern Region Strengthening Scheme – VIII" in Eastern Region are given in form -7.

That the petition for determination of tariff is being filed in line with provision 7 (2) of Tariff Regulation 2014 applicable for 2014-19 period.

At the Jeypore S/S experience high voltage problem even during normal operating conditions. To control voltage to a permissible level installation of 1x125MVAR shunt reactor at Jeypore S/S was proposed by Powergrid. The existing 1x63MVAR bus reactor at 400kV Jeypore sub-stations would be replaced by new 1x125MVAR and the existing shunt reactor of 1x63MVAR at Jeypore S/s would be kept as spare for future use in Eastern Region.

8.0 TRANSMISSION TARIFF

8.1 The tariff for block 2014-2019 has been worked out as per CERC (Terms and Conditions of Tariff) Regulations, 2014, issued vide notification dated. 21.02.2014. In the present petition the transmission tariff has been calculated taking actual / estimated expenditure upto DOCO and estimated additional capitalization from DOCO to 31.03.2019. Calculations for working out the tariff along with supporting documentation are attached hereto as **Encl-6 (Page 5... to 105...)**



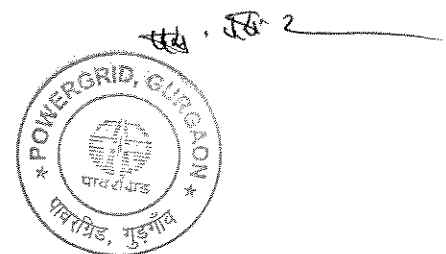
8.2 The annual transmission tariff for the tariff period 2014-19 is summarized as below:

(Rs in Lacs)

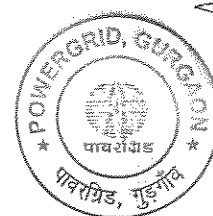
Name of the asset #	2014-15	2015-16	2016-17	2017-18	2018-19
Asset I	-	170.45	244.39	250.48	247.25
Asset II	-	152.59	213.72	216.15	213.92

- While calculating Annual fixed charges, rates as specified in the Tariff Regulation'2014 have been considered.

- 8.3 That, it is submitted that the petitioner being liable to pay income tax at MAT rate, the ROE has been calculated @ 19.610 % after grossing up the ROE with MAT rate of 20.961% based on the rate prescribed by the Hon'ble Commission as per illustration under regulation 25 (2) (i) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014. That as per clause 25 (3) of the above regulation, the grossed up rate of ROE at the end of every financial year shall be trued up based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the IT authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up rate on ROE after truing up shall be recovered or refunded to beneficiaries on year to year basis. It is further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of tax including interest received from IT authorities shall be recoverable /adjustable during / after completion of income tax assessment of the financial year.
- 8.4 That as provided in clause 49 of the Tariff Regulations 2014, the deferred tax liability before 01.04.2009 shall be recovered from the beneficiaries or the long term customers /DICs as and when the same gets materialized.
- 8.5 Service tax on transmission has been put in the negative list w.e.f. 01.04.2012 and accordingly the Transmission Charges indicated at para 8.2 above, is exclusive of Service Tax and the same shall be borne and additionally paid by the respondent(s) to the petitioner and the same shall be charged, billed separately by the petitioner if at any time the transmission charges is withdrawn from the negative list. Further, any additional taxes are to be paid by the petitioner on account of demand from Govt / Statutory authorities, the same may be allowed to be recovered from the beneficiaries.



- 8.6 In the tariff calculation for 2014-19 period Interest on Loan has been calculated on the basis of rate prevailing as on 01.04.2014. The change in Interest rate due to floating rate of interest applicable, if any, during 2014-19 period for the project needs to be claimed / adjusted over the tariff block of 05 years directly from the beneficiaries.
- 8.7 The transmission charges at para-8.2 above is inclusive of O&M expenses for the project derived based on the norms for O&M expenditure for Transmission System as specified under regulation 29 (3) (a) of the tariff regulations for block 2014-19. It is the understanding of the petitioner that these norms for O&M expenditure been arrived by the Hon'ble Commission after considering (i) normalized actual O&M expenses of the petitioner on its various projects in various regions during the year 2008-09, 2009-10, 2010-11, 2011-12 and 2012-13. It is submitted that the wage revision of the employees of the petitioner company is due during 2014-19 and actual impact of wage hike which will be effective from a future date has also not been factored in fixation of the normative O&M rates prescribed for the tariff block 2014-19. The scheme of wage revision applicable to CPSUs being binding on the petitioner, the petitioner reserves the right to approach the Hon'ble Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike during 2014-19.
- 8.8 The application filing fee, expenses incurred on publication of Notices in News papers and License fee may be allowed to be recovered separately from the respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014. The fees and charges to be paid by the petitioner as ISTS licensee (deemed ISTS licensee) under CERC (Fees and Charges of RLDC and other matters) Regulations as amended from time to time shall also be recoverable from the DICs as provided under clause 52(2) (a).
- 8.9 The Govt. of india in the proposed GST to be introduced w.e.f. 01.04.2016 has proposed to be introduce tax on transmission needs to be recovered from the beneficiaries
- 8.10 The Transmission Charges and other related Charges indicated at para8.2 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 respondent(s) to the petitioner and the same shall be charged, billed separately by the petitioner on the respondents.



पुस. ०५.२

9.0 Sharing of Transmission Charges

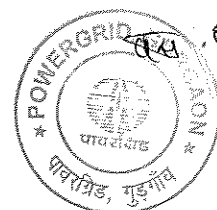
The Tariff for Transmission of Electricity (Annual Fixed Cost) as per para 8.2 of petition shall be shared as per Regulation-43 of CERC (Terms and Conditions of Tariff) Regulations, 2014. These charges shall be recovered on monthly basis and the billing collection and disbursement of Transmission Charges shall be governed by provision of CERC (sharing of interstate Transmission Charges and Losses) Regulations, 2010.

In the circumstances mentioned above it will be just and proper that the transmission tariff for the assets covered under this petition be allowed to be charged from the Respondents on the basis set out above. **The Petitioner submits that the Encl.-1 to Encl.-5 may please be treated as integral part of this petition.**

PRAYER

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

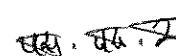
- 1) Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition, as per para –8.2 above.
- 2) Admit the capital cost as claimed in the Petition and approve the Additional Capitalization projected to be incurred.
- 3) Tariff may be allowed on the estimated completion cost, since few elements of the project are yet to be completed, the completion cost for the assets covered under instant Petition are within the overall project cost.
- 4) Allow the Petitioner to approach Hon'ble Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, if any, during period 2014-19.
- 5) Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided under clause 25 of the Tariff regulations 2014.
- 6) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, and other expenditure (if any) in relation to the filing of petition.



- 7) Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.
- 8) Allow the petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2014-19 period, if any, from the respondents.
- 9) Allow the Petitioner to bill and recover Service tax on Transmission Charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list at any time in future. Further, any taxes and duties including cess etc. imposed by any statutory/Govt/municipal authorities shall be allowed to be recovered from the beneficiaries.
- 10) Allow the Petitioner if GST is imposed on transmission charges under the proposed GST w.e.f. 01.04.2016 the same may be allowed to be recovered from the beneficiaries
- 11) Allow tariff as 90% of the Annual Fixed Charges in accordance with clause 7 (i) of Regulation 7 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for purpose of inclusion in the PoC charges.
- 12) Allow the petitioner to bill Tariff from actual DOCO and also the petitioner may be allowed to submit revised Certificate and tariff Forms (as per the Relevant Regulation) based on actual DOCO.

and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice

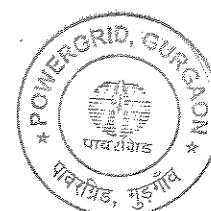
FILED BY
POWER GRID CORPORATION OF INDIA LTD.
REPRESENTED BY



(S. S. RAJU)

Additional General Manager (Commercial)

GURGAON
DATED: 29.06.2015



पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
POWER GRID CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)



केन्द्रीय कार्यालय : "सौदामिनी" प्लॉट सं-2, सेक्टर-29, गुडगाँव-122 001, हरियाणा
फोन : 0124-2571700-719 फैक्स : 0124-2571760, 0124-2571761 तार : 'नेटग्रिड'
Corporate Office : "Saudamini" Plot No-2, Sector-29, Gurgaon - 122 001 Haryana
Tel.: 0124-2571700 - 719 Fax : 0124-2571760, 0124-2571761 Gram : 'NATGRID'

संदर्भ संख्या / Ref. No.

C/CP/ ERSS-VIII

केन्द्रीय कार्यालय / CORPORATE CENTRE

August 28, 2013

MEMORANDUM

SUB: INVESTMENT APPROVAL FOR "EASTERN REGION STRENGTHENING SCHEME-VIII (ERSS-VIII)"

The Board of Directors of POWERGRID, in exercise of powers delegated to it by the Department of Public Enterprises (DPE), Ministry of Heavy Industries and Public Enterprises, Government of India through its Office Memorandum No. 26(3)/2005-GM-GL-92 dated 1st May, 2008 and Office Memorandum No. DPE/11(2)/97-Fin. dated 22nd July, 1997 (modified subsequently through Office Memorandum No. 18(24)/2003-GM-GL.64 dated 5th August, 2005), have accorded investment approval for "Eastern Region Strengthening Scheme-VIII (ERSS-VIII)" in its 290th meeting held on August 27, 2013, as per the details given below:

1. SCOPE OF PROJECT

Broad scope of works is given below:

Installation of Bus Reactor

- Installation of 2x125 MVAR bus reactor at Muzaffarpur (one 125 MVAR reactor would be installed by replacing 63 MVAR bus reactor at Muzaffarpur)
- Installation of 1x125 MVAR bus reactor at Rourkela
- Installation of 1x125 MVAR bus reactor at Indravati
- Installation of 1x125 MVAR bus reactor by replacing existing 1x63 MVAR bus reactor at Jeypore

Shifting of Line Reactor

- Shifting of 2x50 MVAR line reactors from Patna end of 400kV Kahalgaon/Barh – Patna D/c line to Balia end of 400kV Patna-Balia D/c line.

Augmentation of Transformation Capacity

- Addition of 1x500 MVA, 400/220kV ICT at Subhashgram along with associated bays and 2 nos. of 220kV equipped line bays
(2 nos. 63 MVAR bus reactors thus released from Muzaffarpur & Jeypore shall be used as regional spare)

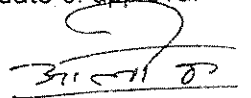
2. PROJECT COST & FUNDING

The estimated cost of the project based on April, 2013 price level is ₹ 73.48 Crore including IDC of ₹ 3.61 Crore. The abstract cost estimate is attached as Annexure-I.

The project is being funded through domestic borrowing/ bonds/ ECBs and POWERGRID's internal resources with Debt Equity ratio of 70:30.

3. Commissioning Schedule

The project is scheduled to be commissioned within 20 months from the date of approval of Board of Directors, i.e. August 27, 2013.



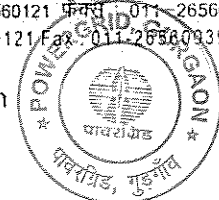
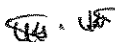
(Alok)

Addl. Gen. Manager (CP)

पंजीकृत कार्यालय : पी-9, कुतब इंस्टीट्यूशनल एरिया, कटवारिया साराय नई दिल्ली-110016 दूरभाष : 011-26560121 फैक्स : 011-26560039 तार : 'नेटग्रिड'
Registered Office : B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016 Tel.: 011-26560121 Fax: 011-26560039 Gram: 'NATGRID'

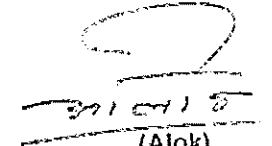
स्वहित एवं राष्ट्रहित में ऊर्जा बचाए

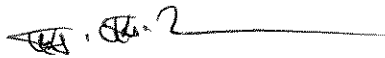
Save Energy for Benefit of Self and Nation

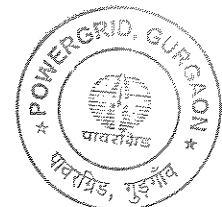


Distribution:

1. PS to Secretary (Power), MoP, Shram Shakti Bhawan, New Delhi- 110 001
2. Chairman, CERC, Core-3, 6th floor, SCOPE complex, New Delhi- 110 003
3. Chairman, CEA, Sewa Bhawan, R.K. Puram, New Delhi- 110 066
4. Chairman, BSEB, Bidyut Bhawan, Bailey Road, Patna – 800 001.
5. Chairman, WBSEB, Bidyut Bhawan, Bidhan Nagar, Block- DJ, Sector – II, Salt Lake City, Kolkata – 700 091.
6. Chairman, JSEB, Jharkhand Vidyut Bhawan, Nepal House, Doranda, Ranchi – 02.
7. Secretary (Power), Power Department, Govt. of Sikkim, Gangtok – 727 102.
8. CMD, GRIDCO, Vidyut Bhawan, Janpath, Bhubaneswar – 751 007.
9. Member Secretary, ERPC, 14, Golf Club Road, Kolkata – 700 033.
10. Advisor, PAMD, Planning Commission, Yojana Bhawan, New Delhi.
11. Member Secretary, Planning Commission, Yojana Bhawan, New Delhi.
12. Member (Power Systems), CEA, R.K.Puram, New Delhi – 110 066.
13. Secretary, CEA, Sewa Bhawan, R.K.Puram, New Delhi – 110 066 – 03 copies
14. Joint Secretary (Trans.), MoP, Shram Shakti Bhawan, New Delhi.
15. Joint Secretary & Financial Advisor, MoP, Shram Shakti Bhawan, New Delhi.
16. Director (Trans.), MoP, Shram Shakti Bhawan, New Delhi.
17. Joint Secretary (Plan Finance Div.-II), Ministry of Finance, North Block, New Delhi.
18. Director (Plan Finance-II Div.), Ministry of Finance, North Block, New Delhi.
19. Joint Secretary, Ministry of Statistics & Programme Implementation, Sardar Patel Bhawan, New Delhi.
20. Deputy Secretary, Cabinet Secretariat, Rashtrapati Bhawan, New Delhi.
21. Under Secretary, Finance & Budget Section, MoP, New Delhi.


(Alok)
Addl. Gen. Manager (CP)





Important Note:

The Board has desired that the following critical activities may be monitored:

- (i) Award of the package by August'13/ September'13.
- (ii) Risk Management Matrix indicating various milestones to be monitored for the subject project is attached at Annexure-II.

Distribution:

CEO, POSOCO

COO (CTU)/ COO (Telecom)

ED: CMG/ ERP/ Commercial/ HR/ LD&C/ HVDC and QA&I/ OS/ Eggg.- SS, TL & Civil / Engg. – Cost & FS/ ERTS-II

GM: Cost Engg./ Smart Grid

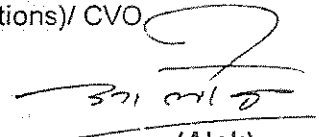
GM I/c: Finance/ / CS & MM / ESMD & CSR/ ERTS-I

DGM: Law

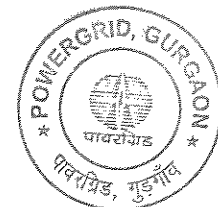
Company Secretary

For kind information of:

Director (Projects)/ Director (Finance)/ Director (Personnel)/ Director (Operations)/ CVO


(Alok)
Addl. Gen. Manager (CP)





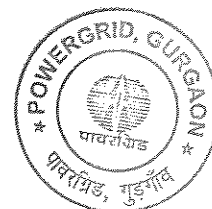
ABSTRACT COST ESTIMATE
(BASE COST)

EASTERN REGION STRENGTHENING SCHEME – VIII

(Cost updated to April 2013 price level)

Sl. No.	DESCRIPTION	AMOUNT (Rs. in Crs.)
A	<u>Civil Works</u> i) Infrastructure for substations	1.20
B	<u>Equipment Cost</u> a) Sub-Stations	60.22
C	Sub Total A TO B	61.42
D	Incidental Expenditure During construction (IEDC) @ 10.75% of C	6.60
E	Contingencies @ 3% of C	1.84
	Sub Total (A to E)	69.87
F	Interest During Construction(IDC)	3.61
	GRAND TOTAL	73.48
Note: 1. Loan has been assumed to be available from Domestic sources. 2. Interest rate on Loan has been considered @10.5% for Domestic Loan subject to actuals. 3. Debt:Equity ratio has been considered as 70:30.		

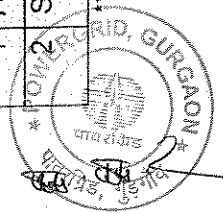
Handwritten signature/initials



RISK MANAGEMENT MATRIX FOR ERSS-VIII

Risk Parameters	Intermediate Milestone		Completion	Responsibility Centre**	Remarks
	MS-1				
A	Award of Major Work Pkgs.				
1	Sub-station Ext. Pkgs.	Within 1 month of Investment Approval (IA)		CS/Engg.	
B	Supply of Reactors & Transformers				
1	Supply of 125 MVAR Reactor.		11-12 months from LOA	<u>Region</u> Chief Manager-Muzaffarpur Dy. General Manager, Rourkela Chief Manager-Indravati Chief Manager-Jeypore Addl. General Manager, Subhashgram Addl. General Manager, Balia	
2	Supply of 500MVA, 400/220kV Transformer.		11-12 months from LOA	<u>Region</u>	
C	Construction of Sub-station				
1	Availability/ Handover of Land	Not Applicable		<u>Region</u>	
2	Site Mobilisation	Within 3 months of LOA		<u>Region</u>	

** Overall in-charge for Responsibility Centre is Head of the respective Region/Department.



Deliberation in the TCC meeting

TCC agreed with technical requirement of the scheme and referred to ERPC for approval.

Item no.A1.16:Augmentation of 400/220 kV transformer capacity from 2x315 MVA to (2x315+1x500) MVA at Subhashgram (PG)

The existing ICTs at 400/220 kV Subhashgram (PG) S/s having capacity of 2x315 MVA are presently getting loaded at around 75% of its rating and it would further increase due to load growth and additional 220 kV interconnections being set up by WBSETCL with its adjoining S/s. While augmentation of transformer capacity by 1x315 MVA ICT was proposed, PGCIL suggested for considering 1x500 MVA, 400/220kV ICT at Subhashgram (PG). CEA advocated the proposal.

Deliberation in the TCC meeting

TCC agreed with technical requirement of the scheme and referred to ERPC for approval.

Item no.A1.17: Proposal of WBSETCL for 220 kV connectivity of their new 220 kV s/s at Sirakol to the 400/220 kV Subhasgram s/s (PG)

PGCIL agreed to provide additional 2 nos. 220kV line bays at Subhashgram(PG) along with the 1x500MVA 400/220kV ICT being added at the substation to enable WBSETCL to construct a 220kV D/C line from Subhashgram (PG) to 220kV Sirakol S/S by WBSETCL.

Deliberation in the TCC meeting

TCC agreed with technical requirement of the scheme and referred to ERPC for approval.

Item no.A1.18: Proposal of PGCIL for establishment of 400kV substation at Darbhanga and Motihari in North Bihar and associated connectivity to the grid network in ER

The following inter State and intra-State works for establishment of 400kV sub-station at Darbhanga and Motihari in north Bihar were decided:

I. 400kV sub-station at Darbhanga

(a) ISTS Works:

- Establishment of 2x500 MVA, 400/220kV sub-station at Darbhanga and 400kV Muzaffarpur - Darbhanga D/c line with triple snow bird conductor.

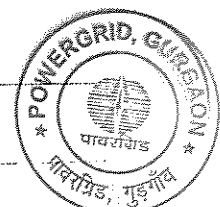
(b) Intra-State Transmission works under the scope of BSEB (BSEB has to confirm and implement the following intra-state system strengthening works matching with time line of 400kV Darbhanga sub-station).

- 2x160 MVA, 220/132kV sub-station at Samastipur by LILO of 220Kv Begusarai(BSEB) - KTPS D/C.

21st TCC Meeting

Minutes

12



existing Patna-Balia 400kV D/c (quad) line is 195 km long having no line reactors at either end. Powergrid proposed to shift the 2x 50MVAR line reactors from Patna and to install them as fixed line reactors at Balia end in NR of 400kV Patna – Balia D/c line.

Deliberation in the TCC meeting

TCC agreed with technical requirement of the scheme and referred to ERPC for approval.

Deliberation in the ERPC meeting

ERPC approved the scheme.

Item no.A4.5: Proposal for bus reactors at 400kV Jeypore, Indravati and Rourkela S/s of POWERGRID

The mentioned S/Ss experience high voltage problem even during normal operating conditions. To control voltage to a permissible level installation of 1x125 MVAR shunt reactor at each of the above sub-stations was proposed by Powergrid. The existing 1x63MVAR bus reactor at 400kV Jeypore sub-stations would be replaced by new 1x125MVAR and the existing shunt reactor of 1x63MVAR at Jeypore S/s would be kept as spare for future use in Eastern Region. The bus reactor of 1x125MVAR capacity each at Indravati and Rourkela S/stns. would be in addition to the existing reactors.

Deliberation in the TCC meeting

TCC agreed with technical requirement of the scheme and referred to ERPC for approval.

In this regard, Powergrid confirmed that spares would be used only for contingency purposes inside Eastern Region. Powergrid reiterated that spares, if used for other regions, prior permission of ERPC must be taken.

Deliberation in the ERPC meeting

ERPC agreed with the technical requirement of the scheme.

Item no.A4.6: Construction of 400kV Ranchi (PG) – Patratu D/C line and 2x315MVA 400/220kV substation at Patratu by JSEB & provision of 2 nos. 400kV Bay at 400kV Ranchi sub-station of POWERGRID – Proposal of JSEB

Govt. of Jharkhand has decided to construct the 400kV Ranchi (PG) – Patratu D/C line and 400/220kV substation at Patratu through Powergrid as deposit work of JSEB. It would enable JSEB to draw the State's share from upcoming IPPs viz, Essar Power and Corporate (Abhijeet) Projects and also would facilitate to evacuate power

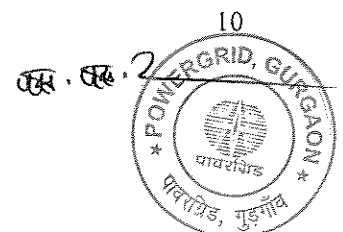
21st ERPC Meeting



Minutes

28

25



Central Electricity Authority, SP&PA Division
Sewa Bhawan, R.K. Puram, New Delhi-110066

No.66/5/99-SP&PA/ 280- 301

Dated: 09-03-2012

1. Member (Transmission),
Bihar State Electricity Board
Vidyut Bhavan, Baily Road,
Patna-800021
2. Director (System),
Damodar Valley Corporation
DVC Towers, VIP Road,
Kolkata-700054.
3. Member Secretary,
Eastern Regional Power Committee,
14, Golf Club Road, Tollygange,
Kolkata-700033.
4. Director (Commercial),
Grid Corporation of Orissa Ltd,
Jan path, Bhubaneswar-751022.
5. Director (Transmission),
Orissa Power Transmission Corporation
Ltd,
Jan path, Bhubaneswar-751022.
6. Director (System Operation),
West Bengal State Electricity Transmission
Company Ltd, Vidyut Bhavan, 5th Floor,
Block-D, Bidhannagar, Sector-II
Kolkata-700091.
7. Principal Chief Engineer cum Secretary,
Power Department
Government of Sikkim, Sikkim.
8. Director (Projects),
Power Grid Corporation of India
"Saudamini" Plot No. 2, Sector-29
Gurgaon-122001
9. Director (Technical),
NTPC Limited,
Engineering Office Complex,
A-8, Sector 24, Noida.
10. Member (Transmission),
Jharkhand State Electricity Board,
In front of Main Secretariat,
Doranda, Ranchi-834002.
11. Executive Director (T&RE),
NHPC Ltd, NHPC Office complex,
Sector 33, Faridabad-121003.
12. General Manager,
Eastern Regional Load Dispatch Center, 14,
Golf Club Road, Tollygange,
Kolkata-700033.

Sub: Summary record of discussions of the 1st-2012 Standing Committee Meeting on Power System Planning in Eastern Region held on 08-02-12 at NRPC, New Delhi.

Sir,

Minutes of the meeting for the Standing Committee Meeting on Power System Planning in Eastern Region held on 08-02-12 at NRPC, Katwaria Sarai, New Delhi, and LTOA minutes of PGCIL are uploaded on the CEA website; www.cea.nic.in. (path to access: Wings of CEA/Power Systems/Standing Committee on Power System Planning/EASTERN REGION) for kind perusal.

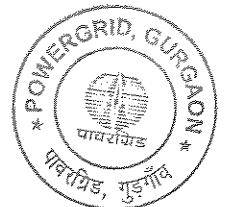
Yours faithfully,


(Dr. R. Saha)
Director (SP&PA)

Copy to:

- (i) Sh. S K Soonce, CEO, POSOCO, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-16.
- (ii) Shri Jyotimay Bhaumik, CEO, M/s DPSC Limited, Plot No.X-1,2&3, Block EP, Sector-V, Salt Lake city, Kolkata-700 091.
- (iii) Shri Varun K. Jha, Vice President, M/s Tata Steel Limited, Bistupur, Jamshedpur-831 001
- (iv) Director(NR, WR, SR, NER, PSPM)

स. प. २



(vi) Shifting of 2x50MVAR line reactor from Patna end of 400kV Kahalgaon/ Barh – Patna D/C line to Balia end of 400kV Patna – Balia D/C line

PGCIL explained that at present there are 2x50 MVAR line reactors at Patna end of 257 km long Kahalgaon - Patna 400kV D/c (quad) line. As the line was subsequently looped-in and looped-out at Barh TPS resulting in 217 km long Kahalgaon – Barh 400kV D/c line and 93 km long Barh – Patna 400kV D/c line, the reactors at Patna end of Barh - Patna 400kV D/c line provides high degree of compensation resulting in resonance like phenomena when one of the D/c line is out of service. On the other hand, existing Patna-Balia 400kV D/c (quad) line is 195 kms. long having no line reactors at either end. It was proposed to shift the 2x 50MVAR line reactors from Patna and to install them as fixed line reactors at Balia end in NR of 400kV Patna – Balia D/c line.

Members were agreeable to the proposal.

(vii) Proposal for bus reactors at 400kV Jeypore, Indravati and Rourkela S/s of PGCIL

In view of very high voltage problem at the above stated 400kV substations even during normal operating conditions, installation of 1x125 MVAR shunt reactor each at these stations was proposed by PGCIL to control voltage to a permissible level. On query from Director (SP&PA), CEA about any shunt reactor connected to these 400kV substations, and space availability, PGCIL official stated that the existing 1x63MVAR bus reactor each at 400kV Jeypore sub-stations would be replaced by 1x125MVAR and the existing shunt reactor of 1x63MVAR at Jeypore would be kept as spare for future use in Eastern Region. The bus reactor of 1x125Mvar each at Indravati and Rourkela would be in addition to the existing reactor.

Members were agreeable to the proposal.

3.0 Proposals of JSEB:

(i) Construction of 400kV Ranchi (PG) – Patratu D/C line and 2x315MVA 400/220kV substation at Patratu by JSEB & provision of 2 nos. 400kV Bay at 400kV Ranchi sub-station of PGCIL.

Regarding the above proposal of JSEB, CE, JSEB stated that Govt. of Jharkhand has decided to construct the 400kV Ranchi(PG) – Patratu D/C line and 400/220kV substation at Patratu through PGCIL as deposit work of JSEB, which would enable to draw the State's share from upcoming IPPs viz. Essar Power and Corporate (Abhijeet) Projects and also facilitate to evacuate power from the existing Penughat





Central Electricity Authority
 प्रणाली योजना एवं परियोजना मूल्यांकन विभाग
 System Planning & Project Appraisal Division
 सेवा भवन, आर. के. पुरम, नई दिल्ली-110066
 Sewa Bhawan, R. K. Puram, New Delhi-110066

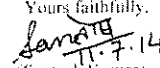
No.66/S/2013-SP&PA/12/3-35

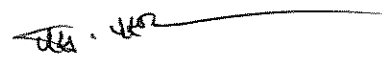
dated: 11.07.2014

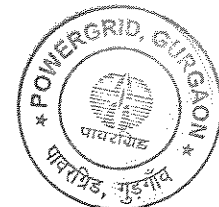
1. Managing Director, Bihar State Power Transmission Company, Vidyut Bhavan, Baily Road, Patna-800021. Tel. 0612-2504442 Fax No. 0612-2504968	2. Director (System), Damodar Valley Corporation DVC Towers, VIP Road, Kolkata-700054. Tel. 033-23557934 Fax No. 23554841
3. Member Secretary, Eastern Regional Power Committee, 14, Golf Club Road, Tollygange, Kolkata-700033, Tel. No. 033-24235199 Fax No. 033-24171358	4. Director (Commercial), Grid Corporation of Orissa Ltd, Jan path, Bhubaneswar-751022. Tel. No. 0674-2541127 Fax No. 0674-2543452
5. Director (Transmission), Orissa Power Transmission Corporation Ltd, Jan path, Bhubaneswar-751022, Tel. No. 0674-2540098 Fax No. 0674-2541904	6. Director (System Operation), West Bengal State Electricity Transmission Company Ltd, Vidyut Bhavan, 5th Floor, Block-D, Bidhannagar, Sector- H, Kolkata-700091. Tel. No. 033-23370206 Fax No. 033-2337206
7. Principal Chief Engineer cum Secretary, Power Department Government of Sikkim, Sikkim, Tel. No. 03592-2023440 Fax No. 03592-202927	8. Director (Projects), Power Grid Corporation of India "Saudamini" Plot No. 2, Sector-29, Gurgaon-122001 Tel. No. 0124-2571816 Fax No. 0124-2571979
9. Director (Technical), NTPC Limited, Engineering Office Complex, A-8, Sector 24, Noida, Tel. No. 24362050 Fax No. 24362421	10. Member (Transmission), Jharkhand State Electricity Board, In front of Main Secretariat, Doranda, Ranchi-834002. Tel. No. 0651-2400827 Fax No. 0651-2400799
11. Executive Director (T&RE), NHPC Ltd, NHPC Office complex, Sector 33, Faridabad-121003, Tel. No. 0129-2255805 Fax No. 0129-2256055	12. General Manager, Eastern Regional Load Dispatch Center, 14, Golf Club Road, Tollygange, Kolkata-700033. Tel No. 033-24235867 Fax No. 033-24235809
13. Shri S. K. Soonee, CFO, POSOCO B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. No. 26524525 Fax No. 26852843	

Subj: Summary record of discussions of the 1st - 2014 meeting of the Standing Committee on Power System Planning of Eastern Region on 02.05.2014 at NRPC, New Delhi.
 Sir,

Minutes of the meeting for the Standing Committee Meeting on Power System Planning in Eastern Region was held on 02.05.2014 at NRPC, Katwaria Sarai, New Delhi is uploaded on the CEA website: www.cea.nic.in. (path to access: Wings of CEA/Power Systems/Standing Committee on Power System Planning/EASTERN REGION) for kind perusal.

Yours faithfully,

 11.7.14
 (Santosh Kumar)
 Dy. Director (SP&PA)





single agency preferably by Powergrid. Others Members unanimously agreed to get the above works done by POWERGRID on compressed time schedule.

COO CTU raised the emerging issue how to provide connection agreement/LTA for cross border power transfer to India, and desired the views of members. As the issue required through discussions, Member (PS) CEA suggested to hold a separate meeting of CEA, CTU, POSOCO & CERC shortly. Members agreed and welcomed the suggestion.

5.0 Conversion of 50 MVAR Line Reactor presently installed at Jeerat end of Bahrapur - Jeerat 400 kV line to Bus Reactor in parallel with existing Bus Reactor at Jeerat

Director (SP& PA), CEA informed that conversion of 50 MVAR fixed line reactor at Jeerat end of 400kV Jeerat-Bahrapur section (140km) to switchable one was agreed in the 25th TCC/ERPC. Subsequently, CTU suggested to convert the line reactor to a switchable bus reactor in parallel with existing 63 MVAR Bus Reactor at Jeerat and it was agreed in the 26th TCC / ERPC meeting in January, 2014.

MS I/C ERPC opined that as of now there would be no requirement of this line reactor at Jeerat and the same could be shifted and installed as bus reactor at Bahrapur. COO CTU explained that 50 MVAR line reactor could be utilized to control voltage. ERLDC opined that voltage at Jeerat in most occasion remains low, but sometimes experiences high voltage also. **After deliberations, members agreed to the proposal of putting 50MVAR fixed line reactor in parallel with existing bus reactor at Jeerat.**

6.0 Modification in scheme for installation of 125 MVAR Bus Reactor at Jeypore (already approved in SCM on 08-02-2012).

In view of high voltage problem at 400kV Jeypore substation (PG) and space constraints there, replacement of existing 63 MVAR bus reactor by 125 MVAR bus reactor at Jeypore was approved in the 1st-2012 Standing Committee held on 08-02-2012. Accordingly, the scheme is under implementation by POWERGRID as part of ERSS-VIII. CTU representative stated that during implementation, it was observed that space could be made available to install 125 MVAR bus reactor in parallel to the existing 63 MVAR bus reactor. GM ERLDC informed that in view of lower short circuit level at Jeypore, 63+125 MVAR bus reactors are not required. Subsequently, CTU stated that Jeypore voltage often remains between 410 and 420kV (shown in Fig.1) and provision of the 125MVAR bus reactor would provide operation independently.





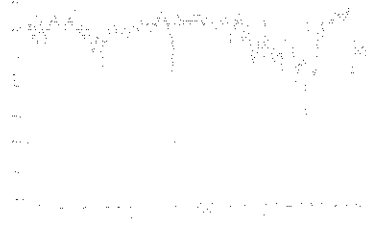


Fig 1: Voltage profile of 400kV Jeypore substation (PG)

After deliberations, it was decided 125MVA_r bus reactor at Jeypore could be installed as separate bus reactor.

7.0 Additional Reactive Compensation in Eastern Region

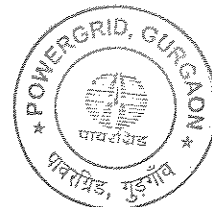
CTU informed that Eastern grid has been experiencing high voltage (shown in Fig. 2) and a review of the existing, under implementation and planned bus reactors in Eastern region indicates that there are 400 kV sub-stations having inadequate bus reactors. Therefore, it was proposed to install additional bus reactors at the following sub-stations (PG):

Sl.	Sub-Station	Status	Bus Reactor (MVA _r)		
			Existing	Under Imp.	Proposed
1	Banka	Existing	1x80	-	1x125
2	Bolangir	Existing	1x80	-	1x125
3	Baripada	Existing	-	1x125	1x125
4	Keonjhar	Existing	1x80	-	1x125
5	Durgapur#	Existing	1x50	2x125	1x125
6	Chaibasa	U/C	-	1x80	1x125
7	Lakhisarai	U/C	-	1x80	1x125

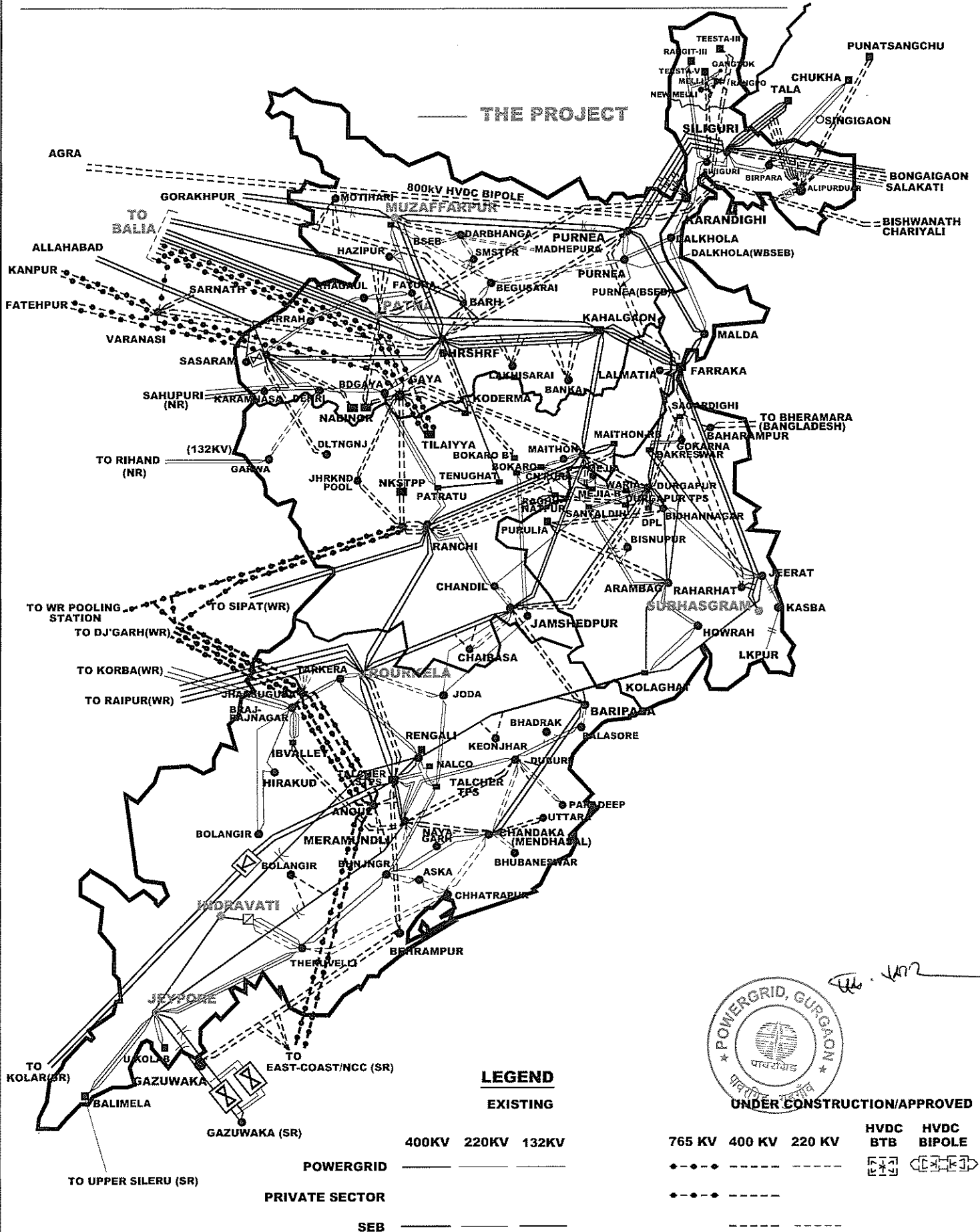
Split bus arrangement under implementation

Director (SP& PA), CEA stated that sensitivity of voltage with an additional 125 MVA_r bus reactor each at 400kV Banka, Bolangir, Baripada, Keonjhar, Chaibasa & Lakhisarai sub-stations was studied by CTU and there would be reduction in voltage to the extent of upto 3 kV. CTU stated that the split bus arrangement at Durgapur sub-station is already under implementation, after which one split bus section at Durgapur would be left with only one bus reactor.

[Handwritten signature]



POWER MAP OF EASTERN REGION



BILL OF MATERIALS - 400 KV, 400 KV, 1 BUS

S.N.	ITEM NO.	DESCRIPTION	QUANTITY	UNIT	MARK
1	10000	400 KV	1	UNIT	30000
2	10001	400 KV	1	UNIT	30000
3	10002	400 KV	1	UNIT	30000
4	10003	400 KV	1	UNIT	30000
5	10004	400 KV	1	UNIT	30000
6	10005	400 KV	1	UNIT	30000
7	10006	400 KV	1	UNIT	30000
8	10007	400 KV	1	UNIT	30000
9	10008	400 KV	1	UNIT	30000
10	10009	400 KV	1	UNIT	30000
11	10010	400 KV	1	UNIT	30000
12	10011	400 KV	1	UNIT	30000
13	10012	400 KV	1	UNIT	30000
14	10013	400 KV	1	UNIT	30000
15	10014	400 KV	1	UNIT	30000
16	10015	400 KV	1	UNIT	30000
17	10016	400 KV	1	UNIT	30000
18	10017	400 KV	1	UNIT	30000
19	10018	400 KV	1	UNIT	30000
20	10019	400 KV	1	UNIT	30000
21	10020	400 KV	1	UNIT	30000
22	10021	400 KV	1	UNIT	30000
23	10022	400 KV	1	UNIT	30000
24	10023	400 KV	1	UNIT	30000
25	10024	400 KV	1	UNIT	30000
26	10025	400 KV	1	UNIT	30000
27	10026	400 KV	1	UNIT	30000
28	10027	400 KV	1	UNIT	30000
29	10028	400 KV	1	UNIT	30000
30	10029	400 KV	1	UNIT	30000
31	10030	400 KV	1	UNIT	30000
32	10031	400 KV	1	UNIT	30000
33	10032	400 KV	1	UNIT	30000
34	10033	400 KV	1	UNIT	30000
35	10034	400 KV	1	UNIT	30000
36	10035	400 KV	1	UNIT	30000
37	10036	400 KV	1	UNIT	30000
38	10037	400 KV	1	UNIT	30000
39	10038	400 KV	1	UNIT	30000
40	10039	400 KV	1	UNIT	30000
41	10040	400 KV	1	UNIT	30000
42	10041	400 KV	1	UNIT	30000
43	10042	400 KV	1	UNIT	30000
44	10043	400 KV	1	UNIT	30000
45	10044	400 KV	1	UNIT	30000
46	10045	400 KV	1	UNIT	30000
47	10046	400 KV	1	UNIT	30000
48	10047	400 KV	1	UNIT	30000
49	10048	400 KV	1	UNIT	30000
50	10049	400 KV	1	UNIT	30000
51	10050	400 KV	1	UNIT	30000
52	10051	400 KV	1	UNIT	30000
53	10052	400 KV	1	UNIT	30000
54	10053	400 KV	1	UNIT	30000
55	10054	400 KV	1	UNIT	30000
56	10055	400 KV	1	UNIT	30000
57	10056	400 KV	1	UNIT	30000
58	10057	400 KV	1	UNIT	30000
59	10058	400 KV	1	UNIT	30000
60	10059	400 KV	1	UNIT	30000
61	10060	400 KV	1	UNIT	30000
62	10061	400 KV	1	UNIT	30000
63	10062	400 KV	1	UNIT	30000
64	10063	400 KV	1	UNIT	30000
65	10064	400 KV	1	UNIT	30000
66	10065	400 KV	1	UNIT	30000
67	10066	400 KV	1	UNIT	30000
68	10067	400 KV	1	UNIT	30000
69	10068	400 KV	1	UNIT	30000
70	10069	400 KV	1	UNIT	30000
71	10070	400 KV	1	UNIT	30000
72	10071	400 KV	1	UNIT	30000
73	10072	400 KV	1	UNIT	30000
74	10073	400 KV	1	UNIT	30000
75	10074	400 KV	1	UNIT	30000
76	10075	400 KV	1	UNIT	30000
77	10076	400 KV	1	UNIT	30000
78	10077	400 KV	1	UNIT	30000
79	10078	400 KV	1	UNIT	30000
80	10079	400 KV	1	UNIT	30000
81	10080	400 KV	1	UNIT	30000
82	10081	400 KV	1	UNIT	30000
83	10082	400 KV	1	UNIT	30000
84	10083	400 KV	1	UNIT	30000
85	10084	400 KV	1	UNIT	30000
86	10085	400 KV	1	UNIT	30000
87	10086	400 KV	1	UNIT	30000
88	10087	400 KV	1	UNIT	30000
89	10088	400 KV	1	UNIT	30000
90	10089	400 KV	1	UNIT	30000
91	10090	400 KV	1	UNIT	30000
92	10091	400 KV	1	UNIT	30000
93	10092	400 KV	1	UNIT	30000
94	10093	400 KV	1	UNIT	30000
95	10094	400 KV	1	UNIT	30000
96	10095	400 KV	1	UNIT	30000
97	10096	400 KV	1	UNIT	30000
98	10097	400 KV	1	UNIT	30000
99	10098	400 KV	1	UNIT	30000
100	10099	400 KV	1	UNIT	30000
101	10100	400 KV	1	UNIT	30000
102	10101	400 KV	1	UNIT	30000
103	10102	400 KV	1	UNIT	30000
104	10103	400 KV	1	UNIT	30000
105	10104	400 KV	1	UNIT	30000
106	10105	400 KV	1	UNIT	30000
107	10106	400 KV	1	UNIT	30000
108	10107	400 KV	1	UNIT	30000
109	10108	400 KV	1	UNIT	30000
110	10109	400 KV	1	UNIT	30000
111	10110	400 KV	1	UNIT	30000
112	10111	400 KV	1	UNIT	30000
113	10112	400 KV	1	UNIT	30000
114	10113	400 KV	1	UNIT	30000
115	10114	400 KV	1	UNIT	30000
116	10115	400 KV	1	UNIT	30000
117	10116	400 KV	1	UNIT	30000
118	10117	400 KV	1	UNIT	30000
119	10118	400 KV	1	UNIT	30000
120	10119	400 KV	1	UNIT	30000
121	10120	400 KV	1	UNIT	30000
122	10121	400 KV	1	UNIT	30000
123	10122	400 KV	1	UNIT	30000
124	10123	400 KV	1	UNIT	30000
125	10124	400 KV	1	UNIT	30000
126	10125	400 KV	1	UNIT	30000
127	10126	400 KV	1	UNIT	30000
128	10127	400 KV	1	UNIT	30000
129	10128	400 KV	1	UNIT	30000
130	10129	400 KV	1	UNIT	30000
131	10130	400 KV	1	UNIT	30000
132	10131	400 KV	1	UNIT	30000
133	10132	400 KV	1	UNIT	30000
134	10133	400 KV	1	UNIT	30000
135	10134	400 KV	1	UNIT	30000
136	10135	400 KV	1	UNIT	30000
137	10136	400 KV	1	UNIT	30000
138	10137	400 KV	1	UNIT	30000
139	10138	400 KV	1	UNIT	30000
140	10139	400 KV	1	UNIT	30000
141	10140	400 KV	1	UNIT	30000
142	10141	400 KV	1	UNIT	30000
143	10142	400 KV	1	UNIT	30000
144	10143	400 KV	1	UNIT	30000
145	10144	400 KV	1	UNIT	30000
146	10145	400 KV	1	UNIT	30000
147	10146	400 KV	1	UNIT	30000
148	10147	400 KV	1	UNIT	30000
149	10148	400 KV	1	UNIT	30000
150	10149	400 KV	1	UNIT	30000
151	10150	400 KV	1	UNIT	30000
152	10151	400 KV	1	UNIT	30000
153	10152	400 KV	1	UNIT	30000
154	10153	400 KV	1	UNIT	30000
155	10154	400 KV	1	UNIT	30000
156	10155	400 KV	1	UNIT	30000
157	10156	400 KV	1	UNIT	30000
158	10157	400 KV	1	UNIT	30000
159	10158	400 KV	1	UNIT	30000
160	10159	400 KV	1	UNIT	30000
161	10160	400 KV	1	UNIT	30000
162	10161	400 KV	1	UNIT	30000
163	10162	400 KV	1	UNIT	30000
164	10163	400 KV	1	UNIT	30000
165	10164	400 KV	1	UNIT	30000
166	10165	400 KV	1	UNIT	30000
167	10166	400 KV	1	UNIT	30000
168	10167	400 KV	1	UNIT	30000
169	10168	400 KV	1	UNIT	30000
170	10169	400 KV	1	UNIT	30000
171	10170	400 KV	1	UNIT	30000
172	10171	400 KV	1	UNIT	30000
173	10172	400 KV	1	UNIT	30000
174	10173	400 KV	1	UNIT	30000
175	10174	400 KV	1	UNIT	30000
176	10175	400 KV	1	UNIT	30000
177	10176	400 KV	1	UNIT	30000
178	10177	400 KV	1	UNIT	30000
179	10178	400 KV	1	UNIT	30000
180	10179	400 KV	1	UNIT	30000
181	10180	400 KV	1	UNIT	30000
182	10181	400 KV	1	UNIT	30000
183	10182	400 KV	1	UNIT	30000
184	10183	400 KV	1	UNIT	30000
185	10184	400 KV	1	UNIT	30000
186	10185	400 KV	1	UNIT	30000
187	10186	400 KV	1	UNIT	30000
188	10187	400 KV	1	UNIT	30000
189	10188	400 KV	1	UNIT	30000
190	10189	400 KV	1	UNIT	30000
191	10190	400 KV	1	UNIT	30000
192	10191	400 KV	1	UNIT	30000
193	10192	400 KV	1	UNIT	30000
194	10193	400 KV	1	UNIT	30000
195	10194	400 KV	1	UNIT	30000
196	10195	400 KV	1	UNIT	30000
197	10196	400 KV	1	UNIT	30000
198	10197	400 KV	1	UNIT	30000
199	10198	400 KV	1	UNIT	30000
200	10199	400 KV</			

Doc.No.D-3-15-XX-01-02

POWER GRID CORPORATION OF INDIA LTD.

III. RECEIPT:

I hereby declare that I have inspected and have satisfied myself that such equipment has been switched off and isolated, where the work is to be carried out. I also accept responsibility for carrying out work on equipment detailed on this permit and that no attempt will be made by me or by any men under my control, to carry out work on any other equipment.

Signature : *[Signature]*
 Name : *P. K. Jha*
 Designation : *Safety Officer*
 Date : *10/10/14 (12.00 hrs)* Time : *12.00 hrs*

RETURN OF PERMIT TO WORK

1. DETAILS OF WORK DONE :
2. RESTRICTIONS, IF ANY, ON THE EQUIPMENT BEING RETURNED TO SERVICE :
3. CLEARANCE

I hereby declare that all men and material have been withdrawn and warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional equipment is ready for charging.

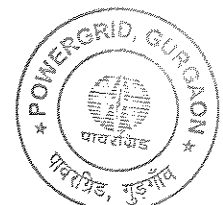
Signature : *[Signature]*
 Name : *P. K. Jha*
 Designation : *Safety Officer*
 Date : *03/11/2014* Time :

IV. CANCELLATION OF PERMIT TO WORK:

1. PTW cancelled and entry made in PTW register on Page No.
2. SEQUENCE OF NORMALIZATION.

- i)
- ii)
- iii)
- iv)
- v)

Signature : *[Signature]*
 Name :
 Designation :
 Date : Time :



POWER GRID CORPORATION OF INDIA LTD.

Form No. 607D 301

In person/Telephone

REGION : Eastern

SUBSTATION : Indravati

Permit No. 25/14 PERMIT TO WORK

I. REQUEST:

- 1. Work area : Bay extension for reactor
- 2. Work to be done :
- 3. Period of PTW : (From) 10/10/14 (9.00h) (To) 31/10/14 (17.00h)
- 4. Details of isolation required : NOT Required

Precautions taken to achieve Safety : AS per safety norms (To be taken by M/s Siemens)

5. Name and number of persons to execute work : P.K. Jha & 20 laborers

7.	PTW (Requested by)	PTW (Approved by)
Signature :	<u>[Signature]</u>	<u>[Signature]</u>
Name :	<u>P.K. Jha</u>	<u>A. MUDALI</u>
Designation :	<u>Safety officer</u>	<u>DM (O&M)</u>
Date & Time :	<u>10/10/14 (10.30h)</u>	

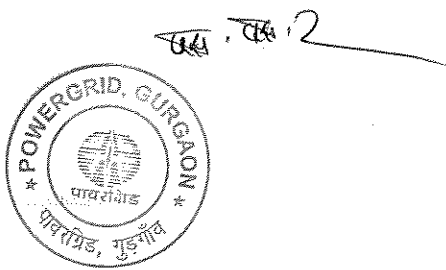
II. ISSUE :

- 1. Sequence of isolation : Not Required
- ii)
- iii)
- 2. PTW allowed. (From) 10/10/14 (9.00h) (To) 31/10/14 (17.00h)
- 3. Further precautions to be taken to achieve Safety : AS per safety norms

4. Details of Safety keys used :
5. Work area is isolated and it is safe to work on : Bay extension work for reactor

Signature : जे. जेना
 Name : J. Jena
 Designation (Shift Engineer) :
 Date : 10/10/14 Time : 12.00h

- Note :
- 1. PTW request to be approved by Substation Incharge
 - 2. PTW to be issued to POWERGRID executives only.
 - 3. Earthing to be done at the place of work.



POWER GRID CORPORATION OF INDIA LTD.

III. RECEIPT:

I hereby declare that I have inspected and have satisfied myself that such equipment has been switched off and isolated, where the work is to be carried out. I also accept responsibility for carrying out work on equipment detailed on this permit and that no attempt will be made by me or by any men under my control, to carry out work on any other equipment.

Signature : *[Handwritten Signature]*
 Name : *P. K. Sharma*
 Designation : *Safety Officer*
 Date : *03/11/2014* Time : *12.00 PM*

RETURN OF PERMIT TO WORK

1. DETAILS OF WORK DONE :
2. RESTRICTIONS, IF ANY, ON THE EQUIPMENT BEING RETURNED TO SERVICE :
3. CLEARANCE

I hereby declare that all men and material have been withdrawn and warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional as the are clear and equipment is ready for energizing.

Signature : *[Handwritten Signature]*
 Name : *P. K. Sharma*
 Designation : *Safety Officer*
 Date : *3/12/2014* Time : *10.00*

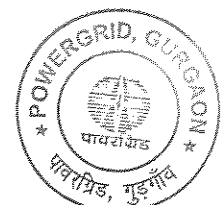
IV. CANCELLATION OF PERMIT TO WORK:

1. PTW cancelled and entry made in PTV register on Page No.
2. SEQUENCE OF NORMALIZATION.

- i)
- ii)
- iii)
- iv)
- v)

Signature :
 Name :
 Designation :
 Date : Time :

[Handwritten Signature]



POWER GRID CORPORATION OF INDIA LTD.

Form No. 807D 301

In person/Telephone

REGION : Eastern

SUBSTATION : Indravati

Permit No. 27/14 PERMIT TO WORK

I. REQUEST:

1. Work area : Bay extension for reactor
2. Work to be done :
3. Period of PTW : (From) 03/11/2014 To 30/11/2014
4. Details of isolation required : Not required

Precautions taken to achieve Safety

As per safety norms to be taken by M/S Siemens Ltd P.K. Jha & 2 OHS workers

5. Name and number of persons to execute work :

7. Signature (Requested by) : [Signature] Signature (Approved by) : [Signature]
 Name : P.K. Jha Name : [Name]
 Designation : Safety Officer Designation : CA. MUDALI
 Date & Time : 03/11/2014 (11:30 AM) Date & Time : 3.11.14
DM (O&H)

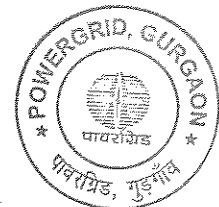
II. ISSUE :

1. Sequence of isolation : NET - required
- ii) 03/11/14 (9:00 AM) 30/11/14 (5:30 PM)
- iii) PTW allowed. (From)
2. Further precautions to be taken to achieve Safety : (As per safety norms to be taken by M/S Siemens Ltd)
3. Details of Safety keys used : Bay extension work for reactor
4. Work area is isolated and it is safe to work on :

Signature : [Signature]
 Name :
 Designation (Shift Engineer) :
 Date : 03/11/14

Time :

- Note :
1. PTW request to be approved by Substation Incharge
 2. PTW to be issued to POWERGRID executives only.
 3. Working to be done at the place of work.



POWER GRID CORPORATION OF INDIA LTD.

Form No: 607D 301

In person/Telephone

REGION: Eastern

SUBSTATION: Indravati

Permit No. 28/14 **PERMIT TO WORK**

I. REQUEST:

1. Work area: *9th the zone of (Rengali main Bay & UIHEP tie Bay)*
 2. Work to be done: *Bay extn. work of 125 MVAR B/R (Excavation of foundation CT, CB, isolators)*
 3. Period of PTW: (From) *8:00hr* (To) *18:00hr*
 4. Details of isolation required: *UIHEP Tie (B(1152), Rengali main (B(352) etc to be made off ~~connection~~*
- Precautions taken to achieve Safety: *Isolators (11897, UIHEP TR), 389B-Rengali main etc to be made off.*
5. Name and number of persons to execute work: *20 nos. manpower of Mr Siemens, who is executing the Bay extn. work.*

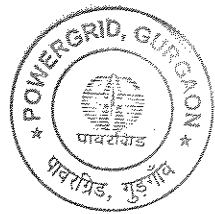
7.	PTW (Requested by)	PTW (Approved by)
Signature	<i>[Signature]</i>	<i>[Signature]</i>
Name	<i>(A. MUDALI)</i>	<i>S. C. D. ROY</i>
Designation	<i>DM (O/M)</i>	<i>ASST. GM</i>
Date & Time	<i>4.11.14 / 7:45hr</i>	<i>4.11.14 / 7:50hr</i>

II. ISSUE :

1. Sequence of isolation :
 - i)
 - ii)
 - iii)
2. PTW allowed. (From) (To)
3. Further precautions to be taken to achieve Safety :
4. Details of Safety keys used :
5. Work area is isolated and it is safe to work on :

Signature : *[Signature]*
 Name : *J. Jena*
 Designation (Shift Engineer) :
 Date : *4.11.14* Time :

- Note :
1. PTW request to be approved by Substation Incharge
 2. PTW to be issued to POWERGRID executives only.
 3. Earthing to be done at the place of work.



POWER GRID CORPORATION OF INDIA LTD.

III. RECEIPT:

I hereby declare that I have inspected and have satisfied myself that such equipment has been switched off and isolated, where the work is to be carried out. I also accept responsibility for carrying out work on equipment detailed on this permit and that no attempt will be made by me or by any man under my control, to carry out work on any other equipment.

Signature: *P.K. Tha*
 Name: *Safety officer (General)*
 Designation: *4/11/2014 (General)*
 Date: *4/11/2014* Time: *(6.00) pm*

RETURN OF PERMIT TO WORK

1. DETAILS OF WORK DONE :
2. RESTRICTIONS, IF ANY, ON THE EQUIPMENT BEING RETURNED TO SERVICE
3. CLEARANCE

I hereby declare that all men and material have been withdrawn and warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional equipment and equipment is ready for charging.

Signature: *P.K. Tha*
 Name: *Safety officer (General)*
 Designation: *4/11/2014*
 Date: *4/11/2014* Time: *6.00 PM*

Remains in the condition

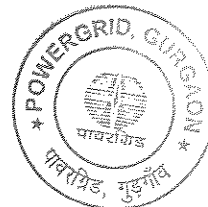
IV. CANCELLATION OF PERMIT TO WORK:

1. PTW cancelled and entry made in PTW register on Page No.
2. SEQUENCE OF NORMALIZATION :

- i)
- ii)
- iii)
- iv)
- v)

Signature :
 Name :
 Designation :
 Date : Time :

add. de



POWER GRID CORPORATION OF INDIA LTD.

Form No. 807D 301

In person/Telephone

REGION : Eastern

SUBSTATION : Indravati

PERMIT TO WORK

Permit No. 29/14

I. REQUEST:

1. Work area : Main bay, Tie bay, Bay exclusion work
2. Work to be done :
3. Period of PTW : (From) 10:30, 5/11/14 (To) 6:00 PM 5/11/14
4. Details of isolation required : 1189, 3898. (Shutdown)

Precautions taken to achieve Safety : As per safety norms taken by client

5. Name and number of persons to execute work :

1 person with some worker
checking that bay safe

7. PTW
(Requested by)

PTW
(Approved by)

Signature : [Signature]

Name : P. K. Jha

Designation : Substation incharge Client side

Date & Time : 5/11/14 - 10:30 AM

[Signature]
5/11/14

II. ISSUE :

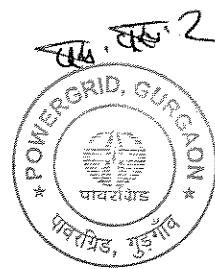
1. Sequence of Isolation :
 - i) Check BSCB & Reclose Warn CB are in off condition
 - ii) 1017A & 11897, Isolation are in open condition
 - iii)
2. PTW allowed. (From) 10:45 hr (To) 18:00 hr
3. Further precautions to be taken to achieve Safety :

4. Details of Safety keys used :
5. Work area is isolated and it is safe to work on :

Signature : E. Eswara
 Name : E. Eswara
 Designation (S&R Engineer) :

Date : 05.11.14 Time : 11:50

- Note :
1. PTW request to be approved by Substation incharge
 2. PTW to be issued to POWERGRID executives only.
 3. Earning to be done at the place of work.



POWER GRID CORPORATION OF INDIA LTD.

III. RECEIPT:

I hereby declare that I have inspected and have satisfied myself that such equipment has been switched off and isolated, where the work is to be carried out. I also accept responsibility for carrying out work on equipment detailed on this permit and that no attempt will be made by me or by any man under my control, to carry out work on any other equipment.

Signature : *[Signature]*
 Name : *P. K. Jha*
 Designation : *Safety officer (Siemens Ltd)*
 Date : *5/11/2014* Time : *10.45 AM*

RETURN OF PERMIT TO WORK

1. DETAILS OF WORK DONE
2. RESTRICTIONS, IF ANY, ON THE EQUIPMENT BEING RETURNED TO SERVICE
3. CLEARANCE

I hereby declare that all men and material have been withdrawn and warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional earths are clear and equipment is ready for charging.

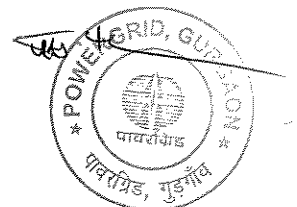
Signature : *[Signature]*
 Name : *P. K. Jha*
 Designation : *Safety officer (Siemens Ltd)*
 Date : *5/11/2014* Time : *6:00 PM*

IV. CANCELLATION OF PERMIT TO WORK:

1. PTW cancelled and entry made in PTW register on Page No.
2. SEQUENCE OF NORMALIZATION.

- i)
- ii)
- iii)
- iv)
- v)

Signature :
 Name :
 Designation :
 Date : Time :



1/12/14 to 31/12/14

Doc.No.D-3-13-XX-01-02

POWER GRID CORPORATION OF INDIA LTD.

Form No. 807D 301

In person/Telephone

REGION : Eastern

SUBSTATION : Indravati

PERMIT TO WORK

Permit No. 37/14

I. REQUEST:

- 1. Work area: Bay connection reactor
- 2. Work to be done:
- 3. Period of PTW : (From) 01/12/14 (To) 31/12/14
- 4. Details of isolation required: Not required

Precautions taken to achieve Safety: As per safety norms to be taken by

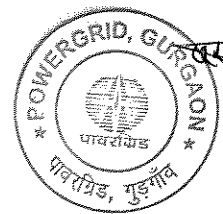
- 5. Name and number of persons to execute work: Siemens Ltd
D.K. Jha & 20 NO WORKERS
- 7. PTW (Requested by) Signature: [Signature] Name: D.K. Jha Designation: Safety Officer Date & Time: 01/12/14
- PTW (Approved by) Signature: [Signature] Name: [Signature] Designation: [Signature] Date & Time: 9.12.14

II. ISSUE :

- 1. Sequence of isolation: Not required
- 2. PTW allowed. (From) 01/12/14 (To) 31/12/14
- 3. Further precautions to be taken to achieve Safety: As per safety norms to be taken by Siemens Ltd
- 4. Details of Safety keys used:
- 5. Work area is isolated and it is safe to work on: Bay connection work for reactor

Signature : SR Suman
 Name : Sunil Kumar Suman
 Designation (Shift Engineer) : FIELD ENGG.
 Date : 09/12/14 Time: 11:06 AM

- Note :
- 1. PTW request to be approved by Substation Incharge
 - 2. PTW to be issued to POWERGRID executives only.
 - 3. Earthing to be done at the place of work.



POWER GRID CORPORATION OF INDIA LTD.

III. RECEIPT:

I hereby declare that I have inspected and have satisfied myself that such equipment has been switched off and isolated, where the work is to be carried out. I also accept responsibility for carrying out work on equipment detailed on this permit and that no attempt will be made by me or by any man under my control, to carry out work on any other equipment.

Signature : *[Signature]*
 Name : *P. N. Jha*
 Designation : *Safety Officer*
 Date : *11/12/14* Time : *11:00 Hrs*

RETURN OF PERMIT TO WORK

1. DETAILS OF WORK DONE
2. RESTRICTIONS, IF ANY, ON THE EQUIPMENT BEING RETURNED TO SERVICE
3. CLEARANCE

I hereby declare that all men and material have been withdrawn and warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional earths are clear and equipment is ready for charging.

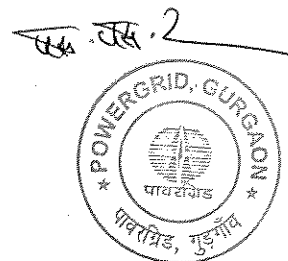
Signature : *[Signature]*
 Name : *P. N. Jha*
 Designation : *Safety Officer*
 Date : *02/01/2015* Time : *9:00 AM*

IV. CANCELLATION OF PERMIT TO WORK:

1. PTW cancelled and entry made in PTW register on Page No.
2. SEQUENCE OF NORMALIZATION.

- i)
- ii)
- iii)
- iv)
- v)

Signature :
 Name :
 Designation :
 Date : Time :



POWER GRID CORPORATION OF INDIA LTD.

Form No. 807 301

In person/code through Telephone

Region : Eastern-II

SUBSTATION : Indravati

PERMIT TO WORK (General)

Permit No. 21/15

I. REQUEST:

- 1. Work area : Existing Ext. Area for the Ladder Foundation of C.B. & other Erection Work for ERSS
- 2. Work to be done :
- 3. Period of PTW : (From) 23/04/15 (To) 13/05/15
- 4. Details of isolation required : - NO

Precautions taken to achieve Safety : Precaution taken by safety

5. Name and number of persons to execute work : - 06 Nos

PTW (Requested by)	PTW (Approved by)	
Signature : <u>[Signature]</u>	Signature : <u>[Signature]</u>	* R.P. Singh (Civil)
Name : <u>R.P. Singh</u>	Name : <u>A. Madhav</u>	* Akshya Mashi (Safety)
Designation : <u>Site Incharge Siemens Ltd</u>	Designation : <u>DM/CCM</u>	* M.M. Choudhary (SCM)
Date & Time : <u>23/04/15</u>		* Sukuruddin (Electrician)
		* Suman Kumar (Civil)
		* Anjanjan Nag (Supervisor)

II. ISSUE :

- 1. Sequence of isolation : NO
- i)
- ii)
- iii)
- 2. PTW allowed. (From) 23/04/15, 10.00hr. (To) 13/05/15 18.00hr.
- 3. Further precautions to be taken to achieve Safety :
- 4. Details of Safety keys used :
- 5. Work area is isolated and it is safe to work on : 23.04.15, 10.00hr.

Signature : [Signature]
 Name : P. Padhan
 Designation (Shift Engineer) : J.E.
 Date : 23.04.15 Time : 10.00 hr.


- Not:
- 1. PTW request to be approved by substation Incharge
 - 2. PTW to be issued to POWERGRID executives/Authorised representative of licensee only
 - 3. Earthing to be done at the place of work



POWER GRID CORPORATION OF INDIA LTD.

III. RECEIPT:

I hereby declare that I have inspected and have satisfied myself that such equipment has been switched off and isolated, where the work is to be carried out. I also accept responsibility for carrying out work on equipment detailed on this permit and that no attempt will be made by me or by any man under my control, to carry out work on any other equipment.

Signature : 
 Name : 23/04/15
 Designation : Site in charge
 Date : 26/04/15 Site in charge TDP Time :

RETURN OF PERMIT TO WORK

1. DETAILS OF WORK DONE :
2. RESTRICTIONS, IF ANY, ON THE EQUIPMENT BEING RETURNED TO SERVICE :
3. CLEARANCE

I hereby declare that all men and material have been withdrawn and warned that it is no longer safe to work on the equipment specified in this permit and all tools and additional earths are clear and equipment is ready for charging.

Signature :
 Name :
 Designation :
 Date : Time :

IV. CANCELLATION OF PERMIT TO WORK:

1. PTW cancelled and entry made in PTW/SFT register on page no.....
2. SEQUENCE OF NORMALIZATION :

- i)
- ii)
- iii)
- iv)
- v)

Signature :
 Name :
 Designation :
 Date : Time :





पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
(अभियंत्रिकी उपकेंद्र)
अंतर कार्यालय जापन



प्रेषक/From: AGM (Engg-S/S)	संकेत/To: 1) ED(Odisha Projects), Headquarters, Bhubaneswar-751007 2) ED(ERTS-II), RHQ, Kolkata-700 091
संदर्भ/Ref: C/ENGG/SS/ER/ERS58/02	प्रतियां/Copies: 1) Sh. S.K.Mishra, DGM(Engg), Odisha Projects, Headquarters, Bhubaneswar-751007 2) GM (CMG), CC, Gurgaon
दिनांक /Date : 21-08-2014	

विषय/Subject: Substation Package-S1 for extension of (i) 400kV Muzaffarpur (PG) SS, (ii) 400kV Rourkela SS, (iii) 400kV Indravati (PG) SS, (iv) 400kV Jeypore SS, (v) 400/220kV Subhasgram SS and (vi) 400kV Balia SS under 'Eastern region strengthening Scheme-VIII' and Extension of 400/220kV Bhadravati BTB station under 'installation of Transformer and Procurement of converter transformer at Bhadravati HVDC BTB station' (NOA No: CC-CS/305-ER1/SS-1827/3/G6/NOA-1&11/4778&4779 both dated 16.09.2013)

With reference to 400kV Jeypore s/s extn under subject package, technical approval-5 note sheet dated 07-07-2014 was forwarded vide our IOM ref: C/ENGG/SS/ER/ERS58/01 dated 15-07-2014 (copy enclosed) for suitable amendment to the subject package (contract agreement).

Further, please find a copy of letter dated 14-08-2014 submitted by M/s Siemens which is self-explanatory.

In this regard, it is to inform that, M/s Siemens has submitted the following drawings pertaining to Jeypore s/s extension w.r.t original tender scope of work:

1. Single Line diagram
2. Electrical layout (Plan & section)
3. Clearance Diagram

Subsequently, as per our letters dated 15-02-2014 & 24-02-2014 to Siemens based on Technical approval-2 dated 02-02-2014 (copy enclosed), M/s Siemens has revised the following drawings to suit the proposed modified scope of work (i.e., parallel operation arrangement of 125MVAR Bus Reactor with existing 63MVAR Bus Reactor):

1. Single Line diagram
2. Electrical layout (Plan & section)

However, subsequently as per MOM of the Standing Committee Meeting on Power System planning in Eastern Region held at NRFC, New Delhi on 02-05-2014 forwarded by CTU, the scope of work was again modified to install 125MVAR Bus reactor in a separate bay to have better flexibility in operation. This was communicated to Siemens vide our letter dated 15-07-2014 along with proposed SLD & GA drawings, with a request to submit the revised drawings/documents incorporating the above at the earliest.

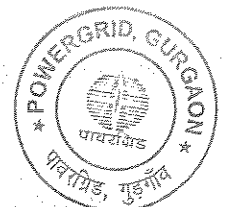
However, M/s Siemens is yet to submit the revised drawings for approval.

In this regard, it is requested that the amendment may please be issued based on technical approval-5 note sheet dated 07-07-2015, so that engineering activities pertaining to Jeypore s/s extn can be resumed.

This is for your kind information and further necessary action please.

(A.P.Gangadharan)

चक्र. च



M-1

Central Electricity Authority
प्रणाली योजना एवं परियोजना मूल्यांकन प्रभाग
System Planning & Project Appraisal Division
सेवा भवन, आर. के. पुरम, नई दिल्ली-110066
Sewa Bhawan, R. K. Puram, New Delhi-110066

No.66/5/2013-SP&PA/12-23-35

dated: 11.07.2014

1. Managing Director, Bihar State Power Transmission Company. Vidyut Bhavan, Baily Road, Patna-800021. Tel. 0612-2504442 Fax No. 0612-2504968	2. Director (System), Damodar Valley Corporation DVC Towers, VIP Road, Kolkata-700054. Tel. 033-23557934 Fax No. 23554841
3. Member Secretary, Eastern Regional Power Committee, 14, Golf Club Road, Tollygange, Kolkata-700033. Tel. No. 033-24235199 Fax No. 033-24171358	4. Director (Commercial), Grid Corporation of Orissa Ltd, Jan path, Bhubaneshwar-751022. Tel. No. 0674-2541127 Fax No. 0674-2543452
5. Director (Transmission), Orissa Power Transmission Corporation Ltd. Jan path, Bhubaneshwar-751022. Tel. No. 0674-2540098 Fax No. 0674-2541904	6. Director (System Operation), West Bengal State Electricity Transmission Company Ltd, Vidyut Bhavan, 5th Floor, Block-D, Bidhannagar, Sector- II, Kolkata-700091. Tel. No. 033-23370206 Fax No. 033-2337206
7. Principal Chief Engineer cum Secretary, Power Department Government of Sikkim, Sikkim. Tel. No. 03592-2022440 Fax No. 03592-202927	8. Director (Projects), Power Grid Corporation of India "Saudamini" Plot No. 2, Sector-29, Gurgaon-122001 Tel. No. 0124-2571816 Fax No. 0124-2571979
9. Director (Technical), NTPC Limited, Engineering Office Complex, A-8, Sector 24, Noida. Tel. No. 24362050 Fax No. 24362421	10. Member (Transmission), Jharkhand State Electricity Board, In front of Main Secretariat, Doranda, Ranchi-834002. Tel. No. 0651-2400827 Fax No. 0651-2400799
11. Executive Director (T&RE), NHPC Ltd, NHPC Office complex, Sector 33, Faridabad-121003. Tel. No. 0129-2255805 Fax No. 0129-2256055	12. General Manager, Eastern Regional Load Dispatch Center, 14, Golf Club Road, Tollygange, Kolkata-700033. Tel No. 033-24235867 Fax No. 033-24235809
13. Shri S. K. Soonee, CEO, POSOCO B-9, Qutub Institutional Area, Katwaria Sarai, New Delhi-110016 Tel. No. 26524525 Fax No. 26852843	

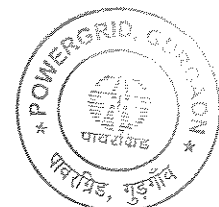
Sub: Summary record of discussions of the 1st - 2014 meeting of the Standing Committee on Power System Planning of Eastern Region on 02.05.2014 at NRPC, New Delhi.

Sir,

Minutes of the meeting for the Standing Committee Meeting on Power System Planning in Eastern Region was held on 02.05.2014 at NRPC, Katwaria Sarai, New Delhi is uploaded on the CEA website: www.cea.nic.in. (path to access: Wings of CEA/Power Systems/Standing Committee on Power System Planning/EASTERN REGION) for kind perusal.

Yours faithfully,

Santosh Kumar
11.7.14
(Santosh Kumar)
Dy. Director (SP&PA)



Minutes of Meeting of the 1st-2014 Standing Committees Meeting on Power System planning in Eastern Region held at NRPC, New Delhi on 02-05-2014

List of Participants is attached at Annexure-4.

Member (PS), CEA welcomed the participants and stated that the agenda items be taken up followed by LTA cases. After brief introduction it was noted that no representative from state of Bihar and Jharkhand are participating in the meeting. Thereafter, he requested Director (SP&PA), CEA to take up the agenda. Director (SP&PA) CEA in his opening remarks informed that POSOCO was incorporated as a member of the Standing Committee. Thereafter, he took up the proceedings. The brief on the deliberation is given below:

1.0. Confirmation of Minutes of the last Meeting of Standing Committee held on 27-08-2013

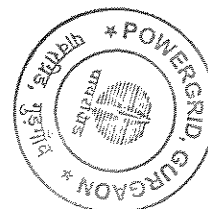
Director (SP&PA), CEA stated that Minutes of the Standing Committee Meeting (SCM) held on 27-08-2013 at NRPC, Delhi were circulated through CEA Website. As no comments were received, the minutes were confirmed.

2.0 Modification in Transmission System associated with Phase-I IPPs in Sikkim

Director (SP&PA), CEA informed that the subject scheme was approved in the standing committee held on 20-09-2010 and is presently under implementation by POWERGRID with the following scope of works:

- New 2x315MVA, 400/220 kV sub-station at Kishanganj
- LILO of New Siliguri - New Purnea 400kV D/c (quad) at Kishanganj
- LILO of New Siliguri – New Purnea 400kV D/c (twin-being re-conducted) at Kishanganj
- LILO of Siliguri - Dalkhola 220kV D/c line at Kishanganj

The Kishanganj. Sub-station was earlier planned to be established at Karandighi in West Bengal. Due to land acquisition issues, location of the sub-station was changed to Kishanganj in Bihar. CTU/PGCIL informed that after finalization of the location of Kishanganj, route length of loop-in & loop-out of both the New Purnea - New Siliguri 400 kV D/C twin moose line (being re-conducted with twin HTLS conductor by PGCIL) and New Purnea - New Siliguri 400 kV D/c quad conductor line has increased to 177 km and 102 km respectively. It was explained through the results of their system study that power flow on the above two lines ,after LILO, were found to be very uneven and, if only quad conductor line was LILOed at Kishanganj, the load sharings on quad conductor and twin conductor line got improved . Accordingly, CTU proposed to delete the scope of LILO of New Purnea - New Siliguri 400 kV D/c line (being re-conducted with twin HTLS conductor) at Kishanganj.



single agency preferably by Powergrid. Others Members unanimously agreed to get the above works done by POWERGRID on compressed time schedule.

COO CTU raised the emerging issue how to provide connection agreement/LTA for cross border power transfer to India, and desired the views of members. As the issue required through discussions, Member (PS) CEA suggested to hold a separate meeting of CEA, CTU, POSOCO & CERC shortly. Members agreed and welcomed the suggestion.

5.0 Conversion of 50 MVAR Line Reactor presently installed at Jeerat end of Bahrapur - Jeerat 400 kV line to Bus Reactor in parallel with existing Bus Reactor at Jeerat

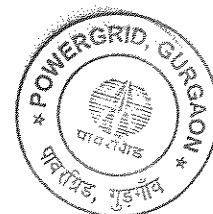
Director (SP& PA), CEA informed that conversion of 50 MVAR fixed line reactor at Jeerat end of 400kV Jeerat-Bahrapur section (140km) to switchable one was agreed in the 25th TCC/ERPC. Subsequently, CTU suggested to convert the line reactor to a switchable bus reactor in parallel with existing 63 MVAR Bus Reactor at Jeerat and it was agreed in the 26th TCC / ERPC meeting in January, 2014,

MS I/C ERPC opined that as of now there would be no requirement of this line reactor at Jeerat and the same could be shifted and installed as bus reactor at Bahrapur. COO CTU explained that 50 MVAR line reactor could be utilized to control voltage. ERLDC opined that voltage at Jeerat in most occasion remains low, but sometimes experiences high voltage also. **After deliberations, members agreed to the proposal of putting 50MVAR fixed line reactor in parallel with existing bus reactor at Jeerat.**

6.0 Modification in scheme for installation of 125 MVAR Bus Reactor at Jeypore (already approved in SCM on 08-02-2012).

In view of high voltage problem at 400kV Jeypore substation (PG) and space constraints there, replacement of existing 63 MVAR bus reactor by 125 MVAR bus reactor at Jeypore was approved in the 1st-2012 Standing Committee held on 08-02-2012. Accordingly, the scheme is under implementation by POWERGRID as part of ERSS-VIII. CTU representative stated that during implementation, it was observed that space could be made available to install 125 MVAR bus reactor in parallel to the existing 63 MVAR bus reactor. GM ERLDC informed that in view of lower short circuit level at Jeypore, 63+125 MVAR bus reactors are not required. Subsequently, CTU stated that Jeypore voltage often remains between 410 and 420kV (shown in Fig.1) and provision of the 125MVAR bus reactor would provide operation independently.

CEA, 42



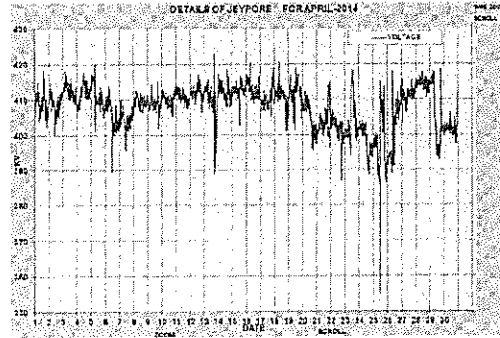


Fig 1: Voltage profile of 400kV Jeypore substation (PG)

After deliberations, it was decided 125MVA bus reactor at Jeypore could be installed as separate bus reactor.

7.0 Additional Reactive Compensation in Eastern Region

CTU informed that Eastern grid has been experiencing high voltage (shown in Fig. 2) and a review of the existing, under implementation and planned bus reactors in Eastern region indicates that there are 400 kV sub-stations having inadequate bus reactors. Therefore, it was proposed to install additional bus reactors at the following sub-stations (PG):

Sl.	Sub-Station	Status	Bus Reactor (MVA)		
			Existing	Under Imp.	Proposed
1	Banka	Existing	1x80	-	1x125
2	Bolangir	Existing	1x80	-	1x125
3	Baripada	Existing	-	1x125	1x125
4	Keonjhar	Existing	1x80	-	1x125
5	Durgapur#	Existing	1x50	2x125	1x125
6	Chaibasa	U/C	-	1x80	1x125
7	Lakhisarai	U/C	-	1x80	1x125

Split bus arrangement under implementation

Director (SP& PA), CEA stated that sensitivity of voltage with an additional 125 MVA bus reactor each at 400kV Banka, Bolangir, Baripada, Keonjhar, Chaibasa & Lakhisarai sub-stations was studied by CTU and there would be reduction in voltage to the extent of upto 3 kV. CTU stated that the split bus arrangement at Durgapur sub-station is already under implementation, after which one split bus section at Durgapur would be left with only one bus reactor.

Handwritten signature: *U. U.*

**POWER GRID CORPORATION OF INDIA LTD.
EASTERN REGION - II
MANAGEMENT CERTIFICATE**

It is hereby certified that the capital cost of 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S under the project Eastern Region Transmission System scheme-VIII which is expected to be under commercial operation w.e.f. 30.06.2015 is detailed as under:

(Rs. in Lacs)

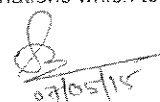
Sr.No.	Particulars	Capital cost	IEDC	IDC	Total
1	Expenditure upto 31-Mar-2015	70.92	1.32	0.97	73.21
2	Estimated Expenditure from 01-Apr-2015 to 30-June-2015 (Ant. DOCO)	718.31	13.37	12.43	744.11
3	Estimated Expd from 01-July-15 to 31-Mar-16	117.93	0.00	0.00	117.93
4	Estimated Expd for 2016-17	100.00	0.00	0.00	100.00
5	Total	1007.16	14.69	13.40	1035.25


This is to certify that the above statement furnished by Powergrid Corporation of India Limited, ERTS-II, Kolkata is verified by us and are in accordance with the books of accounts of Powergrid Corporation of India Limited upto 31.03.2015

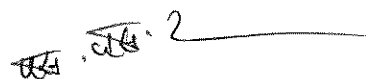
It is further certified that the Balance Projected Expenditure at Sl. No. 2, 3 & 4 are in accordance with the statement furnished by the Management of the Company to us.

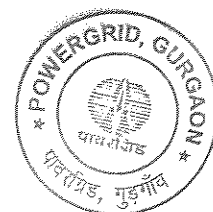
We have obtained all information and explanations which to the best of our knowledge and belief were necessary for the purpose of our examination

Date:- 7-May-15


(R.S.Patra)
Asst. GM (F&A)
BBSR


(A.K.Dash)
CM (PESM)
BBSR





POWER GRID CORPORATION OF INDIA LTD.
EASTERN REGION - II

MANAGEMENT CERTIFICATE

It is hereby certified that the capital cost of 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S under the project Eastern Region Transmission System scheme-VIII which is expected to be under commercial operation w.e.f. 30.06.2015 is detailed as under:

(Rs. in Lacs)

Sr.No.	Particulars	Land	Building and Civil works	T/L	S/stn	PLCC	Total
1	Expenditure upto 31-Mar-2015	0.00	0.00	0.00	73.21	0.00	73.21
2	Estimated Expenditure from 01-Apr-2015 to 30-June-2015 (Ant. DOCO)	0.00	0.00	0.00	744.11	0.00	744.11
3	Estimated Expd from 01-July-15 to 31-Mar-16	0.00	0.00	0.00	117.93	0.00	117.93
4	Estimated Expd for 2016-17	0.00	0.00	0.00	100.00	0.00	100.00
5	Total	0.00	0.00	0.00	1035.25	0.00	1035.25


	Particulars	TL	Sub station
1	Total Cost (Plant and Machinery cost excluding IDC, IEDC, Land cost and cost of Civil works for the purpose of Initial Spares)		1007.16
2	Initial Spares included above		0.00


This is to certify that the above statement furnished by Powergrid Corporation of India Limited, ERTS-II, Kolkata is verified by us and are in accordance with the books of accounts of Powergrid Corporation of India Limited upto 31.03.2015

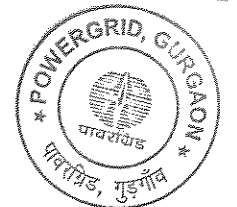
It is further certified that the Balance Projected Expenditure at Sl. No. 2, 3 & 4 are in accordance with the statement furnished by the Management of the Company to us.

We have obtained all information and explanations which to the best of our knowledge and belief were necessary for the purpose of our examination

Date:- 7-May-15


(R.S. Patra)
Asst. GM (F&A)
BBSR


(A.K. Dash)
CM (PESM)
BBSR



POWER GRID CORPORATION OF INDIA LTD.
EASTERN REGION - II
MANAGEMENT CERTIFICATE

It is hereby certified that the capital cost of 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under the project Eastern Region Transmission System scheme-VIII which is expected to be under commercial operation w.e.f. 30.06.2015 is detailed as under:

(Rs. in Lacs)


Sr.No.	Particulars	Capital cost	IEDC	IDC	Total
1	Expenditure upto 31-Mar-2015	2.94	0.05	0.04	3.04
2	Estimated Expenditure from 01-Apr-2015 to 30-June-2015 (Ant. DOCO)	675.00	11.48	10.68	697.16
3	Estimated Expd from 01-July-15 to 31-Mar-16	84.74	0.00	0.00	84.74
4	Estimated Expd for 2016-17	50.00	0.00	0.00	50.00
5	Total	812.68	11.53	10.72	834.94


This is to certify that the above statement furnished by Powergrid Corporation of India Limited, ERTS-II, Kolkata is verified by us and are in accordance with the books of accounts of Powergrid Corporation of India Limited upto 31.03.2015

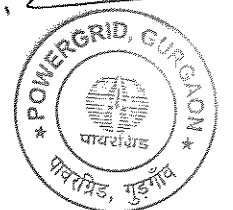
It is further certified that the Balance Projected Expenditure at Sl. No. 2, 3 & 4 are in accordance with the statement furnished by the Management of the Company to us.

We have obtained all information and explanations which to the best of our knowledge and belief were necessary for the purpose of our examination

Date:- 7-May-15


 07/05/15
 (R.S.Patra)
 Asst.GM (F&A)
 BBSR


 07/05/15
 (A.K.Dash)
 CM (PESM)
 BBSR



POWER GRID CORPORATION OF INDIA LTD.
EASTERN REGION - II

MANAGEMENT CERTIFICATE

It is hereby certified that the capital cost of 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S under the project Eastern Region Transmission System scheme-VIII which is expected to be under commercial operation w.e.f. 30.06.2015 is detailed as under:

(Rs. in Lacs)

Sr.No.	Particulars	Land	Building and Civil works	T/L	S/stn	PLCC	Total
1	Expenditure upto 31-Mar-2015	0.00	0.00	0.00	3.04	0.00	3.04
2	Estimated Expenditure from 01-Apr-2015 to 30-June-2015 (Ant. DOCO)	0.00	0.00	0.00	697.16	0.00	697.16
3	Estimated Expd from 01-July-15 to 31-Mar-16	0.00	0.00	0.00	84.74	0.00	84.74
4	Estimated Expd for 2016-17	0.00	0.00	0.00	50.00	0.00	50.00
5	Total	0.00	0.00	0.00	834.94	0.00	834.94


	Particulars	TL	Sub station
1	Total Cost (Plant and Machinery cost excluding IDC, IEDC, Land cost and cost of Civil works for the purpose of Initial Spares)		812.68
2	Initial Spares included above		0.00


This is to certify that the above statement furnished by Powergrid Corporation of India Limited, ERTS-II, Kolkata is verified by us and are in accordance with the books of accounts of Powergrid Corporation of India Limited upto 31.03.2015

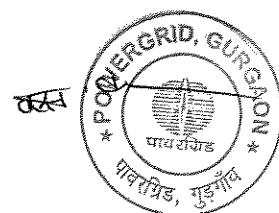
It is further certified that the Balance Projected Expenditure at Sl. No. 2, 3 & 4 are in accordance with the statement furnished by the Management of the Company to us.

We have obtained all information and explanations which to the best of our knowledge and belief were necessary for the purpose of our examination

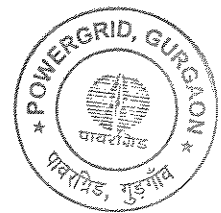
Date:- 7-May-15


(R.S.Patra)
Asst.GM (F&A)
BBSR


(A.K.Dash)
DGM (PESM)
BBSR



						Form I
Summary Sheet						
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S						
Date of Commercial operation : 30-Jun-2015						
						Rs. in Lacs
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation-(Form No. 10A)	0	0	34.83	52.02	54.66	54.66
Interest on Loan-(Form No. 9E)	0	0	44.6	62.51	60.68	55.25
Return on Equity-(Form No. 8)	0	0	38.81	57.96	60.9	60.9
Int. on Working Capital-(Form No. 11)	0	0	5.31	7.53	7.73	7.73
Op. and Maintenance-(Form No. 2)	0	0	46.9	64.37	66.51	68.71
Total		0	170.45	244.39	250.48	247.25
						(Petitioner)



Details of Transmission Lines and Substations, Communication System

Name of the Petitioner: Power Grid Corporation of India Limited
Name of the Region: EASTERN REGION
Name of the Project: ERSS 8
Name of the Transmission element or Communication system: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S
Date of Commercial Operation: 30-Jun-2015

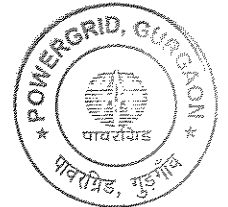
Substations:

Sl. No.	Name of Sub-station	Type of Substation	Voltage level KV	No. of Transformers / Reactors/ SVC etc.	No. of Bays			Date of Commercial operation		Covered in the present petition	
					765 KV	400 KV	132 KV & below	Yes/No	If No, petition No.	Yes/No	If No, petition No.
1	INDRAVATI-400 kV Reactor bay		400		1			30-Jun-15	Y		
	Total				1						

Communication System:

Sl. No.	Name of Communication System	Type of Communication System	Technical Particulars	Number / length	Date of Commercial operation	Covered in the present petition	
						Yes/No	If No, petition

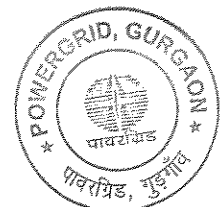
(Petitioner)



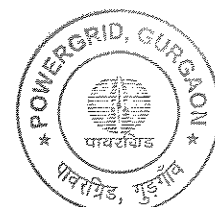
Form 3
Normative parameters considered for tariff computations
Name of the Petitioner :: Power Grid Corporation of India Limited
Name of the Region :: EASTERN REGION
Name of the Project :: ERSS 8
Name of the Transmission Element or Communication System :: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S
Date of Commercial Operation: 30-Jun-2015

Particulars	Unit	Existing 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return of Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Tax Rate	%	11.33%	20.96%	20.96%	20.96%	20.96%	20.96%
Effective tax rate	%						
Grossed up Rate of ROE	%	17.48%	19.61%	19.61%	19.61%	19.61%	19.61%
Target availability - AC System	%		98%	98%	98%	98%	98%
Target availability - HVDC System	%		96%	96%	96%	96%	96%
Normative O&M per KM	Rs. Lakh						
Double Circuit (Bundle conductor with	Rs. Lakh	1.174	1.062	1.097	1.133	1.171	1.21
Double Circuit (Single Conductor)	Rs. Lakh	0.336	0.303	0.313	0.324	0.334	0.346
Double Circuit (Two and Three Conduct	Rs. Lakh	0.783	0.707	0.731	0.755	0.78	0.806
Multicircuit with four or more conduct	Rs. Lakh		1.863	1.925	1.989	2.055	2.123
Multicircuit with two or three conduct	Rs. Lakh		1.24	1.282	1.324	1.368	1.413
Single Circuit (Bundled conductor with	Rs. Lakh	0.671	0.606	0.627	0.647	0.669	0.691
Single Circuit (Single Conductor)	Rs. Lakh	0.224	0.202	0.209	0.216	0.223	0.23
Single Circuit (Six conductor)	Rs. Lakh	0.671	0.707	0.731	0.755	0.78	0.806
Single Circuit (Twin and Three conduct	Rs. Lakh	0.447	0.404	0.418	0.432	0.446	0.461
Normative O&M per bay							
132KV Sub-station and below	Rs. Lakh	32.73	30.15	31.15	32.18	33.25	34.36
220KV Sub-station	Rs. Lakh	45.82	42.21	43.61	45.06	46.55	48.1
400 KV GIS Substation	Rs. Lakh		51.54	53.25	55.02	56.84	58.73
400KV Sub-station	Rs. Lakh	65.46	60.3	62.3	64.37	66.51	68.71
765KV Sub-station	Rs. Lakh	91.64	84.42	87.22	90.12	93.11	96.2
Balia-Bhiwadi HVDC Bipole Scheme	Rs. Lakh	1326.25	1537	1666	1805	1955	2119
HVDC Back-to Back Stations	Rs. Lakh	553	578	627	679	736	797
Rihand-Dadri HVDC Bipole Scheme	Rs. Lakh	1811	1511	1637	1774	1922	2082
Talcher-Kolar HVDC Bipole Scheme	Rs. Lakh	2122	1173	1271	1378	1493	1617
Spares for WC as % of O&M	%	15	15	15	15	15	15
Receivables in Months for WC	Months	2	2	2	2	2	2
Bank Rate as on 1st April, 2014	%	13.2	13.5	13.5	13.5	13.5	13.5
(Petitioner)							

2



						Form 4A
Statement of Capital Cost						
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S						
Date of Commercial Operation: 30-Jun-2015						
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs 2018-19
A. a) Opening Gross Block Amount as per books			817.32	935.25	1035.25	1035.25
b) Amount of capital liabilities in A(a) above						
c) Amount of IDC,FC,FERV and Hedging cost included in A(a) above			13.4	13.4	13.4	13.4
d) Amount of IEDC (excluding IDC,FC,FERV and Hedging cost) included in A(a) above			14.69	14.69	14.69	14.69
B. a) Addition in Gross Block Amount during the period			117.93	100		
b) Amount of capital liabilities in B(a) above						
c) Amount of IDC,FC,FERV and Hedging cost included in B(a) above						
d) Amount of IEDC (excluding IDC,FC,FERV and Hedging cost) included in B(a) above						
C. a) Closing Gross Block Amount as per Books			935.25	1035.25	1035.25	1035.25
b) Amount of capital liabilities in C(a) above						
c) Amount of IDC,FC,FERV and Hedging cost included in C(a) above			13.4	13.4	13.4	13.4
d) Amount of IEDC (excluding IDC,FC,FERV and Hedging cost) included in C(a) above			14.69	14.69	14.69	14.69
						(Petitioner)



Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element

Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.

Name of the Region: EASTERN REGION-II

Name of the Project: EASTERN REGION SYSTEM STRENGTHENING SCHEME-VIII

Name of the Transmission Element or : Communication system:

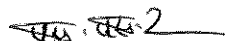
1 No. of 1x125 MVAR Bus Reactor
and associated bay at 400 KV
Indravati S/S

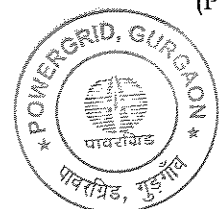
New Projects

Capital Cost Estimates

Board of Director/ Agency approving the Capital cost estimates:	Board of Directors	
Date of approval of the Capital cost estimates:	27.08.2013	
Price level of approved estimates	Present Day Cost	Completed Cost
	As of End of 1stQtr. Of the year 2013.	As on Scheduled COD of the transmission system/ transmission element/ Communication System
Foreign Exchange rate considered for the Capital cost estimates	N/A	N/A
Capital Cost excluding IDC, IEDC& FC		
Foreign Component, if any (In Million US \$ or the relevant Currency)	N/A	N/A
Domestic Component (Rs Lakh)	973.40	1021.85
Capital cost excluding IDC, FC, FERV & Hedging Cost (Rs. Cr)	973.40	1021.85
IDC, IEDC, FC, FERV & Hedging Cost		
Foreign Component, if any (In Million US \$ or the relevant Currency)		
Domestic Component (Rs Lakh)	50.29	13.4
Total IDC, FC, FERV & Hedging Cost (Rs Lakh)	50.29	13.40
Rate of taxes & duties considered		
Capital cost Including IDC, IEDC, FC, FERV & Hedging Cost		
Foreign Component, if any (In Million US \$ or the relevant Currency)		
Domestic Component (Rs Lakh)	1023.69	1035.25
Capital cost Including IDC, IEDC& FC (Rs Lakh)	1023.69	1035.25
Schedule of Commissioning		
COD of transmission system 1 /transmission element 1/Communication System 1	30.06.2015	
COD of transmission system 1/ transmission element 2/ Communication System 2		

COD of last transmission system /transmission element / Communication System		


(Petitioner)



Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.

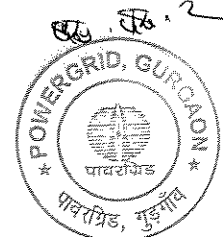
Name of the Region: EASTERN REGION-II

Name of the Project: EASTERN REGION SYSTEM STRENGTHENING SCHEME-VIII

Name of the Transmission Element or : Communication 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/5 system:

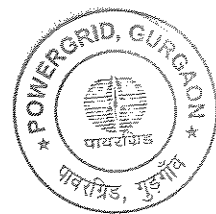
(Amount in Rs. Lakh)

Sl. No. (1)	Particulars (2)	Cost in Rs. Lakh						Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
		As per Original Estimates (3)			Actual Capital Expenditure as on COD i.e. 30.06.2015 (4)						
		Quantity	Rate	Estimated Amount	Qty	Rate	Actual Amount				
A	TRANSMISSION LINE										
1	Preliminary works										
1.1	Design & Engineering										
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.										
1.3	Total Preliminary works	0	0	0	0	0	0	0	0		
2	Transmission Lines material										
2.1	Towers Steel										
2.2	Conductor										
2.3	Earth Wire										
2.4	Insulators										
2.5	Hardware Fittings										
2.6	Conductor & Earth wire accessories										
2.7	Spares										
2.8	Erection, Stringing & Civil works including foundation										
	Total Transmission Lines material	0	0	0	0	0	0	0	0		
3	Taxes and Duties										
3.1	Custom Duty										
3.2	Other Taxes & Duties										
	Total Taxes & Duties	0	0	0	0	0	0	0	0		
	Total -Transmission lines	0	0	0	0	0	0	0	0		
B:	SUBSTATIONS										
4	Preliminary works & land										
4.1	Design & Engineering			0							
4.2	Land			0.00							
4.3	Site preparation	1	19.59	19.59	1	0	0.00	0.00	19.59		
	Total Preliminary works & land			19.59			0	0	19.59		
5	Civil Works										
5.1	Control Room & Office Building including HVAC			0							
5.2	Township & Colony			0							
5.3	Roads and Drainage			0							
5.4	Foundation for structures	1.00	74.85	74.85	1.00	137.00	101.10	35.90	-62.15	Work done in charged condition that's there is some modification in structure	
5.5	Misc. civil works										
	Total Civil Works			74.85			101.10	35.90	-62.15		



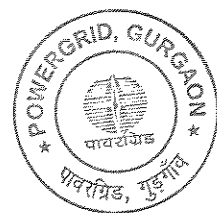
Sl. No. (1)	Particulars (2)	Cost in Rs. Lakh						Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
		As per Original Estimates (3)			Actual Capital Expenditure as on COD i.e. 30.06.2015 (4)						
		Quantity	Rate	Estimated Amount	Qty	Rate	Actual Amount				
6	Substation Equipments										
6.1	Switchgear (CT,PT, Circuit Breaker, Isolator etc)	1.00	98.47	98.47	1.00	106.27	81.28	24.99	-7.80	minor chage in cost due to actual awarded rate	
6.2	Transformers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6.3	Compensating Equipment(Reactor, SVCs etc)	1.00	542.52	542.52	1.00	663.29	540.85	122.44	-120.77	Award of this project through competitive bidding that's as per actual award there is price variation	
6.4	Control , Relay & Protection Panel	1.00	25.39	25.39	1.00	34.76	20.00	14.76	-9.37		
6.5	PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6.6	HVDC package	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
6.7	Bus Bars/ conductors/ Insulators	1.00	17.63	17.63	1.00	23.24	15.00	8.24	-5.61	as per actual awarded rate	
6.8	Outdoor lighting	1.00	3.92	3.92	1.00	1.31	1.00	0.31	2.61		
6.9	Emergency D.G. Set	1.00	27.32	27.32	1.00	33.31	25.00	8.31	-5.98	minor chage in cost due to actual awarded rate	
6.1	Grounding System							0.00			
6.11	Structure for switchyard	1.00	46.04	46.04	1.00	7.98	5.00	2.98	38.06		
	Total Substation Equipments			761.29	7.00		688.13	182.03	-108.87		
7	Spares									Included in above	
8	Taxes and Duties										
8.1	Custom Duty										
8.2	Other Taxes & Duties										
8.3	Total Taxes & Duties	0	0	0	0	0	0	0	0	Included in above	
	Total (Sub-station)			855.74			789.23	217.93	-151.42		
C	Communication System										
9.1	Preliminary Works										
9.2	Communication System equipment's										
9.3	Taxes and Duties										
	Total (Communication System)	0	0	0	0	0	0	0	0		
10	Construction and pre- commissioning expenses										
10.1	Site supervision & site administration etc.										
10.2	Tools and Plants										
10.3	construction insurance										
	Total Construction and pre commissioning expenses	0	0	0	0	0	0	0	0		
11	Overheads										
11.1	Establishment			117.66			14.69		102.97		
11.2	Audit & Accounts										
11.3	Contingency										
	Total Overheads	0	0	117.66	0	0	14.69	0	102.97		

48. 108-2



Sl. No. (1)	Particulars (2)	Cost in Rs. Lakh						Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
		As per Original Estimates (3)			Actual Capital Expenditure as on COD i.e. 30.06.2015 (4)						
		Quantity	Rate	Estimated Amount	Qty	Rate	Actual Amount				
12	Cost of Plant & Machinery										
13	Capital Cost including Plant & Machinery										
13.1	Interest During Construction (IDC)			50.29			13.4		36.89		
13.2	Financing Charges (FC)										
13.3	Foreign Exchange Rate Variation (FERV)										
13.4	Hedging Cost										
	Total of IDC, FC, FERV & Hedging Cost	0	0	50.29	0	0	13.40	0	36.89		
14	Capital cost including IDC, FC, FERV & Hedging Cost	0.00	0.00	1023.69	0.00	0.00	817.32	217.93	-11.56		

[Signature]
(Petitioner)



Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.

Name of the Region: EASTERN REGION-II

Name of the Project: EASTERN REGION SYSTEM STRENGTHENING SCHEME-VIII

Name of the Transmission Element or Communication Asset I 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

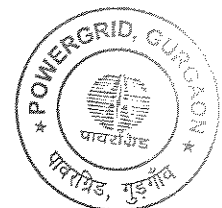
Asset II 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV IJeyporeS/S

Element or
Communication

Transmission Lines:

S. No.	Name of line	Apportioned approved cost (Rs. Lakh)	Revised cost estimates, if applicable (Rs. Lakh)	Completed Cost (Rs. Lakh)	Covered in the present petition	
					Yes/No	If No, petition No.
1						
2						
-						
Substations:						
S.NO.	Name of Sub-station	Apportioned approved cost (Rs. Lakh)	Revised cost estimates, if applicable (Rs. Lakh)	Completed Cost (Rs. Lakh)	Covered in the present petition	
					Yes/No	If No, petition No.
1	Asset I: 01 No. 1x500 MVA ICT at 400/220 KV Subhasgram S/S along with the associated bays and 02 Nos. of 220 kV equipped line bays at 400 KV Subhasgram S/S	2085.74		3312.69	No	475/TT/2014
2	Asset II: 125 MVAR Bus Reactor – I Muzaffarpur Substation alongwith bays	1041.5		1136.48	No	475/TT/2014
3	Asset III: 125 MVAR Bus Reactor II replacing existing 63 MVAR Bus Reactor at Muzaffarpur alongwith bays #	1037.57		1138.54	No	475/TT/2014
4	Asset IV: 01 no 125 MVAR Bus Reactor and associated bays at 400kV Rourkela S/S	972.51		1030.88	No	142/TT/2015
5	Asset V: Installation of 1x125 MVAR Bus Reactor at 400 KV Indravati S/S	1023.69		1035.25	Yes	
6	Asset VI: No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV IJeyporeS/S	748.67		834.93	Yes	
Total		6909.68		8488.77		
Communication System:						
S.	Name of Communication System	Apportioned approved cost (Rs. Lakh)	Revised cost estimates, if applicable (Rs. Lakh)	Completed Cost (Rs. Lakh)	Covered in the present petition	
					Yes/No	If No, petition No.
NO.						
1						


 (Petitioner)



Financial Package upto COD (Block Year- 2014-2019)

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

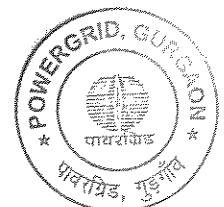
Name of the Transmission Element or Communication Element: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

Date of commercial Operation: 30-Jun-2015

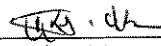
Rs. In Lakhs

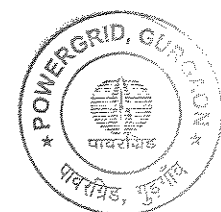
Particulars	Financial Package as Approved		Financial Package as on COD		As Admitted by COD / 31.03.2014	
	Currency	Amount	Currency	Amount	Currency	Amount
Loans						
Loans-Domestic	INR	716.58	INR	572.12		
Loans-Foreign			INR			
Total Loans	INR	716.58	INR	572.12	INR	
Equity						
Foreign						
Domestic	INR	307.11	INR	245.2		
Notional						
Total Equity	INR	307.11	INR	245.2	INR	
Debt Equity Ratio				70:30:00		
Total Cost	INR	1023.69	INR	817.32	INR	
	Debt	Equity	Total			
Add Cap for 2015-2016			117.93			
Add Cap for 2016-2017			100			
Add Cap for 2015-2016	Actual	Normative				
Debt		82.55				
Equity		35.38				
Total		117.93				
Add Cap for 2016-2017	Actual	Normative				
Debt		70				
Equity		30				
Total		100				
Total Capital cost with Addcap		1035.25				


 (Petitioner)

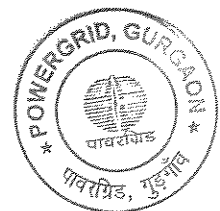


Form-7
Statement of Additional Capitalisation after COD
Name of the Petitioner: Power Grid Corporation of India Limited
Name of the Region: EASTERN REGION
Name of the Project: ERSS 8
Name of the Transmission Element or Communication system: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S
Date of Commercial Operation: 30-Jun-2015

Sl. No.	Year	Work / Equipment proposed to be added after COD upto cut off date/beyond cut off date	Amount capitalised and proposed to be capitalised	Justification	Regulation under which covered	Admitted Cost
1	2015-2016	SUB STATION	117.93	Balance & Retention Payment	14,1(i)	
	2015-2016	Total	117.93			
2	2016-2017	SUB STATION	100	Balance & Retention Payment	14,1(i)	
	2016-2017	Total	100			
 (Petitioner)						



Financing of Additional Capitalisation										
Name of the Petitioner: Power Grid Corporation of India Limited										
Name of the Region: EASTERN REGION										
Name of the Project: ERSS 8										
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S										
Date of Commercial Operation: 30-Jun-2015										
										Amount in Lakhs
Financial Year	Projected					Admitted				
	2014-15	2015-16	2016-17	2017-18	2018-19					
Amount Capitalised in Work										
Financing Details										
Loan	0	82.55	70	0	0					
Total Loan	0	82.55	70	0	0					
Equity	0	35.38	30	0	0					
Total	0	117.93	100	0	0					
										_____ (Petitioner)



Calculation of Return on Equity

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

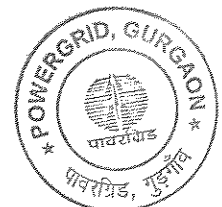
Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

Date of Commercial operation: 30-Jun-2015

						Rs. in Lacs
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	0	0	245.2	280.58	310.58	310.58
Notional Equity on Add Cap	0	0	35.38	30	0	0
Total Equity	0	0	280.58	310.58	310.58	310.58
Average Equity	0	0	262.89	295.58	310.58	310.58
Rate of Return on Equity (%)	0	0	19.61	19.61	19.61	19.61
Return on Equity	0	0	51.55	57.96	60.9	60.9
Pro rata Return on Equity	0	0	38.81	57.96	60.9	60.9
Calculation of Grossed up Rate of ROE						
Rate of ROE	0	0	15.5	15.5	15.5	15.5
Time Line Incentive	0	0	0	0	0	0
Communication Dis-incentive	0	0	0	0	0	0
Effective Rate of ROE	0	0	15.5	15.5	15.5	15.5
MAT Rate	0	0	20.96	20.96	20.96	20.96
Grossed up Rate of ROE	0	0	19.61	19.61	19.61	19.61


 (Petitioner)



Calculation of Weighted Average Rate of Interest on Actual Loans

Name of the Transmission Licensee: Power Grid Corporation of India Limited

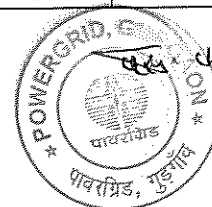
Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

Date of Commercial Operation: 30-Jun-2015

Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs
						2018-19
Bond XLVII-loan1-						
Gross Opening Loan	0	0	10	10	10	10
Cumulative Repayments of Loans upto Previous Year	0	0	0	0	0	0
Net Loans Opening	0	0	10	10	10	10
Add: Drawl(s) during the year	0	0	0	0	0	0
Less: Repayment(s) of Loan during the year	0	0	0	0	0	0
Net Closing Loan	0	0	10	10	10	10
Average Net Loan	0	0	10	10	10	10
Rate of Interest on Loan	0	0	8.93	8.93	8.93	8.93
Interest on Loan	0	0	0.89	0.89	0.89	0.89
Bond XLVIII-loan2-						
Gross Opening Loan	0	0	42	42	42	42
Cumulative Repayments of Loans upto Previous Year	0	0	0	0	0	0
Net Loans Opening	0	0	42	42	42	42
Add: Drawl(s) during the year	0	0	0	0	0	0
Less: Repayment(s) of Loan during the year	0	0	0	0	0	0
Net Closing Loan	0	0	42	42	42	42
Average Net Loan	0	0	42	42	42	42
Rate of Interest on Loan	0	0	8.2	8.2	8.2	8.2
Interest on Loan	0	0	3.44	3.44	3.44	3.44
PROPOSED LOAN 2015-16 (10.10%)-loan3-						
Gross Opening Loan	0	0	520.12	520.12	520.12	520.12
Cumulative Repayments of Loans upto Previous Year	0	0	0	0	0	0
Net Loans Opening	0	0	520.12	520.12	520.12	520.12
Add: Drawl(s) during the year	0	0	0	0	0	0
Less: Repayment(s) of Loan during the year	0	0	0	0	0	0
Net Closing Loan	0	0	520.12	520.12	520.12	520.12
Average Net Loan	0	0	520.12	520.12	520.12	520.12
Rate of Interest on Loan	0	0	10.1	10.1	10.1	10.1
Interest on Loan	0	0	52.53	52.53	52.53	52.53
Summary						
Gross Opening Loan	0	0	572.12	572.12	572.12	572.12



Calculation of Interest on Normative Loan

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

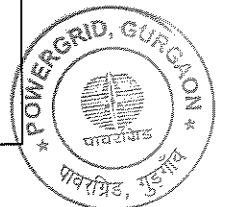
Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

Date of Commercial Operation: 30-Jun-2015

Particulars	Revised	2014-15	2015-16	2016-17	2017-18	2018-19	Rs. in Lacs
	2013-14						
Gross Normative Loan Opening	0	0	572.12	654.67	724.67	724.67	
Cumulative Repayments of Normative Loans upto Previous Year	0	0	0	34.83	86.85	141.51	
Net Normative Loans Opening	0	0	572.12	619.84	637.82	583.16	
Increase/Decrease due to ACE during the year	0	0	82.55	70	0	0	
Less: Repayment(s) of Normative Loan during the year	0	0	34.83	52.02	54.66	54.66	
Net Closing Normative Loan	0	0	619.84	637.82	583.16	528.5	
Average Net Normative Loan	0	0	595.98	628.83	610.49	555.83	
Rate of Interest on Loan	0	0	9.94	9.94	9.94	9.94	
Interest on Normative Loan	0	0	59.24	62.51	60.68	55.25	
Pro rata interest on Normative Loan	0	0	44.6	62.51	60.68	55.25	

(Petitioner)



Calculation of Depreciation Rate

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

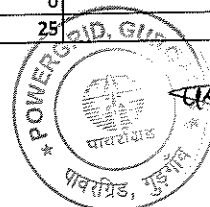
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

Date of Commercial Operation: 30-Jun-2015

Sl. No.	Particulars	Gross block at the beginning of the year	Add Cap during the year	Gross block at the end of the year	Average Gross Block	Dep. Rate	Rs. in Lacs Amount
2015-2016							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	817.32	117.93	935.25	876.29	5.28	46.27
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	817.32	117.93	935.25	876.29		46.27
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						1
2016-2017							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	935.25	100	1035.25	985.25	5.28	52.02
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	935.25	100	1035.25	985.25		52.02
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						2
2017-2018							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	1035.25	0	1035.25	1035.25	5.28	54.66
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	1035.25	0	1035.25	1035.25		54.66
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						3
2018-2019							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	1035.25	0	1035.25	1035.25	5.28	54.66
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	1035.25	0	1035.25	1035.25		54.66
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						4

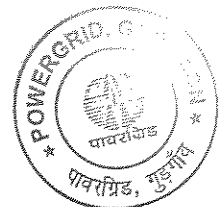
The Calculation of Total Life of Asset

Sl. N	Name of the Assets	Gross Block	Life As per CERC Norms	Weighted Life (4)=Col.2 x Col.3
	-1	-2	-3	
1	FREEHOLD LAND	0	0	0
2	BUILDING	0	25	0

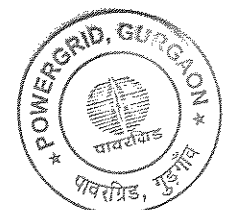


Sl. No.	Particulars	Gross block at the beginning of the year	Add Cap during the year	Gross block at the end of the year	Average Gross Block	Dep. Rate	Rs. in Lacs Amount
3	TR LINE		0		35		0
4	SUB STATION		817.32		25		20433
5	PLCC		0		25		0
6	LEASEHOLD LAND		0		25		0
	Total		817.32				20433
	Total Life of Asset				20433/817.32		25
							(Petitioner)

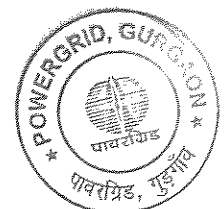
[Handwritten signature]



						Form 10A
Statement of Depreciation						
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S						
Date of Commercial Operation: 30-Jun-2015						
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs 2018-19
Opening Capital Cost	0	0	817.32	935.25	1035.25	1035.25
AddCap Cost	0	0	117.93	100	0	0
Closing Capital Cost	0	0	935.25	1035.25	1035.25	1035.25
Average Capital Cost	0	0	876.29	985.25	1035.25	1035.25
Freehold Land (Av. Cost)	0	0	0	0	0	0
Rate of Depreciation	0	0	5.28	5.28	5.28	5.28
Depreciable Value	0	0	788.66	886.73	931.73	931.73
Balance useful life of the asset (at the beginning of year)	0	0	25	24	23	22
Elapsed life of the asset (at the beginning of the year)	0	0	0	1	2	3
Remaining Depreciable Value	0	0	788.66	851.9	844.88	790.22
Depreciation during the year	0	0	34.83	52.02	54.66	54.66
Depreciation upto previous year	0	0	0	34.83	86.85	141.51
Cumulative depreciation (incl. of AAD)	0	0	34.83	86.85	141.51	196.17
						(Petitioner)



						Form 11
Calculation of Interest on Working Capital						
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S						
Date of Commercial Operation: 30-Jun-2015						
						Rs. in Lacs
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Op. and Maintenance	0	0	5.19	5.36	5.54	5.73
Maintenance Spares	0	0	9.35	9.66	9.98	10.31
Receivables	0	0	37.74	40.73	41.75	41.21
Total working capital	0	0	52.28	55.75	57.27	57.25
Rate of Interest	0	0	13.5	13.5	13.5	13.5
Interest on working capital	0	0	7.06	7.53	7.73	7.73
Pro rata Interest on working capital	0	0	5.31	7.53	7.73	7.73
						(Petitioner)




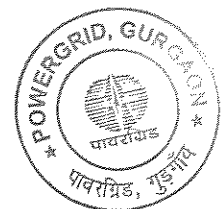
Details of time over run

Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.
Name of the Region: EASTERN REGION-II
Name of the Project/element: 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

S.No	Description of Activity/Works/Service	Original Schedule (As per Planning)		Actual Schedule (As per Actual)		Time Over-Run	Agency responsible and whether such time over run was beyond the control of the Transmission Licensee	Reasons for delay	Other Activity affected (Mention Sr No of activity affected)
		Start Date	Completion Date	Start Date	Completion Date	Months			
1	Installation of Reactor and construction of reactor bay	27.08.2013	27.04.2015	16.09.2013	30.06.2015	2		The works done in charged condition	
2									

1. Delay on account of each reason in case of time overrun should be quantified and substantiated with necessary documents and supporting workings.


(Petitioner)



Draw Down Schedule for Calculation of IDC & Financing Charges

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

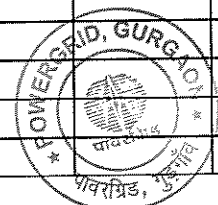
Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S

Rs. In Lakhs

Drawn Down Schedule for Calculation of IDC & Financing Charges

Sl.No.	Drawn Down Particulars	Quarter 1		Quarter 2		Quarter n (COD)	
		Quantum in FC	Ex. Rate on Drawn Down Date Amount in Indian Rupee	Quantum in FC	Ex. Rate on Drawn Down Date Amount in Indian Rupee	Quantum in FC	Ex. Rate on Drawn Down Date Amount in Indian Rupee
	Loans						
	Foreign Loans						
	Total of Foreign Loans						
	Drawn Down Account						
	IDC						
	Financing Charges						
	Indian Loans						
	Bond XLVII						10
	Draw Down Account						
	IDC						
	Financing Charges						
	Bond XLVIII						42
	Draw Down Account						
	IDC						
	Financing Charges						
	PROPOSED LOAN 2015-16 (10.10%)						520.12
	Draw Down Account						
	IDC						
	Financing Charges						
	Total of Indian Loans						572.12
	Drawn Down Account						
	IDC						
	Financing Charges						
	Total of Loan Drawn						572.12
	Drawn Down Account						
	IDC						13.4
	Financing Charges						
	Equity						
	Foreign Equity Drawn						
	Indian Equity Drawn						245.2



43, 4

Breakup of Initial Spares

Name of the Petitioner: POWERGRID

Name of the Region: ER

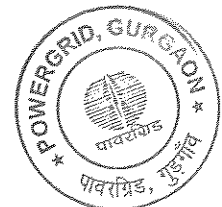
Name of the Project: ERSS-VIII

Name of the Transmission Element or Communication system: 1No. of 1x125 MVAR Bus Reactor and associated bays at 400 KV Indravati S/S

(Amount in Rs. Lakh)

Particulars	Plant & Machinery Cost (excluding IDC and IEDC)	IEDC	IDC	Year wise additional Capital expenditure up to cut off date			Total Cost	Initial spares claimed	
				Year -1	Year-2	Year-3		Amount	%
Transmission Line									
Transmission Substation (Green Field/Brown Field)	789.23	14.69	13.4	117.93	100	1035.25	nil		
PLCC									
Series Compensation devices									
HVDC Station									
Gas Insulated Substation									
Communication System									

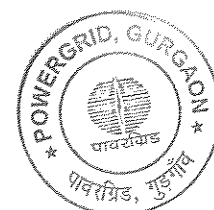
~~_____~~
Petitioner)

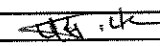


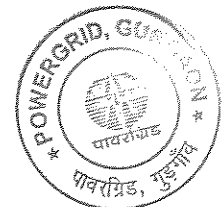
Other Income as on COD

Name of the Petitioner:		POWERGRID					
Name of the Region:		ER					
Name of the Project:		Orissa -A					
Name of the Transmission Element or Communication system:		1No. of 1x125 MVAR Bus Reactor and associated bays at 400 KV Indravati S/S					
Date of Commercial Operation		30.06.2015					
		(Amount in Rs. Lakh)					
Sl. No.	Parameters	Existing 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	Interest on Loans and advances	0	0				
2	Income from sale of scrap						
3	Misc. receipts (Please Specify Details)						
...	...	0					
...	... (add)						


 (Petitioner)



Summary Sheet						Form I
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S						
Date of Commercial operation : 30-Jun-2015						
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs 2018-19
Depreciation-(Form No. 10A)	0	0	29.51	42.76	44.08	44.08
Interest on Loan-(Form No. 9E)	0	0	38.38	52.1	49.48	45.03
Return on Equity-(Form No. 8)	0	0	32.89	47.65	49.12	49.12
Int. on Working Capital-(Form No. 11)	0	0	4.91	6.84	6.96	6.98
Op. and Maintenance-(Form No. 2)	0	0	46.9	64.37	66.51	68.71
Total		0	152.59	213.72	216.15	213.92
						 (Petitioner)



Form-2
Details of Transmission Lines and Substations, Communication System
Name of the Petitioner: Power Grid Corporation of India Limited
Name of the Region: EASTERN REGION
Name of the Project: ERSS 8
Name of the Transmission element or Communication system: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S
Date of Commercial Operation: 30-Jun-2015

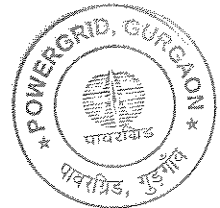
Substations:

Sl. No.	Name of Sub-station	Type of Substation	Voltage level KV	No. of Transformers / Reactors / SVC etc.	No. of Bays			Date of Commercial operation		Covered in the present petition	
					765 KV	400 KV	220 KV	132 KV & below	Yes/No	If No, petition No.	
1	JEYPORE-400 kV Reactor bay		400		1			30-Jun-15	Y		
	Total				1						

Communication System:

Sl. No.	Name of Communication System	Type of Communication System	Technical Particulars	Number / length	Date of Commercial operation		Covered in the present petition	
					Yes/No	If No, petition	Yes/No	If No, petition

(Petitioner)

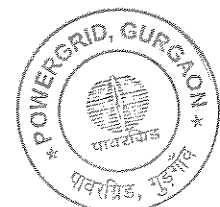


Form 3
Normative parameters considered for tariff computations
Name of the Petitioner :: Power Grid Corporation of India Limited
Name of the Region :: EASTERN REGION
Name of the Project :: ERSS 8
Name of the Transmission Element or Communication System :: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S
Date of Commercial Operation: 30-Jun-2015

Particulars	Unit	Existing 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate of Return of Equity	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Tax Rate	%	11.33%	20.96%	20.96%	20.96%	20.96%	20.96%
Effective tax rate	%						
Grossed up Rate of ROE	%	17.48%	19.61%	19.61%	19.61%	19.61%	19.61%
Target availability - AC System	%		98%	98%	98%	98%	98%
Target availability - HVDC System	%		96%	96%	96%	96%	96%
Normative O&M per KM	Rs. Lakh						
Double Circuit (Bundle conductor with	Rs. Lakh	1.174	1.062	1.097	1.133	1.171	1.21
Double Circuit (Single Conductor)	Rs. Lakh	0.336	0.303	0.313	0.324	0.334	0.346
Double Circuit (Two and Three Conduct	Rs. Lakh	0.783	0.707	0.731	0.755	0.78	0.806
Multicircuit with four or more conduct	Rs. Lakh		1.863	1.925	1.989	2.055	2.123
Multicircuit with two or three conduct	Rs. Lakh		1.24	1.282	1.324	1.368	1.413
Single Circuit (Bundled conductor with	Rs. Lakh	0.671	0.606	0.627	0.647	0.669	0.691
Single Circuit (Single Conductor)	Rs. Lakh	0.224	0.202	0.209	0.216	0.223	0.23
Single Circuit (Six conductor)	Rs. Lakh	0.671	0.707	0.731	0.755	0.78	0.806
Single Circuit (Twin and Three conduct	Rs. Lakh	0.447	0.404	0.418	0.432	0.446	0.461
Normative O&M per bay							
132KV Sub-station and below	Rs. Lakh	32.73	30.15	31.15	32.18	33.25	34.36
220KV Sub-station	Rs. Lakh	45.82	42.21	43.61	45.06	46.55	48.1
400 KV GIS Substation	Rs. Lakh		51.54	53.25	55.02	56.84	58.73
400KV Sub-station	Rs. Lakh	65.46	60.3	62.3	64.37	66.51	68.71
765KV Sub-station	Rs. Lakh	91.64	84.42	87.22	90.12	93.11	96.2
Balia-Bhiwadi HVDC Bipole Scheme	Rs. Lakh	1326.25	1537	1666	1805	1955	2119
HVDC Back-to Back Stations	Rs. Lakh	553	578	627	679	736	797
Rihand-Dadri HVDC Bipole Scheme	Rs. Lakh	1811	1511	1637	1774	1922	2082
Talcher-Kolar HVDC Bipole Scheme	Rs. Lakh	2122	1173	1271	1378	1493	1617
Spares for WC as % of O&M	%	15	15	15	15	15	15
Receivables in Months for WC	Months	2	2	2	2	2	2
Bank Rate as on 1st April, 2014	%	13.2	13.5	13.5	13.5	13.5	13.5
(Petitioner)							

Handwritten signature/initials

84



Abstract of Capital Cost Estimates and Schedule of Commissioning for the New Project/Element

Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.

Name of the Region: EASTERN REGION-II

Name of the Project: EASTERN REGION SYSTEM STRENGTHENING SCHEME-VIII

Name of the Transmission Element or : Communication system:

1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

New Projects

Capital Cost Estimates

Board of Director/ Agency approving the Capital cost estimates:	Board of Directors	
Date of approval of the Capital cost estimates:	27.08.2013	
Price level of approved estimates	Present Day Cost As of End of 1stQtr. Of the year 2013.	Completed Cost As on Scheduled COD of the transmission system/transmission element/ Communication System
Foreign Exchange rate considered for the Capital cost estimates	N/A	N/A
Capital Cost excluding IDC, IEDC& FC		
Foreign Component, if any (In Million US \$ or the relevant Currency)	N/A	N/A
Domestic Component (Rs Lakh)	711.89	824.21
Capital cost excluding IDC, FC, FERV & Hedging Cost (Rs. Cr)	711.89	824.21
IDC, IEDC, FC, FERV & Hedging Cost		
Foreign Component, if any (In Million US \$ or the relevant Currency)		
Domestic Component (Rs Lakh)	36.78	10.72
Total IDC, FC, FERV & Hedging Cost (Rs Lakh)	36.78	10.72
Rate of taxes & duties considered		
Capital cost Including IDC, IEDC, FC, FERV & Hedging Cost		
Foreign Component, if any (In Million US \$ or the relevant Currency)		
Domestic Component (Rs Lakh)	748.67	834.93
Capital cost Including IDC, IEDC& FC (Rs Lakh)	748.67	834.93
Schedule of Commissioning		
COD of transmission system 1 /transmission element 1/Communication System 1	30.06.2015	
COD of transmission system 1/ transmission element 2/ Communication System 2		

COD of last transmission system / transmission element / Communication System		



Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

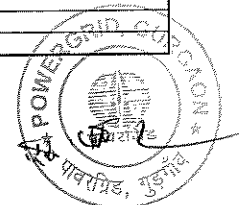
Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.

Name of the Region: EASTERN REGION-II

Name of the Project: EASTERN REGION SYSTEM STRENGTHENING SCHEME-VIII

Name of the Transmission Element or : Communication 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S system:

Sl. No. (1)	Particulars (2)	Cost in Rs. Lakh						Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)
		As per Original Estimates (3)			Actual Capital Expenditure as on COD i.e. 30.06.2015 (4)					
		Quantity	Rate	Estimated Amount	Qty	Rate	Actual Amount			
A	TRANSMISSION LINE									
1	Preliminary works									
1.1	Design & Engineering									
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.									
1.3	Total Preliminary works	0	0	0	0	0	0	0	0	
2	Transmission Lines material									
2.1	Towers Steel									
2.2	Conductor									
2.3	Earth Wire									
2.4	Insulators									
2.5	Hardware Fittings									
2.6	Conductor & Earth wire accessories									
2.7	Spares									
2.8	Erection, Stringing & Civil works including foundation									
	Total Transmission Lines material	0	0	0	0	0	0	0	0	
3	Taxes and Duties									
3.1	Custom Duty									
3.2	Other Taxes & Duties									
	Total Taxes & Duties	0	0	0	0	0	0	0	0	
	Total -Transmission lines	0	0	0	0	0	0	0	0	
B.	SUBSTATIONS									
4	Preliminary works & land									
4.1	Design & Engineering			0						
4.2	Land			0.00						
4.3	Site preparation	1	19.59	19.59	1	0	0.00	0.00	19.59	Considered only in FR. As per actual not happened
	Total Preliminary works & land			19.59			0	0	19.59	
5	Civil Works									
5.1	Control Room & Office Building including HVAC			0						
5.2	Township & Colony			0						
5.3	Roads and Drainage			0						
5.4	Foundation for structures	1.00	31.07	31.07	1.00	101.01	77.48	23.53	-69.94	Revision of scope of bay extension and original design and layout changed
5.5	Misc. civil works									
	Total Civil Works			31.07			77.48	23.53	-69.94	



Sl. No. (1)	Particulars (2)	Cost in Rs. Lakh						Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)
		As per Original Estimates (3)			Actual Capital Expenditure as on COD i.e. 30.06.2015 (4)					
		Quantity	Rate	Estimated Amount	Qty	Rate	Actual Amount			
6	Substation Equipments									
6.1	Switchgear (CT,PT, Circuit Breaker, Isolator etc)	1.00	19.59	19.59	1.00	24.46	18.50	5.96	-4.87	
6.2	Transformers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.3	Compensating Equipment(Reactor, SVCs etc)	1.00	516.40	516.40	1.00	662.24	565.96	96.28	-145.84	Package awarded on the based of competitive bidding that's the awarded package on higher cost as per actual estimate
6.4	Control , Relay & Protection Panel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.5	PLCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.6	HVDC package	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.7	Bus Bars/ conductors/ Insulators	1.00	14.69	14.69	1.00	0.71	0.50	0.21	13.99	As per actual awarded rate
6.8	Outdoor lighting	1.00	3.92	3.92	0.00	0.00	0.00	0.00	3.92	
6.9	Emergency D.G. Set	1.00	20.57	20.57	1.00	23.38	15.00	8.38	-2.80	
6.1	Grounding System							0.00		
6.11	Structure for switchyard	1.00	0.00	0.00	1.00	0.89	0.50	0.39	-0.89	
	Total Substation Equipments			575.17	5.00		600.46	111.21	-136.50	
7	Spares									Included in above
8	Taxes and Duties									
8.1	Custom Duty									
8.2	Other Taxes & Duties									
8.3	Total Taxes & Duties	0	0	0	0	0	0	0	0	Included in above
	Total (Sub-station)			625.84			677.94	134.74	-186.84	
C	Communication System									
9.1	Preliminary Works									
9.2	Communication System equipment's									
9.3	Taxes and Duties									
	Total (Communication System)	0	0	0	0	0	0	0	0	
10	Construction and pre- commissioning expenses									
10.1	Site supervision & site administration .etc.									
10.2	Tools and Plants									
10.3	construction Insurance									
	Total Construction and pre commissioning expenses	0	0	0	0	0	0	0	0	
11	Overheads									
11.1	Establishment			86.05			11.53		74.52	As per actual
11.2	Audit & Accounts									
11.3	Contingency									
	Total Overheads	0	0	86.05	0	0	11.53	0	74.52	

88

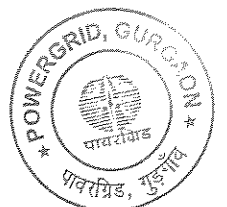


Sl. No. (1)	Particulars (2)	Cost in Rs. Lakh						Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)
		As per Original Estimates (3)			Actual Capital Expenditure as on COD i.e. 30.06.2015 (4)					
		Quantity	Rate	Estimated Amount	Qty	Rate	Actual Amount			
12	Cost of Plant & Machinery									
13	Capital Cost including Plant & Machinery									
13.1	Interest During Construction (IDC)			36.78			10.72		26.06	
13.2	Financing Charges (FC)									
13.3	Foreign Exchange Rate Variation (FERV)									
13.4	Hedging Cost									
	Total of IDC, FC, FERV & Hedging Cost	0	0	36.78	0	0	10.72	0	26.06	As per actual
14	Capital cost including IDC, FC, FERV & Hedging Cost	0.00	0.00	748.67	0.00	0.00	700.19	134.74	-86.26	

Petitioner

[Handwritten signature]

[Handwritten signature]



Break-up of Construction/Supply/Service Packages

Name of the Petitioner: POWERGRID CORPORATION OF INDIA LTD.
 Name of the Region: EASTERN REGION-II
 Name of the Project: EASTERN REGION SYSTEM STRENGTHENING SCHEME-VIII
 Name of the Transmission Element or Communication system: 1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

S. No.	Name/No. of Construction/supply/service package	Scope of works ¹ (in line with head of cost break-ups as applicable)	Whether awarded through ICB/DCB/Departmentally/Deposit Work, etc.	No. of bids received	Date of Award	Date of Start of work	Date of Completion of Work	Value of Award ² in (Rs. Lakh).	Firm or With Escalation in prices	Actual expenditure till the completion or up to COD whichever is earlier (Rs. Lakh)	Taxes & Duties and IEDC (Rs. Lakh)	IDC, FC, FERV & Hedging cost (Rs. Lakh)	Sub-Total (Rs. Lakh)
1	CC-CS/305-ER-1/SS-1827/3/G6/NOA-1/4778 (Supply portion)	Installation of 1x125 MVAR Bus Reactor at 400 KV Indravati S/S	DCB	7	16.09.2013	16.09.2013	27.12.2014	542.41	with PV	600.46			
2	CC-CS/305-ER-1/SS-1827/3/G6/NOA-II/4779 (Service portion)	Installation of 1x125 MVAR Bus Reactor at 400 KV Indravati S/S	DCB	7	16.09.2013	16.09.2013	27.12.2014	129.24	with PV	77.48	11.53	10.72	700.19

(Petitioner)



Financial Package upto COD (Block Year- 2014-2019)

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

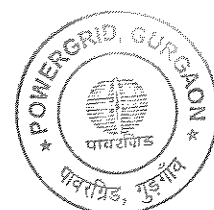
Name of the Transmission Element or Communication Element: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

Date of commercial Operation: 30-Jun-2015

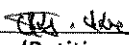
Rs. In Lakhs

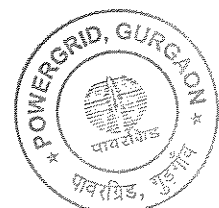
Particulars	Financial Package as Approved		Financial Package as on COD		As Admitted by COD / 31.03.2014	
	Currency	Amount	Currency	Amount	Currency	Amount
Loans						
Loans-Domestic	INR	524.07	INR	490.14		
Loans-Foreign			INR			
Total Loans	INR	524.07	INR	490.14	INR	
Equity						
Foreign						
Domestic	INR	224.6	INR	210.06		
Notional						
Total Equity	INR	224.6	INR	210.06	INR	
Debt Equity Ratio				70:30:00		
Total Cost	INR	748.67	INR	700.2	INR	
	Debt	Equity	Total			
Add Cap for 2015-2016			84.74			
Add Cap for 2016-2017			50			
Add Cap for 2015-2016	Actual	Normative				
Debt		59.32				
Equity		25.42				
Total		84.74				
Add Cap for 2016-2017	Actual	Normative				
Debt		35				
Equity		15				
Total		50				
Total Capital cost with Addcap		834.94				

(Petitioner)



Form-7
Statement of Additional Capitalisation after COD
Name of the Petitioner: Power Grid Corporation of India Limited
Name of the Region: EASTERN REGION
Name of the Project: ERSS 8
Name of the Transmission Element or Communication system: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S
Date of Commercial Operation: 30-Jun-2015

Sl. No.	Year	Work / Equipment proposed to be added after COD upto cut off date/beyond cut off date	Amount capitalised and proposed to be capitalised	Justification	Regulation under which covered	Admitted Cost
1	2015-2016	SUB STATION	84.74	balance and Retention payment	14,1(i)	
	2015-2016	Total	84.74			
2	2016-2017	SUB STATION	50	balance and Retention payment	14,1(i)	
	2016-2017	Total	50			
 (Petitioner)						



Financing of Additional Capitalisation

Name of the Petitioner: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

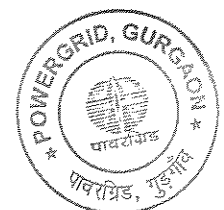
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

Date of Commercial Operation: 30-Jun-2015

Amount in Lakhs

Financial Year	Projected					Admitted				
	2014-15	2015-16	2016-17	2017-18	2018-19					
Amount Capitalised in Work										
Financing Details										
Loan	0	59.32	35	0	0					
Total Loan	0	59.32	35	0	0					
Equity	0	25.42	15	0	0					
Total	0	84.74	50	0	0					

(Signature)
(Petitioner)



Calculation of Return on Equity

Name of the Transmission Licensee: Power Grid Corporation of India Limited


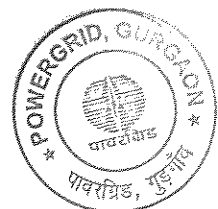
Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

Date of Commercial operation: 30-Jun-2015

						Rs. in Lacs
Particulars	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	0	0	210.06	235.48	250.48	250.48
Notional Equity on Add Cap	0	0	25.42	15	0	0
Total Equity	0	0	235.48	250.48	250.48	250.48
Average Equity	0	0	222.77	242.98	250.48	250.48
Rate of Return on Equity (%)	0	0	19.61	19.61	19.61	19.61
Return on Equity	0	0	43.69	47.65	49.12	49.12
Pro rata Return on Equity	0	0	32.89	47.65	49.12	49.12
Calculation of Grossed up Rate of ROE						
Rate of ROE	0	0	15.5	15.5	15.5	15.5
Time Line Incentive	0	0	0	0	0	0
Communication Dis-incentive	0	0	0	0	0	0
Effective Rate of ROE	0	0	15.5	15.5	15.5	15.5
MAT Rate	0	0	20.96	20.96	20.96	20.96
Grossed up Rate of ROE	0	0	19.61	19.61	19.61	19.61


 (Petitioner)


Calculation of Weighted Average Rate of Interest on Actual Loans

Name of the Transmission Licensee: Power Grid Corporation of India Limited

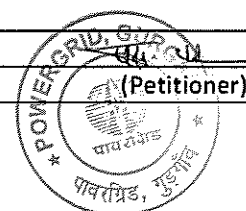
Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

Date of Commercial Operation: 30-Jun-2015

Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs
						2018-19
Bond XLVII-loan1-						
Gross Opening Loan	0	0	2	2	2	2
Cumulative Repayments of Loans upto Previous Year	0	0	0	0	0	0
Net Loans Opening	0	0	2	2	2	2
Add: Drawl(s) during the year	0	0	0	0	0	0
Less: Repayment(s) of Loan during the year	0	0	0	0	0	0
Net Closing Loan	0	0	2	2	2	2
Average Net Loan	0	0	2	2	2	2
Rate of Interest on Loan	0	0	8.93	8.93	8.93	8.93
Interest on Loan	0	0	0.18	0.18	0.18	0.18
PROPOSED LOAN 2015-16 (10.10%)-loan2-						
Gross Opening Loan	0	0	488.14	488.14	488.14	488.14
Cumulative Repayments of Loans upto Previous Year	0	0	0	0	0	0
Net Loans Opening	0	0	488.14	488.14	488.14	488.14
Add: Drawl(s) during the year	0	0	0	0	0	0
Less: Repayment(s) of Loan during the year	0	0	0	0	0	0
Net Closing Loan	0	0	488.14	488.14	488.14	488.14
Average Net Loan	0	0	488.14	488.14	488.14	488.14
Rate of Interest on Loan	0	0	10.1	10.1	10.1	10.1
Interest on Loan	0	0	49.3	49.3	49.3	49.3
Summary						
Gross Opening Loan	0	0	490.14	490.14	490.14	490.14
Cumulative Repayments of Loans upto Previous Year	0	0	0	0	0	0
Net Loans Opening	0	0	490.14	490.14	490.14	490.14
Add: Drawl(s) during the year	0	0	0	0	0	0
Less: Repayment(s) of Loan during the year	0	0	0	0	0	0
Net Closing Loan	0	0	490.14	490.14	490.14	490.14
Average Net Loan	0	0	490.14	490.14	490.14	490.14
Rate of Interest on Loan	0	0	10.1	10.1	10.1	10.1
Interest on Loan	0	0	49.48	49.48	49.48	49.48



Calculation of Interest on Normative Loan

Name of the Transmission Licensee: Power Grid Corporation of India Limited


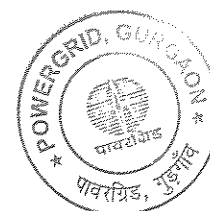
Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypure S/S

Date of Commercial Operation: 30-Jun-2015

Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs
						2018-19
Gross Normative Loan Opening	0	0	490.14	549.46	584.46	584.46
Cumulative Repayments of Normative Loans upto Previous Year	0	0	0	29.51	72.27	116.35
Net Normative Loans Opening	0	0	490.14	519.95	512.19	468.11
Increate/Decrease due to ACE during the year	0	0	59.32	35	0	0
Less: Repayment(s) of Normative Loan during the year	0	0	29.51	42.76	44.08	44.08
Net Closing Normative Loan	0	0	519.95	512.19	468.11	424.03
Average Net Normative Loan	0	0	505.05	516.07	490.15	446.07
Rate of Interest on Loan	0	0	10.1	10.1	10.1	10.1
Interest on Normative Loan	0	0	50.99	52.1	49.48	45.03
Pro rata Interest on Normative Loan	0	0	38.38	52.1	49.48	45.03


 (Petitioner)


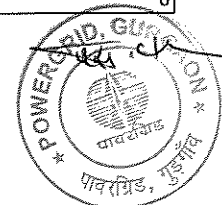
Calculation of Depreciation Rate

Name of the Transmission Licensee: Power Grid Corporation of India Limited
 Name of the Region: EASTERN REGION
 Name of the Project: ERSS 8
 Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S
 Date of Commercial Operation: 30-Jun-2015

Sl. No.	Particulars	Gross block at the beginning of the year	Add Cap during the year	Gross block at the end of the year	Average Gross Block	Dep. Rate	Rs. in Lacs Amount
2015-2016							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	700.2	84.74	784.94	742.57	5.28	39.21
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	700.2	84.74	784.94	742.57		39.21
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						1
2016-2017							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	784.94	50	834.94	809.94	5.28	42.76
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	784.94	50	834.94	809.94		42.76
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						2
2017-2018							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	834.94	0	834.94	834.94	5.28	44.08
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	834.94	0	834.94	834.94		44.08
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						3
2018-2019							
1	FREEHOLD LAND	0	0	0	0	0	0
2	BUILDING	0	0	0	0	3.34	0
3	TR LINE	0	0	0	0	5.28	0
4	SUB STATION	834.94	0	834.94	834.94	5.28	44.08
5	PLCC	0	0	0	0	6.33	0
6	LEASEHOLD LAND	0	0	0	0	3.34	0
	Total	834.94	0	834.94	834.94		44.08
	Weighted Average Rate of Depreciation						5.28
	Lapsed life						4

The Calculation of Total Life of Asset

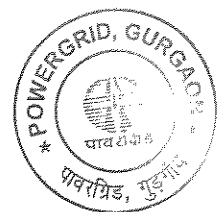
Sl. No.	Name of the Assets	Gross Block	Life As per CERC Norms	Weighted Life
	-1	-2	-3	(4)=Col.2 x Col.3
1	FREEHOLD LAND	0	0	0
2	BUILDING	0	25	0



Sl. No.	Particulars	Gross block at the beginning of the year	Add Cap during the year	Gross block at the end of the year	Average Gross Block	Dep. Rate	Rs. in Lacs Amount
3	TR LINE		0		35		0
4	SUB STATION		700.2		25		17505
5	PLCC		0		25		0
6	LEASEHOLD LAND		0		25		0
	Total		700.2				17505
	Total Life of Asset				17505/700.2		25

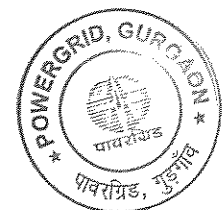
(Petitioner)





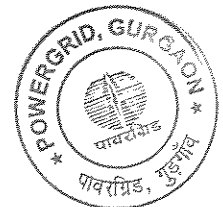
						Form 10A
Statement of Depreciation						
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S						
Date of Commercial Operation: 30-Jun-2015						
Particulars	Revised 2013-14	2014-15	2015-16	2016-17	2017-18	Rs. in Lacs 2018-19
Opening Capital Cost	0	0	700.2	784.94	834.94	834.94
AddCap Cost	0	0	84.74	50	0	0
Closing Capital Cost	0	0	784.94	834.94	834.94	834.94
Average Capital Cost	0	0	742.57	809.94	834.94	834.94
Freehold Land (Av. Cost)	0	0	0	0	0	0
Rate of Depreciation	0	0	5.28	5.28	5.28	5.28
Depreciable Value	0	0	668.31	728.95	751.45	751.45
Balance useful life of the asset (at the beginning of year)	0	0	25	24	23	22
Elapsed life of the asset (at the beginning of the year)	0	0	0	1	2	3
Remaining Depreciable Value	0	0	668.31	699.44	679.18	635.1
Depreciation during the year	0	0	29.51	42.76	44.08	44.08
Depreciation upto previous year	0	0	0	29.51	72.27	116.35
Cumulative depreciation (incl. of AAD)	0	0	29.51	72.27	116.35	160.43
(Petitioner)						

१११.०१



						Form 11
Calculation of Interest on Working Capital						
Name of the Transmission Licensee: Power Grid Corporation of India Limited						
Name of the Region: EASTERN REGION						
Name of the Project: ERSS 8						
Name of the Transmission Element: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S						
Date of Commercial Operation: 30-Jun-2015						
						Rs. in Lacs
Particulars	Revised 2013 14	2014-15	2015-16	2016-17	2017-18	2018-19
Op. and Maintenance	0	0	5.19	5.36	5.54	5.73
Maintenance Spares	0	0	9.35	9.66	9.98	10.31
Receivables	0	0	33.78	35.62	36.03	35.65
Total working capital	0	0	48.32	50.64	51.55	51.69
Rate of Interest	0	0	13.5	13.5	13.5	13.5
Interest on working capital	0	0	6.52	6.84	6.96	6.98
Pro rata Interest on working capital	0	0	4.91	6.84	6.96	6.98
						(Petitioner)

Handwritten signature/initials



PART-III
FORM- 12

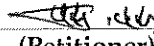
Details of time over run

Name of the Petitioner:		POWERGRID CORPORATION OF INDIA LTD.							
Name of the Region:		EASTERN REGION-II							
Name of the Project/element:		1 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S							
S.No	Description of Activity/Works/ Service	Original Schedule (As per Planning)		Actual Schedule (As per Actual)		Time Over-Run	Agency responsible and whether such time over run was beyond the control of the Transmission Licensee	Reasons for delay	Other Activity affected (Mention Sr No of activity affected)
		Start Date	Completion Date	Start Date	Completion Date				
1	Installation of Reactor and construction of reactor bay	27.08.2013	27.04.2015	16.09.2013	30.06.2015	2		The work has delayed due to bay extention work & change in drawing and layout	
2									


(Petitioner)



Incidental Expenditure during Construction

Name of the Petitioner:		POWERGRID				
Name of the Region:		ER				
Name of the Project:		ERSS-VIII				
Name of the Transmission Element or Communication system		1No. of 1x125 MVAR Bus Reactor and associated bays at 400 KV Jeypore S/S				
Date of Commercial Operation		30.06.2015				
(Amount in Rs. Lakh)						
Sl. No.	Parameters	Year -1	Year-2	Year 3	Year-4	Year-5
A	Expenses:					
	Employees' Remuneration & Benefits	0.00	4.07			
1						
2	Finance Costs	0.00	0.00			
3	Water Charges	0.00	0.00			
4	Communication Expenses	0.00	0.05			
5	Power Charges	0.00	0.51			
6	Other Office and Administrative Expenses	0.00	1.20			
7	Others (Please Specify Details) CC& RO Expenses	0.05	5.65			
8	Other pre-Operating Expenses	0.00				
					
B	Total Expenses	0.05	11.48	0	0	
	Less: Income from sale of tenders					
	Less: Income from guest house					
	Less: Income recovered from Contractors	0	0	0	0	
	Less: Interest on Deposits	0	0	0	0	
	0	0	0	0	
						 (Petitioner)



Draw Down Schedule for Calculation of IDC & Financing Charges

Name of the Transmission Licensee: Power Grid Corporation of India Limited

Name of the Region: EASTERN REGION

Name of the Project: ERSS 8

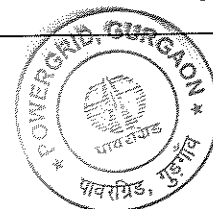
Name of the Transmission Element or Communication System: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S

Rs. In Lakhs

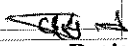
Drawn Down Schedule for Calculation of IDC & Financing Charges

Sl.No.	Drawn Down Particulars	Quarter 1		Quarter 2		Quarter n (COD)	
		Quantum in FC	Ex. Rate on Drawn Down Date Amount in Indian Rupee	Quantum in FC	Ex. Rate on Drawn Down Date Amount in Indian Rupee	Quantum in FC	Ex. Rate on Drawn Down Date Amount in Indian Rupee
	Loans						
	Foreign Loans						
	Total of Foreign Loans						
	Drawn Down Account						
	IDC						
	Financing Charges						
	Indian Loans						
	Bond XLVII						
	Draw Down Account						2
	IDC						
	Financing Charges						
	PROPOSED LOAN 2015-16 (10.10%)						
	Draw Down Account						488.14
	IDC						
	Financing Charges						
	Total of Indian Loans						490.14
	Drawn Down Account						
	IDC						
	Financing Charges						
	Total of Loan Drawn						490.14
	Drawn Down Account						10.72
	IDC						
	Financing Charges						
	Equity						
	Foreign Equity Drawn						210.06
	Indian Equity Drawn						210.06
	Total Equity Drawn						

(Petitioner)

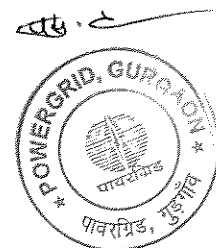


Breakup of Initial Spares

Name of the Petitioner:							POWERGRID		
Name of the Region:							ER		
Name of the Project:							ERSS-VIII		
Name of the Transmission Element or Communication system							1No. of 1x125 MVAR Bus Reactor and associated bays at 400 KV Jeypore S/S		
							(Amount in Rs. Lakh)		
Particulars	Plant & Machinery Cost (excluding IDC and IEDC) Upto DOCO	IDC	IEDC	Year wise additional Capital expenditure up to cut off date			Total Cost	Initial spares claimed	
				Year -1	Year-2	Year-3		Amount	%
Transmission Line									
Transmission Substation (Green Field/Brown Field)	677.94	11.53	10.72	84.74	50		834.93	NIL	
PLCC									
Series Compensation devices									
HVDC Station									
Gas Insulated Substation									
Communication System									
							 Petitioner		



INDEX		CHECK LIST PART-III
Name of the Company :	Power Grid Corporation of India Ltd.	
Name of the Project :	Transmission System associated with ERSS VIII in Eastern Region	
Name of the Transmission Element :	Asset I: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S	Asset II:
Checklist of Forms and other information/ documents for tariff filing for Transmission System		
Form No.	Tariff Filing Formats (Transmission)	Tick
FORM- 1	Summary Sheet	Yes
FORM-2	Details of TL,SS & Communication System	Yes
FORM-3	Normative parameters considered for tariff computation	Yes
FORM- 4	Abstract of admitted parameters for the existing transmission assets/elements under project	Not applicable and hence not enclosed
FORM-4A	Statement of capital cost	Yes
FORM-4B	Statement of capital works in progress	Not applicable and hence not enclosed
FORM-4C	Abstract of capital cost estimates and schedule of commissioning for the new project/Element	Yes
FORM-5	Element wise Breakup of Project/Asset/Element cost for Transmission System	Yes
FORM-5A	Breakup of construction/Supply/Service package	Yes
FORM-5B	Details of element wise cost of the project	Yes
FORM-6	Financial package up to COD	Yes
FORM- 7	Statement of additional capitalisation	Yes
FORM-7A	Financing of additional capitalization	Yes
FORM-7B	Statement of Additional capitalization during fag end of the project	Not applicable and hence not enclosed
FORM-8	Calculation of Return on Equity	Yes
FORM-8A	Details of foreign equity	Not applicable and hence not enclosed
FORM-8B	Details of additional RoE	NO
FORM-9	Details of allocation of corporate loans to various transmission elements	Not applicable and hence not enclosed
FORM-9A	Details of project specific loan	Not applicable and hence not enclosed
FORM-9B	Details of foreign loan	Not applicable and hence not enclosed
FORM-9C	Calculation of weighted average rate of interest on actual Loans	Yes
FORM-9D	Loans in Foreign currency	Not applicable and hence not enclosed
FORM-9E	Calculation of Interest on Normative Loan	Yes
FORM-10	Calculation of depreciation rate	Yes
FORM-10A	Statement of Depreciation	Yes
FORM-10B	Statement of Decapitalization	Not applicable and hence not enclosed
FORM-11	Calculation of interest on working capital	Yes
FORM-12	Details of time over run	Yes
FORM-12A	IEDC	Yes
FORM-12B	Draw down schedule for calculation of IDC & Financing Charges	Yes
FORM-13	Breakup of Initial Spares	Yes
FORM-14	Other Income as on COD	Yes
FORM-15	Actual Cash Expenditure	Not applicable and hence not enclosed



INDEX		CHECK LIST
Name of the Company :		Power Grid Corporation of India Ltd.
Name of the Project :		Transmission System associated with ERSS VIII in Eastern Region
Name of the Transmission Element :		Asset I: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Indravati S/S and Asset II: 01 No. of 1x125 MVAR Bus Reactor and associated bay at 400 KV Jeypore S/S
Other Information/ Documents		
Sl. No.	Information/Document	Tick
1	Certificate of incorporation, Certificate for Commencement of Business, Memorandum of Association, & Articles of Association (For New Station setup by a company making tariff application for the first time to CERC)	- Not Applicable -
2	Regionwise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures for the new Transmission System & for the relevant years.	Consolidated Balancesheet of 'POWERGRID & Regional Balance Sheet of ER for FY 2014-15 shall be submitted shortly
3	Copies of relevant loan Agreements	-Not Applicable -
4	Copies of the approval of Competent Authority for the Capital Cost and Financial package.	-Not Applicable -
5	Copies of the Equity participation agreements and necessary approval for the foreign equity.	Equity contribution by GOI (57.9%) and others(42.1%)
6	Copies of the BPTA/TSA with the beneficiaries, if any	-Not Applicable -
7	Detailed note giving reasons of time and cost over run, if applicable. List of supporting documents to be submitted: a. Detailed Project report b. CPM analysis c. PERT Chart and Bar Chart d. Justification for cost and time Overrun	Not Applicable
8	Transmission Licensee shall submit copy of Cost Audit Report along with cost accounting records, cost details, statements, schedules etc. for the transmission system as submitted to the Govt. of India for first two years i.e. 2014-15 and 2015-16 at the time of mid-term true-up in 2016-17 and for balance period of tariff period 2014-19 at the time of final true-up in 2019-20. In case of initial tariff filing the latest available Cost Audit Report should be furnished.	-Not Applicable -
9	Any other relevant information (Please specify)	-Not Applicable -

