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

No. उक्षेविस/ओपीआर/106/04/2018/2532-38 **दिनांक: 19.02.2018**

सेवा में,
सूची के अनुसार,

विषय :- देहर ICT की ownership के मुद्दे को निर्धारित करने के लिए की गयी मीटिंग का कार्यवृत्त |

महोदय,

संलग्नक, उपरोक्त विषय पर पत्र आपकी जानकारी एवं आवश्यक कार्यवाही हेतु प्रेषित है |

भवदीय

-हस्ताक्षरित-

(एम ए के पी सिंह)
सदस्य सचिव, उक्षेविस

प्रति :-

अध्यक्ष, के. वि. प्रा., नई दिल्ली

18-ए, शहीद जीत सिंह मार्ग, कटवारिया सराय, नई दिल्ली- 110016 फोन:011-26513265 फेक्स: 011-26865206 ई-मेल: ms-nrpc@nic.in वेबसाईट: www.nrpc.gov.in
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Northern Regional Power Committee

No. NRPC/OPR/106/04/2018/2532-38 **Dated:19.02.2018**

To,
As per List Attached

Subject: - Minutes of meeting held to discuss issue of ownership of 3 x 105 MVA ICT replaced by POWERGRID in place of 250 MVA ICT at BBMB, Dehar.

Sir,

As per the discussions held in **37th TCC and 40th NRPC meeting** regarding the issue of ownership of 3 x 105 MVA ICT which has been replaced by POWERGRID in place of 250 MVA ICT at BBMB, Dehar, a meeting was held on 09th February 2018 at 10:30 AM at NRPC Secretariat, New Delhi.

The minutes of the said meeting are uploaded on NRPC website (www.nrpc.gov.in).

BBMB and POWERGRID are requested to take measures as per the outcome of the meeting at the earliest so as to resolve the issue before 38th TCC and 41st NRPC meeting to be held on 27th and 28th February 2018.

Sincerely,

(M A K P Singh)
Member Secretary, NRPC

Copy to:

1. Chairperson, CEA, Sewa Bhawan, New Delhi-110066

18-ए, शहीद जीत सिंह मार्ग, कटवारिया सराय, नई दिल्ली- 110016 फोन:011-26513265 फैक्स: 011-26865206 ई-मेल: ms-nrpc@nic.in वेबसाईट: www.nrpc.gov.in
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List of Members

1. Chairman, BBMB, Chandigarh-160019 [Fax No. 0172-2549548]
2. Director (Operation), PGCIL, Gurgaon-122001 [Fax No. 0124 2571762]
3. Sh. V. K. Kalra, Member (Power), BBMB, Chandigarh-160019
   [Fax No. 0172-2549548]
4. Executive Director (NR-II), PGCIL, New Delhi-110016 [Fax No. 0191-2477413]
5. General Manager, CTU- POWERGRID, Gurgaon-122001 [Fax No. 0124 2571762]
6. Chief Engineer, Power System Planning & Project Appraisal-I, CEA, New Delhi-110066

Minutes of meeting held on 09.02.2018 at NRPC Secretariat, New Delhi to discuss the Issue of ownership of 3 x 105 MVA ICT replaced by POWERGRID in place of 250 MVA ICT at BBMB, Dehar.

As per the decision of the 37th TCC and 40th NRPC meeting, a meeting was held on 09.02.2018 at NRPC Secretariat, New Delhi to discuss the issue of ownership of 3 x 105 MVA ICT which has been replaced by POWERGRID in place of 250 MVA ICT at BBMB, Dehar.

List of the participants is attached at ***Annexure-I***.

Member Secretary, NRPC welcomed all the participants. He requested both BBMB and POWERGRID to lay down the facts in a chronological manner so as to determine the circumstances which have led to such a situation where the ownership of an ICT replaced by POWERGRID at BBMB, Dehar is being contested.

Representative of POWERGRID briefed about the facts in the chronological manner as given below:

a) **24/12/2009 (14th TCC and 15th NRPC):** POWERGRID proposed Bus Reactors at various locations including Dehar. (***Annexure-II***)
b) **29/12/2010 (29th SCM):** ICT overloading issue at Dehar was pointed by POWERGRID and replacement of ICT was proposed. BBMB was to revert in the next meeting after examining the feasibility of the proposed augmentation. (***Annexure-III***)
c) **2/6/2011 (19th TCC and 21st NRPC):** BBMB indicated that there was space constraints. Joint inspection by BBMB and POWERGRID was recommended by NRPC. (***Annexure-IV***)
d) **29/7/2011 (20th TCC and 22nd NRPC):** NRPC again directed for joint inspection. BBMB stated to do it in Aug.'11. (***Annexure-V***)
e) **18/11/2011 (21st TCC and 24th NRPC):** BBMB stated to carry out works under system strengthening. BBMB was to approach partner states for funding in case not agreed as system strengthening. (***Annexure-VI***)
f) **19/12/2011 (30th SCM)**: BBMB proposed that scheme should be taken up as ISTS strengthening. Scheme agreed as ISTS strengthening. (***Annexure-VII***)
g) **24/02/12 (22nd TCC and 25th NRPC):** Detailed BOQ was to be worked out jointly by POWERGRID & BBMB. (***Annexure-VIII***)
h) **30/11/12 (24th TCC and 27th NRPC):** POWERGRID informed investment approval has been obtained. Order yet to be placed (***Annexure-IX***)
i) **26/04/13 (25th TCC and 28th NRPC):** POWERGRID stated reactors expected by March 15. (***Annexure-X***)
j) **13/09/13 (26th TCC and 29th NRPC):** BBMB requested POWERGRID to reduce execution time. POWERGRID stated that earlier these works were to be carried out by BBMB and since they had expressed inability, these works have been taken up by POWERGRID. Status of tendering informed. (***Annexure-XI***)

k) **30/05/2017 (39th SCM):** SCM decided that ownership would be with POWERGRID. BBMB was not present in the meeting. (***Annexure-XII***)

l) **28/10/17 (37th TCC and 40th NRPC):** Representative of POWERGRID informed that after submission of all documents related to commissioning by POWERGRID to NRLDC for issuance of successful trial run certificate for 3 x 105 MVA ICT at BBMB, Dehar, the certificate was put on hold because BBMB had claimed the ownership of the said installed ICT. Chairperson, CEA suggested a separate meeting under Member Secretary, NRPC. (***Annexure-XIII***)

After laying down the facts representative of POWERGRID stated that, after having made investment for the ICT at Dehar, POWERGRID was being forced to bear losses by BBMB by blocking its trial run certificate. He further informed that during the period of 8 years since the conception of this project, the ownership issue was never raised by BBMB and the work was taken as ISTS only after being proposed by BBMB in the 30th SCM.

He stated that at present situation, investment done by POWERGRID for Dehar ICT could not be transferred to BBMB as such. ICT having been commissioned at Dehar BBMB, O&M will remain with BBMB and the charges for the same shall be paid by POWERGRID as being done by them with other utilities. However, he stated that the ownership shall remain with POWERGRID.

He further stated that if BBMB wants the ownership of the said ICT, it shall make POWERGRID full payment of the audited cost of the project plus 15% as consultancy charges. He also requested BBMB, until it is decided trial run certificate shall be allowed to be issued to POWERGRID so that the recovery for the same can be started via PoC tariff.

Representative of BBMB informed that the issue of funding for the project was never discussed by POWERGRID with them. It was informed that they were under the perception that the funding was being done through PSDF as the said project was approved for system strengthening. It was further stated that partner states of BBMB are very sensitive about its assets and does not allow any transfer of its assets to other utilities in the name of system strengthening.

Representative of BBMB stated that earlier also in a similar kind of incident in a meeting taken by JS (Transmission), it was decided that strengthening of the BTPS-Ballabhgarh and Samaypur-Ballabhgarh lines with HTLS conductor was to be done by DTL at its own cost. However, the lines would remain assets of BBMB. Citing the same decision, BBMB argued that ownership of ICT should remain with BBMB even though investment was done by POWERGRID.

In a reply to the above argument by BBMB, it was pointed that for the above work the issue involved was severe constraint due to limited capacity of the transmission line and DTL (beneficiary) was being affected by it. In the case of augmentation of ICT at Dehar,

POWERGRID was not the beneficiary and has made the investment after the scheme has been approved as ISTS after being proposed by BBMB.

Representative of BBMB further stated that the augmentation of the ICT was proposed by POWERGRID and not by them. There system was functioning properly and there was no need for the augmentation of ICT.

Representative of POWERGRID stated that if that would have been the case, BBMB should have contested the proposal for the augmentation of ICT at the various forums from which it has been approved.

Regarding PSDF funding, it was informed in the meeting that the scheme for operationalization of PSDF was notified on 10th January 2014 (***Annexure-XIV***) and the said work for ICT was approved in 30th SCM held on 19.12.2011. So, the question of getting it funded through PSDF should not have arisen at that moment.

MS, NRPC queried BBMB that during or before the start of work why the issue of funding was not clarified by BBMB with POWERGRID. BBMB again informed that the work being carried out for national interest and was thought to having been done through central funding.

Regarding the solutions as proposed by POWERGRID for either retaining O&M with BBMB for which the charges shall be paid by POWERGRID and ownership will remain of POWERGRID or to obtain the ownership by making complete payment of the cost of ICT plus 15% consultancy charges, BBMB informed that they would discuss the matter with their higher management and revert.

POWERGRID representative requested BBMB for the time being to issue provisional consent to NRLDC for issuing trial run certificate to POWERGRID so that until it is not decided by BBMB regarding the investment, POWERGRID may be allowed to charge PoC tariff for the same. BBMB representative stated that they will revert after consulting their management for the same.

He further requested to BBMB to expedite the same as POWERGRID being a public limited company is answerable to Ministry of Power & to its shareholders and because of BBMB it is being forced to incur losses.

BBMB representative informed that the matter would be taken with their management at the earliest and their decision shall be intimated in the 38th TCC and 41st NRPC meeting to be held on 27th and 28th February 2018. He requested POWERGRID to provide the relevant documents pertaining to the cost to be paid by BBMB for obtaining the ownership of the ICT.

Conclusion:

1) POWERGRID stated that as the investment for the replacement of ICT at BBMB Dehar, was made by POWERGRID, they claimed that ownership shall remain with POWERGRID with O&M being under the control of BBMB, for which the charges shall be paid by POWERGRID. However, if BBMB wants to have the ownership of the said ICT it should make complete payment for the cost of ICT along with 15% of the project cost as consultancy charges for the same.
2) Until it is decided by BBMB whether to make complete payment and own the ICT or to let the ownership remain with POWERGRID with O&M being under their control, BBMB was requested to look for an option of issuing their provisional consent to NRLDC so that the trial run certificate for the said ICT could be obtained and POWERGRID may be allowed to start recovering their investment through PoC tariff. BBMB representative stated that they will revert after consulting their management for the same.
3) BBMB assured in the meeting, that the matter will be taken at the earliest with their higher management and the decision of the same would be informed before the next TCC/NRPC meeting to be held on 27th and 28th February 2018.

Meeting ended with a vote of Thanks to the Chair.

Annexure-I

List of Participants of meeting held on 09.02.2018 at NRPC, New Delhi to Discuss the issue of ownership of Dehar ICT:

Sr.No.	Name	Designation	Organization	Phone/ Mobile	e-mail ID
1	Sh. M.A.K.P.Singh	Member Secretary	NRPC	9968667741	ms-nrpc@nic.in
2	Sh. Upendra Kumar	SE(O)	NRPC	9910180485	upendra0809@gmail.com
3	Sh.Hemant Kumar Pandey	SE(C)	NRPC	9868966170	sec-nrpc@nic.in
4	Sh. R V S Kushwaha	GM	POWERGRID, Jammu	9431031606	rvskushwaha@powergridindia.com
5	Sh. Mukesh Khanna	GM (ctu-plg.)	POWERGRID	9910378098	mkhanna@powergirdindia.com
6	Smt. Rashmi Pant Joshi	Manager (ctu-plg.)	POWERGRID	9999883617	rashmi4pg@gmail.com
7	Sh. R.S. Jaha	Sp. Secy	BBMB	9417216043	spsecy@bbmb.nic.in
8	Smt. Abha Saini	Chief Engineear	BBMB	9417216058	ceso@bbmb.nic.in
9	Sh. Anil Gautam	Dir. Power	BBMB	9417216047	dirpr@bbmb.nic.in
10	Sh. Kuldeep Singh	Power Controller	BBMB	9417200352	powerc@bbmb.nic.in
11	Sh. Akshay Dubey	AEE	NRPC	9599179744	dubey.akshay@gov.in
12	Sh. Kaushik Panditrao	AE	NRPC	8851872053	kaushik.panditrao@goc.in

would provide additional corridor and bring power directly at the load centres of Northern Region. Due to the control features of HVDC, this transmission link would also help in controlling system parameters by varying power flows.

Representative of PSEB enquired about the increase in transfer capability with the commissioning of this HVDC link. NRLDC informed that this link would be equivalent to putting a generating station at the load centre which would be directly connected to major load centres of Northern region. In this way there would be increase in transfer capability which was required to meet the growing power demand of Northern Region.

Representative of POWERGRID informed that at present beyond Balia there was only one major transmission corridor i.e. Balia – Lucknow 400 kV D/C line and under outage of one circuit of this line or under outage of one pole of Rihand – Dadri HVDC system, there would be power transfer constraints. Accordingly, these transmission elements would enable transfer of additional power from Eastern region in secure and reliable manner.

Representative of HVPNL stated that this scheme was agreed for Barh-I generation and this should be taken up as generation associated scheme. In this regard POWERGRID informed that this transmission scheme was evolved and agreed for Barh-I as well as for other Eastern Region generation projects.

After deliberations it was agreed that the scheme would provide additional corridor for power transfer from ER to NR and accordingly it was decided that POWERGRID should go ahead with the commissioning of these links.

NRPC Deliberation

Members concurred with the proposal of POWERGRID.

C.22 Provision of Bus Reactors in Northern Region to Control Over Voltages

TCC Deliberation

MS, NRPC informed that POWERGRID had proposed bus reactors at various locations in Northern Grid to control high voltages in the system particularly during low hydro and light load conditions. He further informed that to control the high voltage in the system 400 kV transmission lines had to be opened during off peak hours due to which reliability and security of grid reduces and it put additional stresses on the equipment.

Representative of POWERGRID informed that the problem of high voltage had been very acute in Eastern part of NR, in Haryana, Punjab and J&K area during low hydro and light load conditions and also in Rajasthan area. As per the studies, bus reactors would be required at 15 locations including bus reactors at 6 generating stations. He further stated that the bus reactors of generating station should be implemented by generating company whereas in the sub station the bus reactor would be taken up for implementation as a regional transmission strengthening scheme.

Representative of NHPC, SJVNL and HVPNL stated that even the reactors at generating stations should be implemented by POWERGRID. Representative of NHPC further mentioned that POWERGRID should provide Bus Reactors at generating stations while the generating stations could carry out O&M of Bus Reactor, as being done in Dulhasti HPS. Representative of POWERGRID expressed that in view of O&M problem, extension of GIS station of generating company and issue of space availability, the implementation of bus reactor at generating station should be taken up by the concerned generating company.

TCC members agreed on the proposal of bus reactor proposed by POWERGRID as enclosed at **Annex-III .** In case of non-availability of space for reactors at generating stations, POWERGRID and generating company might examine the alternative to control the over voltages. Accordingly, the proposal might be placed before the Standing Committee on Transmission Planning of CEA.

Further, POWERGRID informed that for future hydro generation projects including the generation projects under execution, the generating company should provide adequate bus reactors. However, for firming up the reactor capacity, they could approach POWERGRID. This was also agreed by TCC.

NRPC Deliberation

Members concurred with the proposal.

C.23 Flash over in 400 kV GIS at Jhakri HE Project due to frequent opening of line breaker at persistent high voltage beyond permissible limit.

TCC Deliberation

Representative of SJVNL informed that circuit breakers at NJHPS (one of Abdulapur- Ckt 1 and other of Baspa Ckt 2) was damaged with the flash over in 400 kV GIS by frequent opening of line breakers at persistent high voltage beyond permissible limit.

Annex-III

Item C.22 - Provision of Bus Reactors in Northern Region to Control Over Voltages

S. No.	Name of Substation	Proposed Bus Reactor (MVAR)
1	Gorakhpur	1X125
2	Allahabad	1X125
3	Mainpuri	1x125
4	Hissar	1x125
5	Jullandhar	1x125
6	Amritsar	1x80
7.	Kankroli	1x125
8.	Nalagarh	1x125
9.	Vindhyachal (NR bus)	2x125
10.	N' Jhakri	1x125
11	Dehar	1x125 (subject to availability of space)
12	Chamera-I	1x125 (subject to availability of space)
13	Parbati-II	1x125 (subject to availability of space)
14	Parbati-III	1x80 (subject to availability of space)
15	Rihand	1x125 (subject to availability of space)

Minutes of 29th Standing Committee Meeting on power system planning of Northern Region held on 29th December 2010 at POWERGRID, New Delhi

List of participants is enclosed at Annexure.

Chief Engineer (SP&PA), CEA welcomed participants of the 29th Standing Committee meeting of the Northern Region of power system planning and thanked them for attending the meeting, despite inclement weather and problems in traveling due to road/air traffic disruptions.

The agenda item were thereafter taken up for discussion.

1. Confirmation of minutes of 28th Standing Committee Meeting held on 23.02.2010

Director (SP&PA), CEA stated that comments were received from PSEB and HVPN regarding the work of LILO of 400 kV Dehar-Bhiwani line at Rajpura and LILO of 400 kV Dehar-Panipat line at Panchkula. No other comment was received from members. He mentioned that this issue would be taken up for consideration later.

POWERGRID stated that they were facing problems in acquisition of a suitable land for establishment of 400/220 kV substation at Dehradun and stated that incase suitable land could not be arranged, POWERGRID might have to establish a GIS station at Dehradun. Members agreed for the same.

Director (RRVPN) stated that new 400 kV substations might be planned as GIS stations as it was becoming very difficult to get the land near the cities and land cost was very high. It was also suggested that techno-economic analysis of GIS v/s AIS should be carried out and based on the same the new substations might be planned as GIS stations.

As no other comment was received from members, **the Minutes of 27th meeting were confirmed.**

2. Augmentation of 400/220 kV transformation capacity at Dehar Generating Switchyard

POWERGRID intimated that overloading of existing 250 MVA, ICT at Dehar was experienced several times, particularly in low hydro period resulting in separation of 400 & 220 systems at Dehar. They proposed that a new 500 MVA ICT might be provided at Dehar by BBMB. In case of space constraint, it was suggested to replace existing 250 MVA, ICT by 500 MVA, ICT. BBMB representative confirmed that the feasibility of the proposed augmentation would be examined and they would revert to committee in the next meeting.

Members agreed for the same.

		for completion thereafter.	implemented in 1 year thereafter. While implementing, priority shall be accorded to locations from where data is getting delayed at present.	meet the time line.
3	**In 14th meeting held on 9th September 2009 at Surajkund**			
3.1	Procurement of 315 MVA, 400/220 kV ICTs as spare, one for Delhi NCR and one for other Northern States of the Region	(i)The scheme was approved and ICT was to be procured before Common Wealth Games. (ii) In **20th NRPC meeting,** POWERGRID had informed that ICTs are under procurement and orders have been placed with M/s Siemens and transformers will be delivered by Sept 2011 at Mandola and by Dec. 2011 at Ludhiana	Representative of POWERGRID informed that 1 transformer would be delivered in September 2011 and another in October 2011.	NRPC expressed concern over delay of one year. POWERGRID was requested to adhere to the time line now indicated. POWERGRID was advised to submit schedule of procurement of ICT for Amritsar & Abdullapur as decided in the 18th meeting of NRPC.
4	**15th NRPC meeting held on 24th Dec 2009 at Chandigarh**			
4.1	Provision of Bus Reactors in Northern Region to Control Over Voltages	(i)The proposal of reactors at 15 grid sub-stations including 6 reactors at generating stations was approved. (ii**) In 20th NRPC meeting,** POWERGRID had informed that Bus reactors would be in place progressively by October,2011. POWERGRID was advised to prioritize the locations based on voltage profile	It was informed that POWERGRID has placed orders for 7 reactors for s/s and would be available from March-June 2012. Balance two for Gorakhpur & Amritsar would be awarded after investment approval in June/ July 2011. Representative of SJVNL stated that they would place orders for reactor in 5-6 months. Representative of NHPC stated that they would place orders for reactors in 2-3 months. Representative of BBMB indicated space	Representative of NTPC stated that for reactor at Rihand, action was being taken by their Corporate Office. Members noted the deliberations of TCC. NRPC concurred with the recommendation of TCC that In future all new S/s and Generating stations should have provision for bus reactors

			constraint at Dehar.TCC recommended that BBMB & POWEGRID would carry out joint inspection for availability of space for reactor at Dehar. Representative of NTPC stated that the Reactor at Rihand might not be required. It was suggested that NTPC may seek clarification from CEA/CTU on this issue. Representative of POWERGRID stated that though all locations are important, Generating Stations are more critical locations. After detailed deliberations TCC recommended that In future all new S/s and Generating stations should have provision for bus reactors.	
5	**16th NRPC meeting held on 23rd March 2010 at Nanital**			
5.1	**Replacement of Porcelain insulators by polymer/ antifog insulators**	Monitoring of replacement **of** Porcelain insulators by polymer/ antifog insulators to be carried out regularly by NRPC secretariat. In 61st OCC meeting held on 25th April 2011 at Jaipur, it was decided that all transmission utilities will submit the information regarding replacement of porcelain insulators with anti-fog/polymer insulators in the prescribed format (available on the website of NRPC) on 15th day of every month. However the information is not being received regularly from the utilities.	TCC members agreed that replacement of Porcelain insulators by polymer/ anti-fog insulators would be expedited so as to be completed before onset of winter. In UP, 80.8% replacement of stage I completed. For stage II, 9418 polymer insulators strings ordered and received & out of these, 3432	Representative of POWERGRID stated that the work is to be done in five packages. One package has been completed, two packages awarded & two packages would be awarded shortly. He stated that all critical locations shall be taken up first. RRVPNL has

	of 315 MVA, 400/220 kV ICTs as spare, one for Delhi NCR and one for other Northern States of the Region	ICTs as spare, one for Delhi NCR and one for other Northern States of the Region to be procured before Common Wealth Games. In **21st NRPC meeting,** POWERGRID had informed that 1 transformer would be delivered in September 2011 and another in October 2011. POWERGRID was requested to adhere to the time line now indicated. POWERGRID was also advised to submit schedule of procurement of ICT for Amritsar & Abdullapur as decided in the 18th meeting of NRPC.	MVA, 400/220 kV ICTs as spare, one for Delhi NCR and one for other Northern States of the Region is expected in Sept. 2011 and Oct. 2011 respectively. For ICT at Amritsar & Abdullapur, NIT to be issued in August, 2011	the deliberation of TCC. Chairman, NRPC expressed concern that the ICTs, which were to be procured before CWG have not been procured so far.
4	**15th NRPC meeting held on 24th Dec 2009 at Chandigarh**			
4.1	Provision of Bus Reactors in Northern Region to Control Over Voltages	(i)The proposal of reactors at 15 grid sub-stations including 6 reactors at generating stations was approved. **In 20th NRPC meeting,** POWERGRID was advised to prioritize the locations based on voltage profile. **In 21st NRPC meeting,** **i)** It was decided that in future all new S/s and Generating stations should have provision for bus reactors. **ii)** POWERGRID had informed that orders for 7 reactors for s/s have been placed and would be available from March-June 2012. Balance two reactors for Gorakhpur & Amritsar would be awarded after investment approval in June/ July 2011. **iii)** SJVNL had informed that they would place orders for reactor in 5-6 months. **iv)** NHPC had informed that they would place orders for reactors in 2-3 months. v) BBMB had indicated space constraint at Dehar for which BBMB & POWEGRID were advised to carry out joint inspection for availability of space for reactor at Dehar. **vi)** NTPC had indicated for reactor at Rihand, action was being taken by their Corporate Office.	Representative of POWERGRID intimated that 07 reactors would be available progressively from March-June 2012 and order for 02 reactors for Gorakhpur & Amritsar, would be placed by next week. Representative of SJVNL stated that NIT has been issued, Bids to be opened 10.08.2011. Representative of NHPC stated that NIT is under process and would be issued in next one month. Representative of BBMB stated that the inspection would be carried out in first week of Aug. 2011. Representative of NTPC stated that NIT is under	Members noted the deliberation of TCC.

NRPC Deliberations.

B.1.3.3 Member Secretary, NRPC briefed the members about the deliberations in TCC. Members of NRPC desired that POWERGRID should ensure that there were no further delay and NIT was issued by November, 2011 as committed by them in TCC. Representative of POWERGRID assured that there would be no further delay.

B.1.4 <u>Augmentation of transformation capacity by 4x105 MVA at POWERGRID Kishenpur Substation.</u>

TCC Deliberations

B.1.4.1 Member Secretary, NRPC gave a brief background and stated that the proposal for augmentation of transformation capacity by 4x105 MVA at POWERGRID's Kishenpur sub-station was approved in the 21st meeting of NRPC held on 2nd June 2011. Subsequently, in the 22nd NRPC meeting held on 29th July 2011, POWERGRID had intimated that NIT would be issued in Aug. 2011. He requested POWERGRID to inform the latest status.

B.1.4.2 Representative of POWERGRID intimated that the preliminary Engineering work for augmentation of transformation capacity had been completed and the Feasibility Report for their Board approval was under preparation.

B.1.4.3 Representative of J&K desired that POWERGRID should expedite the process of augmentation of transformation capacity at the Kishenpur sub-station. He suggested that while implementing the expansion of network in hilly areas, POWERGRID should explore the possibilities of alternate routes instead of planning parallel lines in the same corridor and cited example of 400 kV Kishenpur- Wampo where 2x D/C lines were in the same corridor. He added that any delay in commissioning of 400 kV S/s at Wampo would pose problems for PDD, J&K in meeting their growing load requirements. Representative of POWERGRID intimated that 400 kV S/s at Wampo and 400 kV S/s at Sambha were slated for commissioning in July, 2013 and September, 2013 respectively and added that the delay in execution of these substations was on account of issues in acquisition of land in J&K. Chairman, TCC advised POWERGRID to consider the views of local authorities in the planning and implementation process and also expedite commissioning of 400 kV Wampo and 400 kV Sambha substations.

NRPC Deliberations.

B.1.4.4 Members of NRPC noted the deliberations in the TCC and decided that senior officers from POWERGRID would visit PDD, J&K to discuss and sort out

acquisition of land and implementation issues between PDD, J&K and POWERGRID.

B.1.5 Provision of Bus Reactors in Northern Region to Control Over Voltages.

TCC Deliberations.

B.1.5.1 Member Secretary, NRPC gave a brief background and stated that the proposal of bus reactors at 15 grid sub-stations (Gorakhpur, Allahabad, Mainpuri, Hisar, Jullandhar, Amritsar, Kankroli, Nalagarh, Vindhyachal (NR bus), Nathpa Jhakri, Dehar, Chamera-I, Parbati-II, Parbati-III and Rihand) was approved in the 15th NRPC meeting held on 24th Dec 2009. In the 20th NRPC meeting held on 1st March 2011, POWERGRID was advised to prioritize the locations based on the voltage profile. He requested POWERGRID and other implementing agencies to inform latest status of implementation

B.1.5.2 Representative of POWERGRID informed that the reactors, in consultation with NRLDC, would be progressively installed by December, 2012. In response to a query, he clarified that reactor at Kankroli would be installed by September, 2012 and tendering for reactor at Vindhyachal (NR bus) would be done in March, 2012.

B.1.5.3 Representative of SJVNL informed that bids had been opened and were under evaluation and the order for the reactor was likely to be placed in December, 2011 and commissioning schedule was December 2013. In regard to space constraint, he intimated that NIT would be issued for provision of bay and bus in GIS in December, 2011.

B.1.5.4 Representative of NHPC informed that NIT for reactor at Chamera would be issued in December, 2011. He added that installation of reactor at Parbati-II & Parbati-III was not possible due to space constraint and desired that these be deleted.

B.1.5.5 Representative of BBMB informed that as an outcome of joint inspection by BBMB and POWERGRID, it had been established that 125 MVAR reactor at Dehar was not possible due to space constraint and transportation limitations. He added that 2X50 MVAR reactors controlled by one breaker should be installed by POWERGRID as NR System Strengthening scheme. Responding to the statement by representative of BBMB, representative of POWERGRID stated that 2x50 MVAR reactors had not yet been covered in any of the approved NR System Strengthening schemes.

B.1.5.6 Representative of NRLDC stated that the size, locations as well as the decision to install reactors was taken in December, 2009 but the tendering was being undertaken two years later. He added, had these been implemented by now,

manual tripping of lines due to high voltage could be avoided during the ensuing winter period. Representative of POWERGRID clarified that the delay in procurement was due to the fact that 125 MVAR reactor was not a standard design.

B.1.5.7 To a suggestion from Chairman, TCC that available machines be operated in synchronous condenser mode to absorb reactive power, representative of NRLDC intimated that Pong and Tehri machines had demonstrated their capability to operate in synchronous condenser mode. However, this feature in other machines was yet to be explored. Representative of SJVNL intimated that this feature would be provided in new machines and the existing machines would be operated as per design provisions for which details had been furnished to NRLDC.

B.1.5.8 After deliberations TCC decided that NRLDC would write to all generators who would respond in 15 days on the possibility of operating their machines in synchronous condenser mode.

NRPC Deliberations.

B.1.5.9 Chairman, NRPC advised POWERGRID that while installing the reactors, locations be prioritized as per the voltage profile and it should be ensured that all reactors are commissioned by December, 2012.

B.1.5.10 In respect of commissioning schedule of December, 2013 indicated by the representative of SJVNL, Chairman, NRPC advised for advancing the same to June, 2013.

B.1.5.11 In respect of space constraint at Parbati-II & Parbati-III intimated by the representative of NHPC, NRPC decided that a committee comprising of representatives from CEA, POWERGRID and NHPC would inspect the sites of Parbati-II & Parbati-III and give its report to NRPC regarding availability of space for reactor.

B.1.5.12 In respect of tendering for procurement of reactors in March, 2012 by NTPC, Chairman, NRPC observed that there was delay of more than 2 years and advised NTPC to expedite the procurement process.

B.1.5.13 In respect of space constraint at Dehar for 125 MVAR reactor and provision of 2X50 MVAR reactors controlled by one breaker to be installed under NRSS scheme, representative of BBMB intimated that this had been recommended by the committee He added that in case the same was not approved as System Strengthening scheme, BBMB would have to approach its partners for funding. NRPC desired that BBMB should bring the proposal of 2x50 MVAR reactors to be covered under System Strengthening scheme before Standing

Committee on Transmission Planning of Northern Region first and if, not agreed there, BBMB should approach its partners for funding.

B.1.6 Implementation of Fiber Optic Communication System in lieu of ULDC Microwave links.

TCC Deliberations.

B.1.6.1 Member Secretary, NRPC gave a brief background and stated that the proposal for implementing the Fiber Optic network for all the constituents except UPPTCL was agreed in the 12th meeting of NRPC held on 22nd April 2009. Subsequently, UPPTCL also agreed to get their optical fiber communication system implemented through POWERGRID. In the 22nd NRPC meeting held on 29th July 2011, POWERGRID had informed that priority links would be established before DoT deadline of Dec. 2011. POWERGRID was advised that in case of any delay, the matter regarding extension of the deadline should be taken up with DoT.

B.1.6.2 Representative of POWERGRID intimated that 1500 Km. of fiber optic network had already been laid and 400 Km. would be completed by December, 2011. He added that this 1900 Km. would cover all priority links. For the remaining 400 Km., he informed that POWERGRID was in discussions with DoT for extending the deadline beyond December, 2011. Representative of UPPTCL stated that the figures indicated by POWERGRID needs reconciliation, since only 214 Km. had been completed out of 1254 Km. priority links in U.P. Further, he stressed the need for commissioning of the fiber optic network along with associated equipment since laying fiber optic cable alone would not serve the purpose.

B.1.6.3 **TCC decided that POWERGRID would reconcile the figures of progress of fiber optic network in U.P with UPPTCL and would furnish to NRPC Secretariat a complete list of lines where fiber optic network had already been laid.**

B.1.6.4 Representative of SJVNL raised the issue of dedicated link between Nathpa Jhakri & Rampur HPSs for their tandem operation and desired to know the progress as POWERGRID had assured in the 66th OCC meeting that the connectivity would be available by December, 2012. He also desired to know the status of Fiber Optic link between NJHPS and Abdullapur. Representative of POWERGRID clarified that the dedicated link between Nathpa Jhakri and Rampur HPSs was a bilateral issue between POWERGRID and SJVNL and would be sorted out separately.

B.1.6.5 Representative of J&K informed that PDD, J&K had also decided that the Fiber Optic network in J&K was to be established by POWERGRID. Representative

Considering the urgency of work and the scope being very small, it was agreed that the above works might be carried out by POWERGRID as a part of some on-going scheme.

It was further informed that HPPTCL requested for four 220 kV line bays at Hamirpur 400/220 kV substation i.e. two for connecting their Kangoo S/s and two for connecting their proposed substation at Palampur. POWERGRID representative intimated that 6 nos. of line bays were already being provided at 400/220 kV Hamirpur(PG) substation. Out of these, 4 bays shall be utilized for LILO of 220 kV Jullandhar – Hamirpur D/c line and two bays could be provided for interconnection of proposed Kangoo S/s (HPSEB). The additional two nos. of 220 bays could be considered in future when required. POWERGRID requested HPPTCL to expedite the 220kV D/c interconnection from Hamirpur 400/220 kV substation.

Members agreed to the above proposal.

7. Installation of Bus Reactors and augmentation of transformation capacity at Dehar Generation Switchyard

Director (SP&PA), CEA stated that in order to control high voltages in the system (particularly during low hydro and light load conditions) at Dehar, a 125 MVAR bus reactor at Dehar generation switchyard was agreed during 15th meeting of Northern Regional Power Committee held on 23rd and 24th December, 2009.

POWERGID representative informed that during low hydro period, the 400/220kV, 250 MVA ICT at Dehar got overloaded. At several instances, this ICT was opened to avoid over loading, resulting in loss of interconnection between 400kV and 220kV levels at Dehar resulting in less reliable power supply to Punjab and this had also been highlighted in the Operation Feedback on Transmission Constraints submitted by NRLDC. It was also informed that the present ICT is more than 30 years old. The issue was discussed during the 29th Standing Committee Meeting held on 29/12/2010 and it was proposed to augment the existing transformation capacity by one additional 500 MVA transformer. In case of space constraint, it was proposed that existing 250 MVA transformer might be kept as spare and proposed 500MVA transformer be installed. BBMB had indicated space & transportation constraints for installation of 500 MVA ICT at Dehar. In 21st NRPC meeting, it was recommended that BBMB & POWERGRID would carry out joint inspection for availability of space at Dehar. Accordingly, Joint site visit of POWERGRID and BBMB was carried out and the main findings of the visit are listed below:

(a) **Installation of Bus Reactor at Dehar:** There is space constraint for installation of a bus reactor with conventional AIS bay equipments. Hence, GIS equipment needs to be considered for Bus Reactor. BBMB informed that transportation & installation of 125 MVAR reactor at Dehar is not feasible and option of 80 MVAR reactor may be explored. RVPNL stated that in view of the requirement of 125 MVAR reactor and transportation/space constraints, 2X63 MVAR Reactors might be considered.

After detailed discussions, it was agreed to provide 2 nos. of 63 MVAR bus reactors controlled through a single 400 kV bay.

(b) **Replacement of 250 MVA ICT with 500 MVA ICT:** There is space constraint for installation of 500 MVA ICT and also the existing 220kV ICT bay would require to be upgraded. The 220kV bay equipment needs to be replaced with GIS equipment which will create sufficient space for installation of higher rating transformer. It was informed that it is not feasible to transport the 500 MVA ICT (single phase units) as load bearing capacity of bridges en-route is only 80 Tonnes and therefore it was proposed to provide 315 MVA (3x105 single phase units) ICT alongwith the necessary bay equipment. **Accordingly, it was agreed to replace the existing 1x250 MVA ICT by 3x105 MVA single phase ICTs at Dehar. Further, it was also agreed to provide one no. spare single phase ICT unit for reliability.**

BBMB representative stated that the above proposed provision of reactors and ICTs were system strengthening requirement and therefore these works should be carried out as ISTS scheme.

POWERGRID representative informed that prima-facie current rating of existing 400kV switchyard equipment and majority of 220kV equipment were suitable for 315MVA ICT and might be retained after joint review by POWERGRID/ BBMB. Control & Relay panels & Protection, Fire fighting aspect would also be jointly reviewed. Dismantling of existing equipments, modification of foundation and installation of new ICTs in place of existing ones would also be required. Regarding provision of reactor POWERGRID informed that the layout of bay and approach road for above reactor/reactors would be finalised by BBMB & POWERGRID. It was also stated that extension of switchyard by GIS switchgear might be required. It was agreed that the detailed BOQ would be worked out by POWERGRID in consultation with BBMB.

After detailed deliberations, members agreed that the above works might be taken up as an ISTS scheme.

8. Provision of 125 MVAR Bus Reactor at Koteshwar

Director (SP&PA),CEA stated that the transmission system in Tehri area was frequently experiencing over voltages under light load conditions and therefore it was necessary to provide a bus reactor either at 400kV Tehri Pooling Station or at 400kV Koteshwar HEP Switchyard of THDC subject to space availability. POWERGRID representative intimated that space was not available at Tehri Pooling station, however as per their information space is available at 400kV Koteshwar HEP Switchyard (THDC). PDD J&K representative enquired about the system studies carried out for arriving at the size of the proposed reactor. POWERGRID representative informed that the system studies had been carried out and the results indicated the reduction in voltage by 11kV/ 9 kV/ 7 kV considering 125/ 2x50 / 80 MVAR bus reactors respectively considered at Koteshwar HEP. In view of above, it was proposed to provide 125 MVAR bus reactor at 400kV Koteshwar HEP Switchyard.

RVPNL representative suggested that in case of space constraint/ transportation limitation, 2X63MVAR reactors might be provided instead of 125 MVAR.

i) **Interconnection of Sewa-III HEP (3x3 MW) with evacuation system of Sewa-II HEP (120 MW) for improving system reliability**

ii) **Shifting of Line reactor from Merta S/s to Kota S/s as Bus Reactor – To be implemented as ISTS**

iii) **Connectivity of Hamirpur (Mattansidh) 220/132kV S/s of HPSEB with Hamipur 400/220kV S/s of POWERGRID**

- LILO of 220kV D/c Julandhar –Hamirpur D/c at Hamirpur (PG) S/s - To be implemented as ISTS

iv) **Installation of Bus Reactors and augmentation of transformation capacity at Dehar Generation Switchyard - To be implemented as ISTS**

- 2 nos. of 63 MVAR bus reactors controlled through a single 400 kV bay.
- Replacement of existing 1x250 MVA ICT by 4x105 MVA single phase ICTs at Dehar.
- Extension of 400 & 220 kV bays by GIS equipment as per the requirement. Detailed BOQ to be worked out by POWERGRID in association with BBMB.

v) **Provision of 125 MVAR Bus Reactor at Koteshwar - To be implemented as ISTS**

vi) **Two Nos. of 220kV bays at Pithoragarh S/s – Agreed to provide the space. The cost of implementing these 220 kV line bays at Pithoragarh S/s to be borne by PTCUL.**

vii) **Evacuation of Power from Parbati-III & Koldam HEPs**

- It was approved that PKTCL would make all efforts to complete one circuit of the section of Parbati-II - Koldam 400 kV Quad line (from LILO point of Parbati-III to Koldam) by July 2012 and complete the other section of Parbati-II - Koldam 400 kV Quad line (from LILO point of Parbati-III to Koldam) in next 4-5 months.
- It was also approved that PKTCL would make all efforts to complete 400 KV D/C Koldam – Ludhiana Transmission Line by March 2013.

viii) **Construction of 765/400kV Bulandshahar, Varanasi & Kanpur substations as Gas Insulated Substations and Kurukshetra HVDC terminal station alongwith its AC switchyard as GIS station.**

Scheduled Date	Name of stations	Status of exercise
16th Jan 2012	Chamera-2 HEP	NHPC informed that black start facility is yet to be made available by OEM.

Approved schedule for black start exercise at other stations is as under:

Approved Schedule	Station	Approved Schedule	Station
16th Nov 2012	Koteshwar HEP	09th Jan 2013	Tehri HEP
21st Nov 2012	Jhakri HEP	16th Jan 2013	Chamera-2 HEP
27th Nov 2012	AD Hydro HEP	22nd Jan 2013	Chamera-1 HEP
11th Dec 2012	Karcham Wangtoo HEP	27th Feb 2013	Auraiya GPS
19th Dec 2012	Malana-2 HEP	5th Mar 2013	Faridabad GPS
26th Dec 2012	Salal HEP	19th Mar 2013	Dadri GPS
04th Jan 2013	Pong HEP	02nd Apr 2013	Anta GPS

B.27.2 Representative of NRLDC added that Delhi SLDC had informed about the mock black start exercise for Delhi GTs. He requested SLDC-Delhi to further update on the outcome. All other SLDCs were also requested to inform the status/details of mock black-start of stations which have been planned/ carried out in their respective control area.

B.27.3 Members noted the above position and keeping in view the importance of black start of generating units in any eventuality, decided that NRLDC will convene a meeting of hydro generators during first week of December 2012 and finalize dates for mock black start exercise.

NRPC Deliberations.

B.27.4 Members of NRPC took note of the deliberations in TCC.

B.28 Reactive power management and high voltage control during night off-peak hours

TCC Deliberations.

B.28.1 Giving a brief background representative of NRLDC stated that, High voltage is experienced in Punjab, Haryana, J&K and NCR system particularly during night off-peak hours. Moreover Eastern U.P. and Rajasthan system were experiencing chronic high voltage. During real-time operation all efforts are

made to maintain the system voltage within nominal range as prescribed in the IEGC by suitable tap setting of ICTs, switching off shunt capacitors and switching-in of shunt reactors. As a last resort, EHV lines have to be manually opened. However opening of EHV lines reduced network security and needs to be avoided to the extent possible. Provision of additional bus reactors (total 15) at several stations in NR was approved in the 15th NRPC meeting held on 24-December 2009. The list of these reactors is as under. Out of the bus reactors approved at 15 locations, bus reactors at 400 kV Hisar (125 MVAR), 400 kV Jullandhar (125 MVAR), 400 kV Amritsar (80 MVAR), 400 kV Kankroli (125 MVAR) and 400 kV Nalagarh (125 MVAR) have been commissioned.

S.N.	Name of the sub-station	Bus reactor approved	Commissioning date
1	Gorakhpur	1x125 MVAR	-
2	Allahabad	1x125 MVAR	-
3	Mainpuri	1x125 MVAR	-
4	Vindhyachal (NR bus)	2x125 MVAR	-
5	Nathpa Jhakri	1x125 MVAR	-
6	Dehar	1x125 MVAR	-
7	Chamera-I	1x125 MVAR	-
8	Parbati-II	1x125 MVAR	-
9	Parbati-III	1x80 MVAR	-
10	Rihand	1x125 MVAR	-
11	Panchkula	1x125 MVAR	29/02/2012
12	Jullandhar	1x125 MVAR	31/03/2012
13	Amritsar	1x80 MVAR	31/03/2012
14	Nalagarh	1x125 MVAR	30/04/2012
15	Hisar	1x125 MVAR	30/04/2012
16	Kankroli	1x125 MVAR	31/10/2012

B.28.2 Representative of NRLDC requested members to take steps for expeditious commissioning of Bus reactors at Gorakhpur, Allahabad, Mainpuri, Vidhyachal, Nathpa Jhakri, Dehar, Chamera-I, Parbati-II, Parbati-III and Rihand as well as to explore the possibility of static Compensation and other such devices in the intra state transmission system.

B.28.3 Members of TCC noted the status of installation of reactors. Representative of POWERGRID intimated that reactors at Gorakhpur, Mainpuri and Vidhyachal were likely to be commissioned by January, 2013. Representative of SJVNL intimated that reactor at Nathpa Jhakri was likely to be commissioned by

March, 2014. Representative of BBMB intimated that 2 X 63 MVAR reactor at Dehar had already been approved to be covered under the ISTS scheme in the 30th Standing Committee on Power System Planning. Representative of POWERGRID intimated that investment approval for reactor at Dehar had been obtained. However, the order for this reactor was yet to be placed. Representative of NHPC pointed out space constraints at Parbati-II and Parbati-III. To look into this issue and for exploring space for reactors, TCC recommended constitution of a committee comprising of Sh. B.K. Sharma, Director, CEA, Sh. J.R. Chauhary from NHPC and one member to be nominated by POWERGRID to visit the sites of Parbati-II & Parbati-III.

B.28.4 In respect of absorption of reactive power/ synchronous condenser mode of operation of generators, representative of NRLDC suggested that all generators capable of absorbing reactive power/ synchronous condenser mode of operation should do so in the interest of the grid. As an example, representative of NRLDC stated that on one occasion when THDC was advised to operate unit in synchronous condense mode, operator at hydro station had expressed inability to do so as no engineer familiar with such operation was available in the shift. Representative of THDC stated that trained staff was available round the clock and they had already demonstrated and were ready to absorb reactive power/ operate machines in synchronous condenser mode as per the instructions of NRLDC. Representative of NHPC intimated that they had tried synchronous condense mode of operation at Uri-I but were not successful.

B.28.5 After deliberation, TCC recommended that:

(i) NRLDC would issue specific instructions to generating stations to absorb reactive power and non-compliance would be deliberated in OCC and
(ii) Hydro generators designed to operate in synchronous condenser mode would demonstrate the same based on schedule prepared by NRLDC.

NRPC Deliberations.

B.28.6 NRPC concurred with the recommendations of TCC.

B.29 Status of telemetry at NRLDC (as seen on 6th November 2012)

TCC Deliberations.

B.29.1 Giving a brief background, representative of NRLDC stated that, there were 9 generating stations, 4 sub-stations (at 400 kV level) and 157 sub-stations at (220/132 kV level) in Northern Region from where real-time data was not

In the 27th NRPC meeting held on 30th November, 2012, POWERGRID had informed that study had been carried out and it was noted that Badarpur-Ballabhgarh section was getting overloaded in both directions i.e. power flows from Ballabhgarh to Badarpur in summer and in reverse direction during winter. The possible solution suggested lied in giving additional feed to South Delhi loads fed from Badarpur, possibly from Jettikalan sub-station through cable. The issue was subsequently discussed in the 31st meeting of Standing Committee on Power System Planning in Northern Region. During this meeting it was suggested that a composite scheme for supply of power upto 2022 for Delhi may be evolved for which DTL would submit the load, generation and system data. It was decided that CEA, CTU and DTL would carry out further studies in this regard. He requested CTU/ DTL to update the status with regard to the study.

B.1.11.2 Representative of PTCUL intimated that the system studies for evolving composite scheme up to 2022 was to be done by CEA in association with DTL and POWERGRID but DTL had not furnished the requisite data. Representative of DTL informed that they had furnished the data up to the year 2022 to CEA. TCC decided that CTU should coordinate with CEA.

b. Overloading of 220 kV Hissar (BBMB)-Hissar IA D/C lines.

B.1.11.3 Giving brief background, Member Secretary, NRPC stated that for easing constraint on Hissar (BBMB)- Hissar IA D/C line, it was decided in the 26th NRPC meeting held on 13th July, 2012,that a study would be conducted by CTU for which HVPNL would furnish the requisite data. In the 27th NRPC meeting held on 30th November, 2012, POWERGRID had informed that study had been carried out and the possible solution lied in revival of 400/220 kV ICT at Bhiwani (BBMB) besides planning 220 kV outlets from POWERGRID's newly commissioned 765/400/220 kV sub-station at Bhiwani. The 400/220 kV ICT at Bhiwani (BBMB) had since been revived and there was no overloading on this section.

B.1.11.4 Representative of BBMB confirmed that there was no overloading of 400/220 kV ICT at Bhiwani (BBMB). However, Representative of NRLDC pointed out that this ICT still gets overloaded whenever generation at Khedar TPS was high. He suggested construction of underlying network from Bhiwani (POWERGRID) and Jind substations to avoid any overloading of ICT at Bhiwani (BBMB).

NRPC Deliberations:

B.1.11.5 Member Secretary, NRPC briefed the members about the latest status as informed by CTU/DTL/BBMB in the TCC meeting. Members noted the same.

B.1.12 Provision of Bus Reactors in Northern Region to Control Over Voltages

TCC Deliberations:

B.1.12.1 Giving brief background, Member Secretary, NRPC stated that during the 15th NRPC meeting held on 24th December, 2009, the proposal of bus reactors at 15 grid sub-stations (Gorakhpur, Allahabad, Mainpuri, Hisar, Jullandhar, Amritsar, Kankroli, Nalagarh, Vindhyachal (NR bus), NathpaJhakri, Dehar, Chamera-I, Parbati-II, Parbati-III and Rihand) including 6 reactors at generating stations was approved.

Status of installation of the reactors as available was as under:-

S. No.	Name of the sub-station	Bus reactor approved	Status
1	Gorakhpur	1x125 MVAr	Commissioned in January, 2013
2	Allahabad	1x125 MVAr	Commissioned in October 2012
3	Mainpuri	1x125 MVAr	Commissioned in December 2012
4	Vindhyachal (NR bus)	2x125 MVAr	Expected in March, 2013
5	NathpaJhakri	1x125 MVAr	Expected in March, 2014 Latest information may be informed
6	Dehar	1x125 MVAr	Latest information may be informed
7	Chamera-I	1x125 MVAr	No information, Latest information may be informed
8	Parbati-II	1x125 MVAr	TCC constituted a committee for exploring space for reactors Latest information may be informed
9	Parbati-III	1x80 MVAr	
10	Rihand	1x125 MVAr	No information, Latest information may be informed
11	Jallundhar	1x125 MVAr	Commissioned on 31/03/2012
12	Amritsar	1x80 MVAr	Commissioned on 31/03/2012
13	Nalagarh	1x125 MVAr	Commissioned on 30/04/2012
14	Hisar	1x125 MVAr	Commissioned on 30/04/2012
15	Kankroli	1x125 MVAr	Commissioned on 31/10/2012

B.1.12.2 Members noted the above status.Representative of POWERGRID intimated that one reactor at Vindhyachal (NR-Bus) had been commissioned and second would be commissioned by May, 2013. Representative of SJVN intimated that capacity of reactor at NJHPS was 1X80 MVAR instead of 1X125 MVAR and was expected in March, 2014. Representative of NHPC stated that for reactor at Chamera-I, LoA was likely to be placed by June, 2013 with completion schedule of 12 months. In respect of reactors at Parbati-II & III, it was intimated that committee constituted would be visiting the site in first week of May, 2013.

Representative of POWERGRID intimated that capacity of reactor at Dehar was be 2X63 MVAR instead of 1X125 MVAR and was expected by March, 2015.

B.1.12.3 Representative of NTPC stated that consistent high voltage was leading to equipment failure. He further stated that idle charging of new substations without constructing underlying network was one of the causes for high voltage and suggested that these construction activities be co-ordinated by CEA keeping in view the operational parameters. He added that in the previous NRPC meetings, it was decided that based on the studies by NRLDC, NRPC Secretariat would take

up the issue with CEA for possible solutions to control the high voltages and requested that issue be taken up with the planners on priority. Representative of NRLDC stated that they had been sending their observations to CEA/ CTU regularly. He opined that probable reason of equipment failure could be that equipments were designed for 420 kV whereas the overvoltage settings on the lines are up to 440 kV in a graded manner. He emphasised for early commissioning of reactors as the same were not installed at many locations despite their approval in 2009. Representative of RRVPNL suggested using line reactors as bus reactors by changing the isolator position. He also suggested that by opting for live tank type CTs instead of Dead tank type CTs, probability of CT bursting could be minimized.

NRPC Deliberations:

B.1.12.4 Member Secretary, NRPC briefed the members about deliberations in the TCC meeting. Members noted the same.

B.1.13 <u>Status of other projects being implemented by POWERGRID</u>

TCC Deliberations:

(a) Proposal for implementation of state of art PABX system.

B.1.13.1 Giving brief background, Member Secretary, NRPC stated that in the 27th NRPC meeting held on 30th November, 2012, proposal of POWERGRID for implementation of state of art PABX system was approved. He requested POWERGRID to update the status.

B.1.13.2 Representative of POWERGRID intimated that state of art PABX system was being procured under two stage bidding process. In the first time tendering, out of six vendors only one was technically successful. As such, retendering was done. Tender was to be opened on 17th May, 2013 and commissioning schedule was six months after LoA.

(b) Commissioning of 400/220kV Hamirpur sub-station.

B.1.13.3 Giving brief background, Member Secretary, NRPC stated that establishment of 400/220kV Hamirpur sub-station with 2x315 MVA transformation capacity by LILO of one circuit of 400kV D/C Parbati PS- Amritsar at Hamirpur was approved under NRTSS-XX, during 23rd Standing Committee meeting held on 16/2/2008. Based on the status of implementation recently obtained by NRPC Secretariat, it was understood from POWERGRID that Hamirpur sub-station was expected to be completed by August, 2013.

B.1.13.4 Members noted the above information.

(c) Unified Real Time Dynamic State Measurement (URTDSM) Scheme.

One number bay was promised to be commissioned by June 2013 but no work has begun on these bays and provision of additional 500 MVA ICT. The work of bays and ICT at Ludhiana had been delayed.

He requested POWERGRID to update the status.

B.9.1.2 Representative of POWERGRID intimated that LoA was issued in May, 2013 with the completion target of October, 2014. However, they had commissioned 1 no 500 MVA ICT at Moga by diverting it from Shahjahanpur and all other associated bays/ connectors and other line equipment were being done as per LoA. However, he added that these works would be completed by March, 2014 prior to the / next paddy season. In respect of additional 1 x 500 MVA ICT at Ludhiana, he intimated that this would be commissioned by March, 2014.

B.9.2 Strengthening of bays at 400kV Moga.

B.9.2.1 With the commissioning of 2x500 MVA ICT at 400kV Moga, there is a need to upgrade and strengthen bays at the sub-station in order to realize the full transformation capacity. Representative of PSTCL requested POWERGRID to update the status.

B.9.2.2 Representative of POWERGRID intimated that all works including 2nd 500 MVA ICT and associated bays/ connectors would be completed by next paddy season. On the request of PSTCL, representative of POWERGRID agreed to complete the work by March 2014. However, he added that Moga is a 25 years old substation having 19 bays at present. All the conductors and buses were sized for earlier capacity but with the addition in transformation capacity, clamp connectors etc would need to be changed. PSTCL would also need to carry out certain works. He requested PSTCL to attend to PLCC/ Single Phase Auto Re-closure scheme. Presently, there was unbalance loading in the four lines varying from 150 to 500 MW and this needs to be sorted out. Representative of PSTCL intimated that they were having massive augmentation programme after the paddy season and assured they would complete aforesaid works by March, 2014.

NRPC Deliberations

B.9.2.3 Members of NRPC noted deliberation in TCC.

B.10 Implementation of projects in BBMB.

B.10.1 LILO of 400kV Dehar-Panipat S/C and 400 kV Dehar-Bhiwani S/C by Power Grid.

TCC Deliberations

B.10.1.1 Representative of BBMB stated that LILO of 400 kV Dehar – Panipat S/C and 400 kV Dehar – Bhiwani S/C at 400 kV Panchkula (PG) and 400 kV S/Stn Rajpura (PSTCL) respectively by POWERGRID was approved as part of NRSS-XXVII in

the 29th Standing Committee on Power System Planning of NR held on 29.12.2010. Thereafter the matter was discussed in the 28th NRPC meeting held on 25th & 26th April 2013 at Jaipur for early completion of the work. It was further emphasized in the 88th OCC meeting that POWERGRID would make all out efforts to complete the ongoing civil and other related works for LILO of both lines by November 2013. This work assumes special importance since BBMB is facing acute problem of high voltage at Dehar end during whole of the winter season every year. Also the work of providing Reactor at Dehar by POWERGRID approved in the 30th Standing Committee on Power System Planning of NR held on 19.11.2011 was likely to take time. He, therefore requested POWERGRID to take adequate steps to complete the work well before the winter foggy season.

B.10.1.2 Representative of POWERGRID intimated that LILO of 400KV Dehar – Panipat S/C at 400 kV Panchkula of PGCIL,and LILO of 400KV Dehar – Bhiwani S/C at 400 kV Rajpura S/Stn had been awarded in June, 2013 with the completion target of December, 2014. However, he added that they would try to complete the works as early as possible, say by June, 2014. He added that 400 kV Panchkula substation had not yet been charged and at 400 kV Rajpura substation of PSTCL, bay extension work had not been awarded because pending issues relating to the substation have been resolved only recently.

NRPC Deliberations

B.10.1.3 Members noted the deliberation in TCC.

B.10.2 Provision of 2X63 MVAR Bus reactor and replacement of 250 MVA Transformer with 315 MVA Transformer at Dehar Power House by POWERGRID.

TCC Deliberations

B.10.2.1 Representative of BBMB stated that this issue was discussed in the 28th NRPC meeting held on 25th & 26th April 2013 at Jaipur wherein it was informed by POWERGRID that this work would be completed by March, 2015. It was emphasized that POWERGRID should take requisite action to reduce the execution time to the extent possible so that such type of urgent nature works, which were approved in the 30th Standing Committee of Power System Planning of NR held on 19.11.2011, were completed at the earliest possible in the overall interest of the system to overcome the over voltage problem in the area and to avoid the overloading of ICT. He requested POWERGRID for early completion of the works and to intimate the expected time by which the work would be completed.

B.10.2.2 Representative of POWERGRID intimated that these works were to be done earlier by BBMB themselves but since they had expressed inability, these were being executed by POWERGRID now. Further he intimated that bids for Transformer and Bus-reactors were to be opened on 23.09.2013 and LoA was likely in March, 2014. In respect of GIS at Dehar, he intimated that tender had to been annulled after repeated extensions due to single bid. He added that now this GIS work would be

clubbed with other works and NIT would be issued in September, 2013 and LoA was likely in March, 2014.

NRPC Deliberations.

B.10.2.3 Members noted the deliberation in TCC.

B.11 Proposed amendments in Regulations by Central Electricity Regulatory Commission.

TCC Deliberations

B.11.1 Representative of NRLDC intimated that following new amendments in regulations have been proposed/approved by the Central Electricity Regulatory Commission.

Approved Final Regulations**:**

i) July 2013: Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) (Second Amendment) Regulations, 2013,

Proposed Draft Regulations**:**

i) June 2013: Central Electricity Regulatory Commission (Procedure, Terms and Conditions for grant of trading license and other related matters) (Second Amendment) Regulations, 2013

ii) June 2013: Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) Regulations, 2013 **…..** last date for submission of comments is 31st August 2013.

iii) June 2013: Terms and Conditions of Tariff for the tariff period commencing from 1.4.2014

iv) August 2013: Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Second Amendment) Regulations, 2013….. last date for submission of comments is 10 September 2013.

B.11.2 He stated that if, any constituent had any comments on the above Regulations, they may submit their comment to CERC.

B.11.3 Members of TCC noted the above.

5	Abdullapur-Panchkula II	63	50	--	F	--	126
6	Bassi – Kotputli	106	50	--	F	--	71

46.2 The DOV studies, (with these reactors are in switched off condition), have also been carried out and as per the study results, it is observed that DOV is within limit. (studies are enclosed at Annexure-VIII). Accordingly, POWERGRID has proposed conversion of fixed Line Reactors installed at Sohawal, Kankroli, Abdullapur and Bassi, in the above mentioned lines to switchable line reactors.

46.3 POSOCO stated that provision should be there to use these line reactors as bus reactors in case the line is not in operation.

46.4 After deliberations, members agreed to the POWERGRID's proposal of converting the following fixed Line reactors to switchable line reactors:

Sl. No.	Name of the Line	Substation (sending end)	Reactor (MVAR)	Substation (receiving end)	Reactor (MVAR)
1	Sohawal - Ballia I	Sohawal	50	Balia	63
2	Sohawal - Ballia II	Sohawal	50	Balia	63
3	Kankroli - Zerda	Kankroli	50	Zerda	50
4	Abdullapur-Panchkula I	Abdullapur	50		--
5	Abdullapur-Panchkula II	Abdullapur	50		--
6	Bassi – Kotputli	Bassi	50		--

47.0 Ownership of newly installed 63MVAr Reactor, GIS bay & 4x105MVA ICT BBMB Dehar Power House

47.1 CEA stated that POWERGRID had carried out augmentation (replacement of 250 MVA transformer) of transformer capacity by 315MVA and installation of 2x63 MVAr bus reactors controlled through a single 400 kV bay in line with the approval of 30th meeting of SCPSPNR held on 19-12-2011, at Dehar PH BBMB under ISTS as system strengthening scheme. During the 133rd OCC meeting of NRPC held on 17/03/2017, BBMB had opined that as the system strengthening under ISTS was done at 400kV Dehar substation of BBMB, therefore the ownership of 315MVA ICT and 2x63 MVAr reactors should remain with BBMB only. However POWERGRID mentioned that all the funding / investment has been made by POWERGRID and therefore ownership shall remain with POWERGRID. The tariff petition for the said assets was also filed by POWERGRID in CERC. Earlier also BBMB has raised similar issue regarding ownership of LILO portion of Dehar – Bhiwani and Dehar – Panipat 400 kV lines. To resolve the ownership issue meetings were held in CEA and it was decided that the

ownership shall remain with POWERGRID as the investment has been made by POWERGRID.

47.2 The matter was deliberated and the members recommended that the ownership of the newly installed 63MVAr Reactor, GIS bay and 4x105MVA ICT at BBMB Dehar Power House should remain with POWERGRID. There was no representation from BBMB in the meeting.

48.0 Creation of 400/220kV Substation at Etawah

48.1 Director (PSPA-I), CEA stated that the issue of establishment of 400/220 kV substation at Etawah alongwith Morena–Etawah 400 kV D/c line was discussed in 33rd meeting of SCPSPNR held on 23-12-2013, wherein, it was decided that the proposal would be studied in detail and put up in subsequent standing committee meeting.

48.2 AGM, CTU stated that Etawah is an important load centre in Western Uttar Pradesh and in order to meet the present and future load demand a 400/220 kV substation at Etawah is proposed. Three 400kV circuits viz. Kanpur-Ballabhgarh (PG) S/c line (386km) and Kanpur-Ballabhgarh (PG) D/c lines (370km) are passing near Etawah and to provide connectivity to Etawah LILO of one circuit of Kanpur- Ballabhgarh (PG) S/c line (386km) is proposed. Auraiya-Agra (Sikandra) 220 kV D/c line is also passing close to Etawah area. The follwoing scheme for creation of 400/220kV S/s at Etawah is proposed under ISTS:

(i) Establishment of 2x315MVA, 400/220kV Substation at Etawah through LILO of 400kV Kanpur-Ballabhgarh S/c (386km) line

(ii) LILO of 220kV Auraiya-Agra(Sikandra) D/c at Etawah

48.3 CE, UPPTCL stated that not much load growth has been anticipated in and around Etawah and the network which is existing and planned in that area would be able to meet the future load demand of Etawah. Therefore, presently the substation in not required.

48.4 After deliberations, the proposal of creation of 400/220kV Substation at Etawah was agreed to be dropped.

49.0 765kV D/c interconnection of Lalitpur TPS with Bina(PG)

49.1 CEA stated that Lalitpur STPS (3x660 MW) generation project is connected to 765/400 kV Agra (UP) substation via two nos. of 765kV S/c lines. The dynamic studies show oscillations under N-1 contingency conditions. In order to overcome the issue of oscillations, various options like LILO of 765kV Jabalpur-Orai line at Lalitpur, Lalitpur-Bina (WR) 765kV D/C line, Fixed Series Compensation (FSC) at Agra (UP) end of Lalitpur –Agra 2xS/C lines, Thyristor controlled series compensation (TCSC) at Agra (UP), LILO of 400kV Parichha-Orai at Lalitpur and Lalitpur-Orai 765kV D/c line were studied and discussed in the various meetings of SCPSPNR. However, there was no unanimity on any of the above proposal. UPPTCL was in favour of the provision of PSS tuning vis-a-vis the requirement of FACTS device on the Lalitpur-Agra 765kV 2xS/C lines, however CTU was not agreeable to it. UP being the sole beneficiary of the Lalitpur Generation, it was left to UPPTCL to decide on the above issue.

49.2 NRLDC stated that the oscillations in the system may propagate to other part of the grid and the issue needs to be addressed. Recently, there was an incident in the grid, wherein

of the Project finalized by the group. However, the Letter of Award for the work would be placed with the approval of Chairperson, NRPC.

B.14.5 In the 34thPSC meeting formation of a core Committee was proposed to define the comprehensive Scope of the project comprising members from NRPC secretariat, NRLDC, and all the utilities of NR. Nominations were sought from the utilities for the Committee.

B.14.6 In the meeting it was informed that the nominations were sought and had been received from most of the utilities. It was further informed that the first meeting of the Committee was proposed to be held in 2nd week of November'17.

B.14.7 TCC noted the information.

NRPC Deliberations

B.14.8 Member Secretary, NRPC informed that during a discussion with NRPC, Chairman, he had opined that the work of Protection Database for NR may be awarded to an entity having adequate capability and capacity to perform the task for the huge Northern Region. NRPC, Chairman advised that the Committee for formulating the Detailed Scope of work for the contract should also consider this aspect while preparing the Eligibility and Qualification criteria of the bidder. He had further stressed that the security of such a database also needs to be ensured and the same should be mandated in the Bidding Document for the prospective bidders.

B.14.9 Chairperson, CEA advised that before the finalization of the Bidding Document, representative of ERPC may be requested to make a presentation about the project implemented in their region.

B.14.10 NRPC accorded its consent to the discussions held in the TCC meeting.

B.15 Issue of ownership of 3x105 MVA ICT replaced by POWERGRID in place of 250 MVA ICT at BBMB, Dehar (Agenda by POWERGRID)

TCC Deliberations

B.15.1 Representative of POWERGRID informed that as per the approval of 30th Standing Committee of Power System Planning of NR held on 19.11.2011, POWERGRID had to install 2 x 63 MVAr Bus reactors and replace 250 MVA ICT with 3 x 105 MVA ICT at BBMB, Dehar.

a. The commissioning detail of the said elements as under:

Sl. No.	Description of Element	Date of first time charging	DOCO date	Remarks
1	3 x 105 MVA ICT	31.01.2017 at 20:05 hrs	02.02.2017	Successful Trial Run Certificate on hold by NRLDC.

2	63 MVAr B/Reactor - I	12.12.2016 at 22:34 hrs	14.12.2016	Certificate issued by NRLDC.
3	63 MVAr B/Reactor - II	28.09.2017	Yet to be declared.	Test Charged only.

B.15.2 He informed that all documents related to commissioning were submitted by POWERGRID to NRLDC for issuance of successful trial run certificate for 3 x 105 MVA ICT at BBMB, Dehar. The certificate was put on hold because BBMB had claimed the ownership for the said installed ICT at Dehar. However, for 63 MVAr Bus Reactor – I, successful trial run certificate had already been issued in Dec'16 and no objection was raised by BBMB.

B.15.3 He further stated that as the ICT has been installed and commissioned by POWERGRID, the successful trial run certificate may be issued to POWERGRID so as to declare DOCO for tariff purpose.

B.15.4 Member Secretary, NRPC apprised the forum that the issue was discussed in the 39th meeting of Standing Committee on Power System Planning of Northern Region held on 29th& 30thMay 2017 which recorded as

"Earlier also BBMB had raised similar issue regarding ownership of LILO portion of Dehar – Bhiwani and Dehar – Panipat 400 kV lines. To resolve the ownership issue meetings were held in CEA and it was decided that the ownership shall remain with POWERGRID as the investment has been made by POWERGRID."

B.15.5 TCC decided to drop the agenda item as the issue was already settled and the aggrieved may reach CEA, if required.

NRPC Deliberations

B.15.6 Representative of POWERGRID informed that the NRLDC was not giving successful trial run certificate for 3 x 105 MVA ICT at BBMB, Dehar even though they have invested their money and successfully commissioned the same.

B.15.7 He informed that due to some operational problems at Dehar substation, high voltage and transformer overloading were prevailing which required for installing Bus reactor, Line reactor and a Transformer at Dehar Substation. He further stated that BBMB in 2013 had refused to carry out the work. POWERGRID for the interest of the system had carried out the work as per the recommendations of Standing Committee and NRPC. It was further informed that POWERGRID had invested their money for the transformer.

B.15.8 POWERGRID stated that now that the transformer has been commissioned, BBMB is blocking the issuance of successful trial run certificate for 3 x 105 MVA ICT at BBMB, Dehar by NRLDC by claiming the ownership of the ICT.

B.15.9 Representative of BBMB informed that the issue of funding for the project was never discussed and it was presumed by them that the same was being done through PSDF

funding. He also pointed that the issue was discussed and decided in the 39th meeting of SCPSPNR unilaterally as there was no representative of BBMB present in the meeting.

B.15.10 Chairperson, CEA advised Member Secretary, NRPC not to the drop the agenda and to call the affected parties along with the relevant documents to get the chronology of the discussions and for finalizing the issue.

B.15.11 NRPC agreed to call the affected parties along with the relevant documents to get the chronology of the discussions and for finalizing the issue.

B.16 Schemes Agreed in 39th Standing Committee Meeting

TCC Deliberations

B.16.1 MS, NRPC briefed about the decisions of 39th meeting of Standing Committee meeting of NR held on 29-30th May, 2017 in which following inter-state transmission schemes were agreed:

A. System strengthening Scheme in Northern Region:

i). 1x500MVA, 400/220kV ICT along with ICT bays and 1 nos. of 220kV line bay at 400kV Roorkee (PG) S/s

ii). 1x500MVA, 400/220kV ICT along with ICT bays and 2 nos. of 220kV line bays at 400kV Sonepat (PG) S/s

iii). 2 nos. of 220kV bays at 400kV Abdullapur (PG) S/s

iv). 1x500MVA, 400/220kV ICT along with ICT bays at Bhadla pooling station*

v). v) Replacement of 1x315 MVA ICT by 1x500 MVA and two nos. of 220 kV line bays at Lucknow

vi). 1x315 MVA, 400/220 kV ICT (to be shifted from Lucknow after refurbishment if required) along with ICT bays and 2 nos. of 220 kV line bays at Gorakhpur

vii). 1x500MVA, 400/220kV ICT along with ICT bays and 2 nos of 220kV line bays at 400kV Fatehpur (PG) S/s

- Note: The 1X500MVA, 400/220kV ICT at Bhadla is to be provided for grant of LTA to M/s Essel Saurya Urja Company of Rajasthan Ltd. So, it was proposed to take up the above mentioned ICT at Bhadla Pooling Station separately after fulfilling regulatory requirements by the LTA applicant.

B.16.2 NRPC agreed to the above System strengthening Scheme in Northern Region.

B. Creation of 400/220kV S/s in NCT of Delhi during 12th Plan period(Part-A):

i). To meet the load demand of East Delhi, Kashmere Gate, Park Street and Electric Lane areas, 400/220 kV Rajghat substation was planned by LILO of both circuits of Mandaula-Bawana 400kV D/c at Rajghat. Also, to provide second feed to Maharanibagh, Rajghat–Maharanibagh 400kV D/c line was planned. However, due to non-availability of land at Rajghat, its location was shifted adjacent to existing 400/220kV Maharani bagh and accordingly Rajghat– Maharanibagh 400kV D/c line was dropped.

No. 29/9/2010-R&R (Vol-II)
Government of India
Ministry of Power
***

Shram Shakti Bhawan, Rafi Marg,
New Delhi, 10th January, 2014

To

1. Chairperson, Central Electricity Authority, New Delhi.
2. Principal Secretary/Secretary (Energy) of State Governments/UTs.
3. Secretary, CERC/FOR, New Delhi.
4. Secretary, State Electricity Regulatory Commissions.
5. Chairmen, State Power Utilities/SEBs.
6. Chairmen, CPSUs under Ministry of Power.
7. Member Secretary, Regional Power Committees
8. CEO, POSOCO, New Delhi.
9. ED, NLDC, New Delhi
10. MD, Power Exchanges (PXIL, IEX)

Subject: Scheme for Operationalization of Power System Development Fund - regarding.

Sir,

I am directed to say that the Cabinet has approved the proposal of Ministry of Power on 2nd January, 2014 for Operationalization of the Power System Development Fund (PSDF) and the scheme formulated for utilization of funds deposited therein based on the procedure laid down in the Central Electricity Regulatory Commission (CERC) Power System Development Fund Regulations, 2010.

2. The Power System Development Fund will be utilized for the following purposes:

i) Creating necessary transmission systems of strategic importance based on operational feedback by Load Despatch Centers for relieving congestion in Inter-State Transmission Systems (ISTS) and intra-state system which are incidental to the ISTS.
ii) Installation of shunt capacitors, series compensators and other reactive energy generators for improvement of voltage profile in the Grid.
iii) Installation of standard and special protection schemes, pilot and demonstrative projects, and for setting right the discrepancies identified in the protection audits on regional basis.
iv) Renovation and Modernization (R&M) of transmission and distribution systems for relieving congestion.
v) Any other scheme/project in furtherance of the above objectives, such as, conducting technical studies and capacity building, etc.

3. The National Load Despatch Centre (NLDC) will be the Nodal Agency for implementation of the Scheme.

....2/-

4. A copy of the Scheme for Operationalization of PSDF is enclosed for information and necessary action. The same is also available on the website of Ministry of Power at www.powermin.nic.in.

5. Action taken report in this regard may please be furnished immediately.

Yours faithfully,

Encl: As above

(Pranay Kumar)
Director
Tel: 2371 5250

Copy to:

1. Secretary, Department of Economic Affairs, Ministry of Finance, North Block, New Delhi.
2. Secretary, Department of Expenditure, Ministry of Finance, North Block, New Delhi.
3. Secretary, Department of Legal Affairs, Ministry of Law & Justice, Shastri Bhawan, New Delhi.
4. Secretary, Planning Commission, Yojana Bhawan, New Delhi.
5. Secretary, Ministry of New and Renewable Energy, CGO Complex, Lodhi Road, New Delhi.

Copy for information to: PPS to Secretary (Power)/PPS to AS(DC)/All Joint Secretaries/Economic Adviser/Directors/Dy. Secretaries of Ministry of Power.

Copy to: Incharge, NIC, Ministry of Power for posting the enclosed document on the website of Ministry of Power under 'Whats New' with heading 'Scheme on Operationalization of Power System Development Fund'.

(Pranay Kumar)
Director

SCHEME FOR OPERATIONALIZATION OF POWER SYSTEM DEVELOPMENT FUND

1.0 OBJECTIVE

Section 79(1) (c) of the Electricity Act enables CERC to, inter-alia, regulate interstate transmission of electricity. CERC regulates interstate transmission by specifying regulations for operation of the grid as also by way of stipulating various regulatory charges, as enumerated below:

The interstate transmission of electricity involves regulation of the grid in accordance with the specifications contained in the Grid Code. The CERC has formulated a mechanism to ensure that grid discipline is maintained. A commercial mechanism has been evolved by which those who breach the discipline are required to pay what is referred to as "Unscheduled Interchange charges". This is payable when the users of the grid who should adhere to scheduled dispatch and drawal of electricity do not conform to their commitments.

Regulation of interstate transmission also involves management of congestion in the system. Congestion means a situation where the demand for transmission capacity exceeds the Available Transmission Capability (ATC). In order to relieve congestion in interstate transmission system in real time, a charge called congestion charge is also applied as a commercial measure.

Congestion also affects operation of the power exchanges. This is regulated by CERC by way of a framework of market splitting which is a mechanism adopted by the power exchanges where the market is split because of the congestion in transmission. Thus, the congestion amounts arise from the difference in market prices of different regions as a consequence of market splitting.

Maintenance of power voltages is also an important element of regulating interstate transmission. In order to ensure maintenance of voltage stability within the specified range (97-103% of the nominal voltage), commercial measures by way of reactive

energy charge is levied on utilities as per the Indian Electricity Grid Code (IEGC) and the charges are payable / receivable by the regional entities depending on their reactive power drawal/return impacting the voltage at the metering points.

The above four charges, namely – (a) Unscheduled Interchange Charge, (b) Congestion Charge, (c) Market Splitting Congestion Amount, and (d) Reactive Compensation for failure to maintain voltage are settled between those who pay and those who need to receive. After final settlement takes place, there are surplus amounts which are credited into a special fund called the Power System Development Fund (PSDF).

The objective of this Scheme is operationalization of the Power System Development Fund (PSDF) and utilization of funds deposited therein as approved by the Government and as per the procedure laid down in the CERC (Power System Development Fund) Regulations, 2010, as amended from time to time, and also in consonance with the laid down Accounting and Audit procedures.

2.0 NODAL AGENCY

National Load Despatch Centre (NLDC) shall be the nodal agency for implementation of the Scheme.

3.0ELIGIBLE PROJECTS

3.1 The following categories of projects will be eligible for assistance from PSDF.

a) Transmission systems of strategic importance based on operational feedback by Load Despatch Centers for relieving congestion in inter-state transmission system (ISTS)and intra-state system which are incidental to the ISTS.

b) Installation of shunt capacitors, series compensators and other reactive energy generators for improvement voltage profile in the Grid.

c) Installation of special protection schemes, pilot and demonstrative projects, standard protection schemes and for setting right the discrepancies identified in the protection audits on regional basis.

d) Renovation and Modernization (R&M) of transmission and distribution system for relieving congestion.

e) Any other scheme/project in furtherance of the above objectives such as technical studies and capacity building.

3.2 Projects proposed by distribution utilities in the above areas that have a bearing on grid safety and security, provided these are not covered under any other scheme of the Government of India, such as RAPDRP/RGGVY/NEF, etc.

3.3 Private sector projects would not be eligible for assistance from the Fund.

4.0 APPRAISAL COMMITTEE

There will be an Appraisal Committee as per the composition given at**Annexure-I**for the purpose, inter alia, for scrutiny (techno-economic appraisal) and prioritisation of the various project proposals for funding from PSDF.

5.0 MONITORING COMMITTEE

There will also be an Inter-Ministerial Monitoring Committee under the Chairmanship of Secretary (Power), Government of India. The composition of the Monitoring Committee is given at **Annexure-II**. The Committee will consider such projects (or their revised costs) for sanction based on the Appraisal Report and Regulatory Approval of the Appropriate Commission. Based on the sanctions by the Monitoring Committee, the funds will be released to the project entities from the Budget of Ministry of Power. This Committee will also monitor the implementation of various projects sanctioned by it. Release of funds from PSDF will be regulated as per the extant instructions of the Ministry of Finance in this regard.

5.0 PROCEDURE FOR APPLICATION, SCREENING, APPRAISAL, MONITORING, SANCTION ETC.

5.1 The, Regional Power Committees, Generating companies, Distribution licensees, Transmission licensees, Load Despatch Centres, Power Exchanges as the case may be, shall furnish DPRs to the NLDC who would pose them for technical scrutiny by the Appraisal Committee.

5.2 The Appraisal Committeewill undertake scrutiny (techno-economic appraisal) of the projects with the assistance of Central Electricity Authority (CEA) and prioritise them.

5.3 After scrutinizing the proposals, the Appraisal Committee shall submit its Appraisal Report and recommendations in writing to the Appropriate Commission and to the project entity who has submitted the proposal.

5.4 The entity shall then file a petition with the Appropriate Commission for regulatory approval of the scheme for funding from PSDF. Regulatory approval is required as implementation of the scheme will have implications on tariff, which is in the domain of the Appropriate Commissions. Appropriate Commission will ensure that no tariff is claimed for the portion of the scheme funded from PSDF.

5.5 After regulatory approval, the entity will approach NLDC which will serve as the Secretariat to Appraisal Committee. NLDC will forward the projects to the Ministry of Power for administrative sanction/approval and release of funds.

5.6 The Monitoring Committee will consider the projects for sanction based on Appraisal Report and regulatory approval of the Appropriate Commission in accordance with the extant rules/instructions for sanction/approval and release of funds on the lines of Rajiv Gandhi GrameenVidhyutikaranYajana (RGGVY) scheme & R-APDRP Scheme. The release of funds from PSDF will be regulated as per the extant instructions of the Ministry of Finance in this regard.

5.7 The Monitoring Committee will also monitor implementation of the scheme in addition to issuing/amending guidelines from time to time. The Committee will also be empowered to review and revise the benchmark cost norms. Utmost care and due diligence will be done to rule out any duplicity with any other existing scheme.

5.8 The release of funds to NLDC from the Public Account for further disbursement to applicant entities for the projects will be made after exercising requisite expenditure control, provided that the scheme has adequate funds provisioned for in the Demand for Grants of Ministry of Power.

6. ASSISTANCE PATTERN

The funding will be as a grant, subject to availability of funds. The quantum of grant shall depend on the strategic importance and the size of the project and shall be considered for release as per the CERC (PSDF) Regulations. The Central Government will lay down the detailed guidelines in this regard in consultation with the CERC.

7. EXECUTION, OPERATION & MAINTENANCE OF THE ASSETS

The entity submitting the project(s) shall be responsible for the execution as well as operation & maintenance of its projects for its full technical life as per CERC (PSDF) Regulations, as amended from time to time.

8. BUDGET & ACCOUNTS PREPARATION AND AUDIT OF PSDF, UTILISATION CERTIFICATE, PREPARATION OF SUBSIDIARY RECORDS AND DOCUMENTS REQUIRED FOR DISBURSEMENT FROM PSDF:

The detailed procedure for preparation of Budget, Accounting of receipts/disbursals from PSDF Public Account, Utilization Certificates, and Audit etcshall be finalized as per the extant instructions of the Government of India.

9. IMPLEMENTATION, MONITORING AND CONTROL OF PROJECTS/SCHEMES

9.1 Regional Power Committees, transmission licensees, distribution licensees, Load Despatch Centres, Power Exchanges, Central Transmission Utility (CTU), State Transmission Utilities (STU)- for intra-state systems which are incidental to the ISTS) as the case may be, will be the implementing agencies. The Appraisal Committee in consultation with Ministry of Power will evolve a mechanism to evaluate the implementation of projects by laying down objective quantifiable financial and technical outcome parameters for each category of projects funded under the Scheme.

9.2 The Appraisal Committee may constitute a Group of Officers of the level of Director from CEA and of the level of General Manager from CTU to monitor implementation of projects/schemes and recommend action to be taken in case of default and delay in implementation. This Group of Officers shall submit Monitoring Reportsalongwith the Action Taken Reports to the Appraisal Committee and to the Ministry of Power on a quarterly basis.

10. ANNUAL REPORT

An Annual Report of the Fund including the work undertaken during the year, together with theBalance sheet and Audited Account shall be submitted to the Central Government and the Appropriate Commission. The Annual Report shall also be laid on the table of both houses of Parliament through the Ministry of Power.

Annexure-I

The composition of the Appraisal Committee shall be as under:

1.	Chairperson, Central Electricity Authority	Chairman
2.	Joint Secretary, OM, Ministry of Power	Member
3.	Secretary, CERC	Member
4.	CEO, POSOCO	Member
5.	Project Proponent	Special Invitee (for appraisal)
6.	An Officer of NLDC not below the rank of General Manger, Nominated by head of NLDC	Member Secretary

Note: CEA in the Power System Wing will provide necessary support to the Appraisal Committee.

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Annexure-II

The composition of the Monitoring Committee shall be as under:

1.	Secretary, Ministry of Power	-	Chairman
2.	Addl. Secretary, Ministry of Power	-	Member
3.	Chairperson, Central Electricity Authority,	-	Member
4.	Principal Adviser (Energy), Planning Commission	-	Member
5.	Joint Secretary, Transmission, Ministry of Power	-	Member
6.	Joint Secretary, Ministry of Finance(Deptt. of Expenditure)	-	Member
7.	Joint Secretary, Ministry of New & Renewable Energy	-	Member
8.	Joint Secretary & Financial Adviser (JS&FA) Ministry of Power	-	Member
9.	CEO, POSOCO		-Member Secretary

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