



सत्यमेव जयते

भारत सरकार Government of India  
विद्युत मंत्रालय Ministry of Power  
उत्तर पूर्वी क्षेत्रीय विद्युत समिति  
North Eastern Regional Power Committee  
मेघालया स्टेट हाउसिंग फिनांस को- ऑपरेटिव सोसायटी लि. बिल्डिंग  
Meghalaya State Housing Finance Co-Operative Society Ltd. Building  
नांग्रिम हिल्स, शिल्लोंग - 793003  
Nongrim Hills, Shillong - 793003.

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No. NERPC/OP/OCCM\_Corr/2008/ 6238-70  
To

Date: 23<sup>rd</sup> March, 2009

1. CGM, (LDC), SLDC Complex, AEGCL, Kahelipara, Guwahati-781 019
2. Managing Director, AEGCL, Bijuli Bhawan, Guwahati - 781 001
3. Member (Tech), MeSEB, Lumjingshai, Short Round Road, Shillong - 793 001
4. Chief Engineer (WE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791 111
5. Chief Engineer (EE Zone), Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791 111
6. Chief Engineer (P), Department of Power, Govt. of Nagaland, Kohima - 797 001
7. Chief Engineer (P), Electricity Department, Govt. of Manipur, Keishampat, Imphal - 795 001
8. Chief Engineer (P&E), Department of Power, Govt. of Mizoram, Aizawl - 796 001
9. General Manager, TSECL, Agartala - 799 001
10. GM, NERLDC, Dongtich-Lower Nongrah, Lapalang, Shillong -793 006
11. ED (O&M), NERTS, PGCIL, Dongtich-Lower Nongrah, Lapalang, Shillong -793 006
12. ED (O&M), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
13. ED (Commercial), NEEPCO Ltd., Brookland Compound, Lower New Colony, Shillong-793003
14. ED (O&M), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
15. ED (Commercial), NHPC, NHPC Office Complex, Sector-33, Faridabad, Haryana-121003
16. Vice President, PTCIL, 2<sup>nd</sup> Floor, NBCC Tower, 15, Bhikaji Cama Place, New Delhi - 110022
17. AGM(BD), NVVN, Core5, 3<sup>rd</sup> Floor, Scope Complex, 7 Institutional Area, Lodhi Road, New Delhi - 110003

Sir,

Sub: Minutes of the 36<sup>th</sup> OCC Meeting held on 06<sup>th</sup> March, 2009 at Shillong.

The Minutes of the 36<sup>th</sup> OCC Meeting of NERPC held on 06.03.09 at "NERPC Conference Hall", Shillong is enclosed for favour of kind information and further necessary action please.

The Minutes of the same is also posted in the website of NERPC and this may also be downloaded from the website of NERPC [www.nerpc.nic.in](http://www.nerpc.nic.in)

Encl: As above.

भवदीय / Yours faithfully,

सदस्य सचिव / Member Secretary

Copy to:

1. Chief Engineer, AEGCL, Bijuli Bhavan, Guwahati - 781001
2. Chief Engineer, APGCL, Bijuli Bhavan, Guwahati - 781001
3. MD, CA DISCOM, Bijuli Bhavan, Guwahati - 781001
4. MD, UA DISCOM, Bijuli Bhavan, Guwahati - 781001
5. MD, LA DISCOM, Bijuli Bhavan, Guwahati - 781001
6. S.E. (Trans. & Dist), MeSEB Lumjingshai, Short Round Road, Shillong - 793 001
7. Head of SLDC, MeSEB, Lumjingshai, Short Round Road, Shillong - 793 001
8. Head of SLDC, Department of Power, Govt. of Arunachal Pradesh, Itanagar- 791 111
9. A.C.E. (Gen & Trans), Department of Power, Govt. of Nagaland, Kohima - 797 001
10. Head of SLDC, Department of Power, Dimapur, Nagaland
11. A.C.E. (Power-I), Electricity Department, Govt. of Manipur, Keishampat, Imphal - 795 001
12. Head of SLDC, Electricity Department, Govt. of Manipur, Keishampat, Imphal - 795 001
13. S.E. (Trans & Dist), Department of Power, Govt. of Mizoram, Aizawl - 796 001
14. Head of SLDC, Department of Power, Govt. of Mizoram, Aizawl - 796 001
15. Head of SLDC, TSECL, Agartala - 799 001
16. Chief Engineer(Elect), Loktak HEP, Vidvut Vihar, Kom Keirap, Manipur- 795124

# North Eastern Regional Power Committee

## MINUTES OF THE 36<sup>th</sup>

### OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

**Date:** 06/03/2009 (Friday)

**Time:** 10:30 hrs

**Venue:** "NERPC Conference Hall", Shillong.

The List of Participants in the 36<sup>th</sup> OCC Meeting is given in **Annexure - I**

Sh. Manjit Singh, Member Secretary, NERPC welcomed all members and the participants attending the 36<sup>th</sup> OCC Meeting. He however expressed concern about the lesser participation in the sub-Committee meeting and indicated that various issues of importance in the interest of improved NER grid operation can be resolved effectively only if all the members of the sub-Committee from NER constituent States / utilities participate in the deliberations. He on behalf of NERPC sincerely requested all constituent members of the OC sub-Committee of NERPC to kindly make it convenient to attend the sub-committee meetings so as to achieve a fruitful outcome from the discussions.

While briefing about power scenario for February 2009, he indicated that although regional energy requirement dropped by 11.38% over the past month, the availability was much lower (decrease by 13.65% over the previous month) due mainly to outage of generating units at Khandog HPS and Barmura unit No. IV GPS. A lower frequency profile of the interconnected grid had resulted during this month when system frequency was within permissible range of 49.0 Hz to 50.5 Hz for 94.98% of time compared to 97.83% of time in the previous month.

Member Secretary, NERPC also briefed the forum about R&M proposal furnished by POWERGRID and the importance of addressing the issue in view of increased reliability requirements for electric supply to the end-users of the region.

Member Secretary stated about the need for expediting the work on strengthening of the 132 kV pockets of NER grid by completion of the work of missing links, so that power exchanges to/from the 132 kV pockets under can take place without serious constraints under deficit/surplus conditions in the region. He further stated that the existing Black Start procedures for the NER grid should be reviewed periodically, as after any major disturbance/separation, restoration of the grid is to take place in a minimum possible time period. He suggested that NER constituents may like to furnish their suggestions / views on the document prepared by NERLDC in this regard which is being circulated in this meeting so that the black start procedures are finalized accordingly. The finalized procedure document shall be kept in all Load Despatch Centres of the NE Region for reference.

Thereafter, he requested Shri B. Sarkhel, Superintending Engineer (Operation), NERPC to take up the agenda items for discussion.

#### **A. CONFIRMATION OF MINUTES**

##### **CONFIRMATION OF MINUTES OF 35<sup>th</sup> MEETING OF OPERATION SUB-COMMITTEE OF NERPC.**

Superintending Engineer (Operation), NERPC stated that the minutes of 35<sup>th</sup> meeting of Operation Sub-committee held on 6<sup>th</sup> February, 2009 were circulated vide letter No. NERPC/AS/OCC/2008/6013 – 45 dated 25<sup>th</sup> February, 2009.

**As no comment was received from any of the constituents, the minutes of the 35<sup>th</sup> OCC Meeting were confirmed.**

#### **ITEMS FOR DISCUSSION**

##### **B. Operational Grid Discipline and Operational Planning**

Based on the data furnished by NERLDC the sub-Committee noted about the power supply scenario of the region during month of February 2009 as follows:-

The average frequency during February 2009 was 49.45 Hz compared to 49.58 Hz in the previous month. The minimum frequency in February 2009 was 48.76 Hz

and maximum frequency was 50.90 Hz as against corresponding values of 48.76 Hz and 50.61 Hz in the previous month respectively. The system frequency remained within permissible range of 49.0 Hz to 50.5 Hz for 94.98 % of the time, below 49.0 Hz for 4.91 % compared to the corresponding figures of 97.83% & 2.11 % respectively and for the system frequency was above 50.5 Hz for 0.11 % of the time during February 2009. The regional peak demand in February 2009 was 1459 MW compared to 1491 MW in the previous month- a decrease of 2.15%. The energy requirement was 640.71 MUs compared to 722.97 MUs in previous month a decrease of 11.38% over the previous month. The regional energy availability in February 2009 was 566.99 MUs compared to 656.64 MUs in previous month- a decrease of 13.65% over the previous month. The rise in peak demand was highest of 8.70% in Arunachal Pradesh over the previous month. The drop in peak demand was recorded for Manipur, Tripura and Assam which was of the order of 9.09%, 4.38% and 1.81% respectively over the previous month viz. January 2009.

High voltages at 400 kV substations were encountered at Balipara, Misa and Bongaigoan where maximum voltage observed was 428 kV, 428 kV and 426 kV respectively. Khiehriat and Aizawal 132 kV S/station experienced a minimum voltage of 116 kV and 111 kV respectively.

GM, NERLDC informed that due to shutdown of Khandong and also due to failure of 132 kV Dimapur-Imphal line the power availability in 132 kV pocket got further aggravated. The early restoration of the line however helped in improving the situation to certain extent. He stated that the 132 kV pockets strengthening for NER is essential and this must be expedited on priority. He said that consideration of protection aspects and proper relay coordination on system configuration change should be ensured so that grid disturbances attributed to this cause are minimized. GM, NERLDC further informed that Kathalguri generating station units frequently trip, which results in considerable loss of generation thereby increasing the level of shortages in the region. He urged NEEPCO to look into this matter seriously so that the tripping of the station units is minimised. He acknowledged the co-operation extended by the regional utilities in the real-time operation to help smooth operation of the NER grid in spite of the acute shortage/reduced availability.

NEEPCO informed that gas compressor unit #2 broke down on 14.01.09 and in order to restore the unit, major overhauling work was started from 02.03.2009 after arranging necessary spares.

***The OC sub-Committee requested NEEPCO to make all out efforts to improve the situation of frequent tripping of Kathalguri compressor units which results in appreciable loss of regional availability under the prevailing scenario wherein alarmingly low availability conditions exist.***

#### **FOLLOW UP ACTION**

#### **C. 1. Installation of Line Reactor at Kathalguri end of 220kV Misa – Kathalguri Line**

In 33<sup>rd</sup> OCCM meeting held on 10.12.2008 the sub-Committee had discussed the results of study conducted to identify requirement of a line reactor at Kathalguri end of 400 kV Misa-Kathalguri line to reduce the voltage rise on it so as to facilitate charging of line from Kathalguri end. As per the recommendations of the study, provision of 220 kV, 25 MVAR line reactor at Kathalguri end is required to be made. The OC sub-Committee had suggested about conducting a study by PGCIL to examine system behaviour with the proposed additional reactor. PGCIL were to revert back on the matter.

***PGCIL intimated that the result of the above study is awaited from their Corporate office. They intimated that soon after the outcome is received, the same shall be put up in the OCC meeting.***

#### **C. 2. Preparation of LGBR for the year 2009-10**

The data as sought vide NERPC letter dated 23<sup>rd</sup> October, 2008 for preparation of the LGBR for year 2009-10 was not received from Arunachal Pradesh & Manipur. Data received from Departments of Power, Nagaland and Mizoram after the last OCCM as concurred in the meeting is enclosed at Annexures-C.2a and C.2b.

The data submitted by Assam and Tripura did not comprise of data for an anticipated month-wise peak demand/energy requirement for the period from

April 2009 to March 2010. The above constituents viz. Assam, Tripura, Arunachal Pradesh & Manipur were requested to furnish the remaining data at the earliest for finalization of the LGBR.

**C. 3. Revival of 132 kV PK Bari-Dharmanagar-Dullavcherra- Panchgram link between Assam and Tripura**

During the 34<sup>th</sup> OCCM of NERPC, the details of CBs, CTs, relays and relay schemes etc which were provided by both Assam & Tripura States at their respective ends were included at Annexures C.3a and C.3 b of the minutes of above meeting were discussed. The sub-Committee had suggested that the details might be examined from the protection point of view by protection and testing group of utilities particularly from Tripura, Assam, Meghalaya and NERLDC & NERTS on 17<sup>th</sup> February 2009 at Agartala. The matter was discussed on that day accordingly. In that meeting necessary requirement was finalized (minutes of the meeting at Annexure-C.3). In the meeting it was agreed that procurement action against requirement under the short-term solution is to be taken by both TSECL and AEGCL. AEGCL in the above meeting had requested TSECL to arrange common procurement and installation work, if agreed.

It was intimated in this OCC meeting that the above status was appraised to the NER Power Committee in its 7<sup>th</sup> meeting held on 24<sup>th</sup> February, 2009 at Shillong. The modality for implementing the short-term solution jointly by TSECL and AEGCL as recommended above was agreed in the NERPC meeting and the arrangement for the same will be made by TSECL. However the cost thus incurred by TSECL on common procurement and installation work will be shared on proportionate basis between these two utilities viz. TSECL and AEGCL. The NER Power Committee in NERPC meeting on 24<sup>th</sup> February 2009 requested TSECL that all works under the scope of short-term solution recommended above may be completed so as to operationalise the above link by September 2009.

***The OC sub-Committee noted the status on the position as above. The sub-Committee suggested that TSECL and AEGCL may be formally requested***

***on the above for taking further action to ensure speedy implementation of the above work.***

**C. 4. Status of Khandong Shutdown**

Members enquired from NEEPCO about the status of Khandong progress.

***NEEPCO informed that the work is progressing as per the schedule.***

NEEPCO intimated that inspection work of hydraulic structure and water conductor system by the experts is in progress and the sluice gate repair work is likely to complete as per the schedule around 9<sup>th</sup> March 2009. Subsequently the tunnel filling up and reservoir level build up work will commence after which depending upon availability of water, machines would be ready to put back to grid.

**C. 5. Status of DCDs.**

In 34<sup>th</sup> OCCM of NERPC, POWERGRID had intimated that the 45 Nos. SEMs and 30 Nos. DCDs have been received by them. They informed that the inspection and testing is expected to take place on 19.01.2009 and subsequently the DCDs shall be made available for operation by 1<sup>st</sup> February, 2009.

NEEPCO indicated that the DCDs are urgently needed at Ranganadi HPS as there is no standby DCD is available there.

***NERTS, PGCIL informed that the DCDs were now received by them and are available with them. NERTS intimated that the DCDs will be made available to the sites at the earliest. PGCIL would coordinate activity with NEEPCO/NHPC in this regard accordingly.***

**C. 6. Replacement of CT ratio at Samaguri end on 220 kV Samaguri - Balipara.**

As suggested by the sub-Committee in 35<sup>th</sup> OCCM the recommendation of the

sub-Committee for enhancement of existing CT ratio at Samaguri (ASEB) end of 220kV Samaguri-Balipara line from 400/1 to 800/1 or at least by 600/1 was discussed in the TCC and 7<sup>th</sup> NERPC meetings held on 23<sup>rd</sup> February and 24<sup>th</sup> February 2009. AEGCL had indicated that they will examine the proposal and would initiate action for upgrading the CT ratio. AEGCL representative intimated that the matter is under examination by them with the view to have redundancy level and would intimate status on the same soon.

***The sub-Committee noted the status on the issue as above and expressed that adequate power transfer capacity on the corridor requires to be ensured early.***

**C. 7. Disconnection of 220 kV Kathalguri-Tinsukhia line w.e.f. 24.12.2008.**

The matter of disconnection of the above line was discussed in 35<sup>th</sup> OCCM of NERPC. After deliberations it was concluded that hooking up of the connections for providing the facility for LBB protection and relay coordination work including finalizing the protective relays' settings at the Kathalguri station would be carried out by NEEPCO in week's time in coordination with AEGCL

***NEEPCO & AEGCL informed that the work at the Kathalguri Station has since been carried out successfully.***

***The OCC members suggested that relay settings for important tie-lines require to be coordinated well so as to avoid any inadvertent tripping of lines. NERPC requested utilities to send necessary relay settings data so that relay coordination requirements/settings are discussed by the Protection forum. The utilities were also requested to send the recent nominations for the concerned protection and testing engineers of their respective departments who represent the respective utilities for actively participating in discussions/finalizing the protection requirements of the NER system in the Protection sub-Committee meetings of NERPC.***

**C. 8. Status of implementation of additional Transmission elements for strengthening 132 kV network pockets.**

In the 32<sup>nd</sup> OCC Meeting held on 11/11/2008, it was noted that the above elements are expected to be implemented by 2009 – 10.

***POWERGRID/ MeSEB intimated the likely date of completion of the works as follows:-***

**POWERGRID:-**

1. 160 MVA 220/132 kV ICT at Kopilli (NEEPCO) – by 31.03.09
2. 132 kV Kopilli-Khandong S/c line with Zebra conductor – by June, 2009
3. 100 MVA 220/132 kV ICT at Dimapur – by May, 2009
4. LILO of 132 kV Kohima- Dimapur(Nagaland) S/c line at Dimapur(PG) – held up on account of ROW problem, likely to be resolved soon to get the work completed.

**Meghalaya:-**

Construction of 220 kV MISA-Byrnihat D/c line with 200 MVA, 220/132 kV ICT at 220 kV Byrnihat S/s (Upto Assam border) – March 2010.

**D. NEW ITEMS**

**D. 1 R & M of various 132 kV substations of PGCIL in NER.**

In the 7<sup>th</sup> NERPC meeting held on 24<sup>th</sup> February, 2009 at Shillong, a proposal for R&M of various 132 kV substations of POWERGRID in NER submitted by PGCIL was placed for discussion (**Annexure D.1**). The NER Power Committee desired that this may be discussed by Operation/Protection and Commercial sub-group of NERPC. Therefore, the details of the equipment proposed under R&M by PGCIL as above were discussed in this OCCM.

POWERGRID in its presentation (**Annexure-D.2**) highlighted various aspects requiring R&M in view of maintaining acceptable levels of reliability and inadequate availability of spares to effectively maintain the existing old protection and switchgear equipment. NER Transmission System operated and maintained by PGCIL comprises 14 Nos. of Sub-Stations at various voltage levels comprising 3 (three) nos. at 400kV level, 2 (two) nos. at 220kV level and 9 (nine) nos. at 132kV level.

PGCIL explained that some of the 132kV Substations/bays have completed over 20 years of service. The equipments installed in these Substations/bays were manufactured in early 1980`s and have become old & obsolete. Because of age & non-availability of spares maintaining the equipment at acceptable levels of reliability is becoming increasingly difficult. To improve reliability of the system, R&M at some of the older stations has been proposed by them. The details of the substations for which R&M is needed was explained by the PGCIL in the presentation (**Annexure- D.2**). The R&M work covers 132kV Jiribam, 132/33kV Kumarghat, 132kV Aizawl, 132 kV Haflong sub-stations, 132kV Nirjuli bay at 132kV Gohpur (ASEB), 220kV Misa # I & II at Samaguri (ASEB), 132kV Khliehriat (PG) at 132kV Khliehriat (MeSEB) and 400kV Misa, Balipara and Bongaigaon sub-stations.

The R& M activity includes 145 kV Minimum Oil Circuit Breakers (MOCB), 245kV Minimum Oil Circuit Breakers (MOCB) electromechanical distance protection relays- type: MM3V, old Battery Chargers and Banks all of the above equipment, which have completed more than 20 years in service, 33kV MOCB`s, AC distribution panel comprising of switch/fuse units, Retrofitting of Main#I protection i.e Phase Comparison Relays connected to 400 kV lines at Misa, Baliapara & Bongaigaon Substations due to mal-operation/non-operation, repeated failure of modules, all of the above equipment which is phased out by manufacturer & support/spares are not available.

The total estimated cost of the above proposed R&M work as given by the PGCIL proposed is Rs 291.45 lakhs as against that proposed in NERPC meeting of Rs 275.63 lakhs- a difference of Rs 15.82 lakhs from the original proposal at Annexure- D.1. PGCIL on query intimated that this estimated cost pertains to that against replacement of 2 sets of 142 kV SF6 Circuit breaker, Type: 3ARS, Model: HLR/BLG500, Make: BHEL YOM: 1996 & 1989 for Nirjuli S/s, which was inadvertently not included by them earlier.

PGCIL further intimated that it will take about one year to complete R&M works after the approval is got.

***After detailed deliberations, OC sub-Committee agreed to the above proposal for carrying out R&M works by PGCIL in view of old equipment which is phased out by manufacturer & support/spares are not available for the same and to maintain acceptable levels of reliability and adequate availability of spares. The sub-Committee recommended that the proposal may be discussed by the Commercial sub-Committee of NERPC for further necessary action.***

**D. 1.1 Special Protection for vulnerable 132 kV NER pocket.**

NERLDC informed that the proposal for Special protection scheme is under preparation. The same will be presented to the sub-Committee in due course.

**D. 1.2 Any other important protection issues.**

POWERGRID informed that 132 kV Imphal (Manipur) – Imphal (PGCIL) S/c line trips frequently. PGCIL intimated that protection scheme on PGCIL side is checked and is found to be in order. As no representative from Manipur was present, ***the sub-Committee suggested that Department of Power, Manipur may be requested for arranging the inspection for relay settings and the healthiness of the protection equipment for the line at Imphal end.***

**D. 2 Statewise anticipated peak demand/requirement, shortage for March, 2009/ April, 2009.**

The sub-Committee based on above had worked out regarding anticipating demand and requirements for March, 2009/April, 2009 as follows:-

		<b><u>March, 2009</u></b>		<b><u>April, 2009</u></b>	
S.No.	State	Peak Demand (MW)	Peak Availability (MW)	Peak Demand (MW)	Peak Availability (MW)
1	Arunachal Pradesh	75	63(63)	75	63(63)
2	Assam	760	740(740)	760	740(740)
3	Manipur	100	90(65)	100	90(65)
4	Meghalaya	240	234(230)	240	234(230)
5	Mizoram	65	58(40)	65	58(40)
6	Nagaland	90	86(60)	90	86(60)
7	Tripura	130	132(100)	130	132(100)
	Total	1460	1403(1298)	1460	1403(1298)

Note: Bracketed figures relate to the availability during the shut down period of Khandong outage.

**D. 3 Shutdown of 220 kV Circuit Breaker of Kathalguri – Mariani feeder (L-2) of AGBP, NEEPCO from 13.03.2009 to 20.03.2009 for major overhauling.**

NEEPCO proposed major overhauling for 220 kV Circuit Breaker of Kathalguri – Mariani feeder (L-2) of AGBP from 13.03.2009 to 20.03.2009.

***The sub-Committee discussed the NEEPCO's proposal for outage of the above line. As the region is facing severe crisis due to shortage conditions that prevail in view of the ongoing emergency shut down of Khandong***

*and Kopili HEP and at Doyang HEP in lean season, the sub-Committee requested NEEPCO to defer the outage till favorable grid conditions exist.*

#### **D. 4 Generation Planning (ongoing and planned outages)**

There was no proposal for outage of any generating utilities during March, 2009.

#### **D. 5 Outage Planning for Transmission elements and related matters**

There was no other proposal for outage of any transmission line from NER utilities for March, 2009.

#### **D. 6 Review of Grid performance during February 2009**

The sub-Committee noted salient data concerning regional generation, inter-regional energy exchange, average frequency for February 2009 in comparison with that for January 2009 as follows:-

	<b><u>During Feb' 09</u></b>	<b><u>During Jan' 09</u></b>
1. The Total Generation(gross) in NER:	507.791 MU	619.837 MU
2. Total Central Sector Gen (gross) in NER:	292.302 MU	370.751 MU
3. Inter-regional energy exchange:		
(a) NER – ER	: 0.000 MU	0.020 MU
(b) ER – NER	: 74.610 MU	57.670 MU
(c) Net import	: 74.610 MU	57.650 MU
4. Average frequency	: 49.45 Hz	49.58 Hz

#### **D. 7 Preparation & finalization for Black Start Procedure.**

The OC sub-Committee had observed that the existing Black Start procedures for the NER grid should be reviewed periodically, as after any major disturbance/separation, restoration of the grid is to take place in a minimum possible time period. In this regard, a draft document of black start procedures prepared by NERLDC was placed before the sub-Committee. The NER constituents were requested to furnish their suggestions / views on the document so that the procedures are finalized accordingly. The finalized

procedure document shall be kept in all Load Despatch Centres of the NE Region for reference.

**D. 8 Major grid disturbances in the previous month (February, 2009)**

***There was no major disturbance reported by NERLDC during the month of February, 2009.***

**D. 9 Date and Venue of next OCC**

It was agreed to hold 37<sup>th</sup> OCC meeting of NERPC on 8<sup>th</sup> April, 2009 (Wednesday) at NERPC Conference Hall, Shillong.

The meeting ended with thanks to the chair.

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**Annexure-I****List of Participants in the 36<sup>th</sup> OCC meeting held on 06/03/2009**

Venue : NERPC Secretariat, Shillong

Sl. No	Name & Designation	Organization	Contact No. /e-mail ID
1	No Representatives	Arunachal Pradesh	
2	Sh. H.Hazarika, DGM	SLDC, AEGCL (Assam)	9854809104
3	Sh. A.K.Saikia, Sr. Manager	SLDC, AEGCL (Assam)	
4	No Representatives	P&E, Manipur	
5	Sh. F.E. Kharshiing, E.E	SLDC, MeSEB (Meghalaya)	9863066960
6	Sh. T. Gideon, AEE	SLDC, (Meghalaya)	9863063375
7	No Representatives	P&E, Mizoram	
8	Nitovi.A.Wotsa	E.E, P&E, Nagaland	
9	No Representatives	SLDC, Nagaland	
10	No Representatives	Tripura	
11	Sh. L.K.Kanungo, GM	NERLDC	9436302725
12	Sh. A. Mallick, CM	NERLDC	
13	Sh. P. Krishnamurthy, Mgr	NERLDC	
14	Sh.S.K.Saha, DM	NERLDC	
15	Sh. Sheikh Shadrudin, DM	NERLDC	9436335380
16	Sh. A. Patir, AGM	NERTS	
17	Sh. P. Kanungo, CM	NERTS	
18	Sh. D.K.Saikia, SM	NEEPCO	9436163983
19	Sh. B.R.Bhattacharya, Manager	NEEPCO	9436122450
20	Sh. Manjit Singh, MS	NERPC	9436706436
21	Sh.A.K.Jain, SE (Coml	NERPC	
22	Sh.B. Sarkhel, SE (O)	NERPC	0364-2520038
23	Sh. B. Lyngkhai, AS	NERPC	9436163419
24	Sh.Satbir Singh, EE	NERPC	
25	Sh. S.M.Aimol, AEE	NERPC	9863311203
26	Sh. G. Medhi, AE	NERPC	9863317776

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**Record Notes of discussion on Protection Committee meeting held on  
17-02-2009 at SLDC, Agartala.**

The Meeting was chaired by Mr. M K Chakraborty, GM (Tech), TSECL while the participants from NE states including PGCIL(NERTS), NERLDC and NEEPCO were present.

As a follow-up action on the decision taken in 35<sup>th</sup> OCC meeting, Member Secretary vide letter No. NERPC/OCC/2009 Dated. 11<sup>th</sup> Feb'09 requested Tripura, Assam, Meghalaya & NERTS to discuss the matter relating to Revival of P.K. Bari-Dharmanagar-Dullavcherra-Panchgram 132KV Line and finalize the requirement jointly by Assam & Tripura in order to increase reliability of NE-Transmission system for the benefit of beneficiaries.

In the meeting following issues were discussed and recorded:-

1) TSECL pointed out that the requirement/availability shown in the annexure – I and forwarded by NERPC needs following corrections.

Sl. No	Sub-Station	Line	Availability & Requirement
1	P.K. Bari (Tripura)	132KV Kamlpur S/C	CB- SF6 breaker, CT- 400/1
		132KV Ambassa S/C	CB- SF6 breaker, CT- 400/1
		132KV Kumarghat S/C	CB- SF6 breaker, CT- 400/1, PLCC: – ULDC exist.
		132KV Dharmanagar S/C	CB- SF6 breaker, CT- 400/1 PLCC: – ULDC exist.
2	Dharmanagar	132KV P.K. bari S/C	CB- MOCB to replaced by SF6, CT- 400/5 (to set at 1 amp. If available) , PLCC: – ULDC exist.
		132KV Durlavcherra S/C	CB- SF6 is urgently required, CT- 400/5 (to set at 1 amp. If available), OFC: – ULDC exist.

2) There are two issues have been identified to resolve the difficulties of operationalising the line.

i) Long term solution &

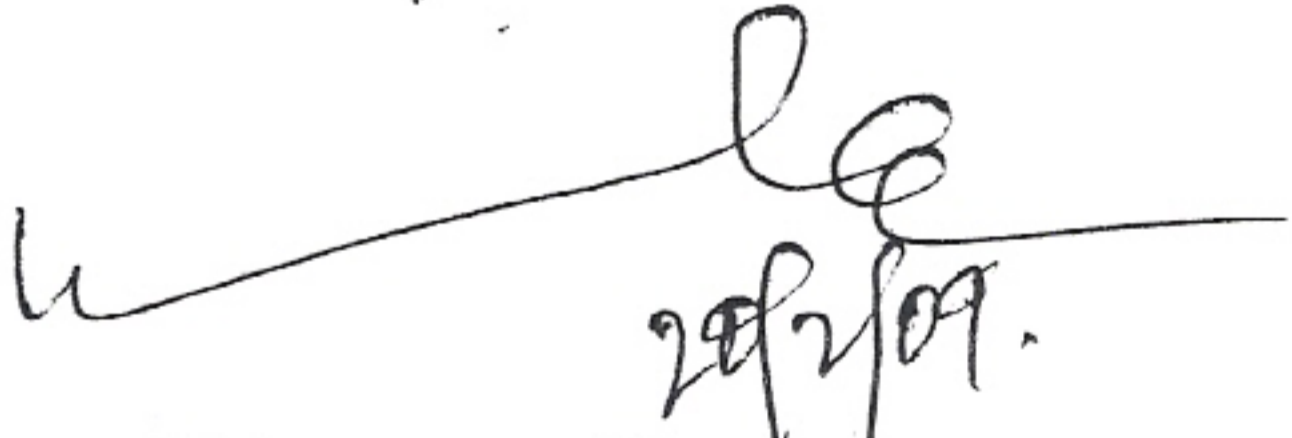
ii) Short term solution

The long term solution would be required to address the entire work of renovation, modernization and up-gradation of line from P.K. Bari to Khlerihat as envisized by sub group-1 of CEA. The PGCIL was entrusted for survey and DPR preparation. DONER has sanctioned Rs.50.00 Crores in this regards infavour of PGCIL. It is reported that the above work will commence as soon as payment is released to PGCIL by DONER.

The short term solution matching the requirement worked out by NERPC. The AEGCL will take necessary action for up-gradation of CT, Protection system and breaker etc. The short term solution is required for meeting the requirement incoming pre-monsoon and monsoon during which the reliability of Kumarghat – Aizwal line become very poor and consequently R.C. Generation & Tripura Generation has to be back down while 132KV pocket of NER will suffer for acute shortage of power.

3) TSECL has already taken advance action for installation of breaker, relay etc. at Dharmanagar and expected to be completed by Sept,2009.

4) AEGCL has also requested TSECL to arrange common Procurement and installation work for both Tripura & Assam and the cost may be shared proportionately if agreed. TSECL requested AEGCL to send formal letter so that the proposal can be examined by TSECL.

  
General Manager (Tech-1)  
TSECL, Tripura, Agartala

THE STATUS OF TERMINAL EQUIPMENTS FOR 132 KV PANCHGRAM-DURLLAVCHERRA-DHARMANAGAR LINE AT PANCHGRAM NEW SUB-STATION AND DURLLAVCHERRA SUB-STATION

A. At Panchgram New Sub-station:

Line Breaker: 132 KV BHEL make MOCB.

C.T Ratio : 200-100/1-1A. ( Connected C.T Ratio :200/1A).

Relay type : Numeric

Scheme available : 1) O/C , 2) E/F, 3) DPR

B. At Durllavcherra Sub-station:

1. 132 KV Durllavcherra-Panchgram line:

Line Breaker : 132 KV ABB make SF<sub>6</sub> Breaker. Model No. LTB 145D1/B. But, due to incomplete fabrication and L.A work the breaker could not be commissioned. However arrangements are being made to complete the remaining portion of fabrication work. The power supply to 132 KV panchgram feeder is maintained through line isolator device only.

C.T Ratio : 400-200 / 1-1A. (Connected C.T Ratio : 400/1A)

Relay type : Numeric

Scheme available : 1) O/C , 2) E/F, 3) DPR

2. 132 KV Durllavcherra- Dharmanagar line :

Line Breaker : 132 KV Escort make old breaker running with periodical repairing & maintenance.

C.T Ratio : 200-100 /1-1A. (Connected C.T Ratio : 200/1A)

At DLV , against 132 KV DHNR line, there is no numeric relay.

Available Relay Type: Electromechanical (English Electric)

Scheme Available: 1) O/C 2) E/F

**THE STATUS OF TERMINAL EQUIPMENT AT BOTH ENDS OF 132 KV  
PANCHGRAM-BADARPUR (PGCIL)**

**Line Breaker : 132 KV CGL make SF<sub>6</sub>**


**C.T Ratio: 600-300 / 1-1 A ( Connected C.T Ratio : 600/1A)**

**Relay type : Numeric**

**Scheme available : 1) O/C , 2) E/F, 3) DPR**

## Protection and Communication Details

	At Dharmanagar Sub-Stn	Breaker	CT. ratio	Protection	Communication	Remarks
1	DNR - Durlavchera	Nil	400/5A	Nil	PLCC not functional	Programme for installation of breaker & operationalization of protection scheme has been taken up & tender already floated. The work for this augmentation would be awarded during Feb,2009 and the work is likely to be completed by July,2009 including
2	DNR - P.K.Bari	MOCB	400/5A	O/C & E/F	PLCC functional	The MOCB is very old & due to obseleence of spares, the reliability of the said breaker is not satisfactory.
	<b>At P.K. Bari Sub-Stn.</b>					
1	P.K.Bari - PGCIL, KMG	SF6	400/1A	O/C & E/F	PLCC functional	Establishment of PLCC communication has been takenup & will be completed in near future
2	P.K.Bari, KMG - Ambassa	Nil	Nil	Nil		Establishment of PLCC communication has been takenup & will be completed in near future
3	P.K.Bari, KMG - Kamalpur	SF6	400/1A	O/C & E/F		Establishment of PLCC communication has been takenup & will be completed in near future
4	P.K.Bari - Dharmanagar	SF6	400/1A	O/C & E/F	PLCC functional	

  
 12/11/09  
 Additional General Manager  
 Commercial & System Operation  
 TSECL, Agartala.

ANNEXURE C.4

PROGRAM OF SHUTDOWN OF KHANDONG WATER CONDUCTOR SYSTEM AND KHANDONG AND STAGE II UNITS

Sl. No.	Description	Jan 2009																															February 2009																															March 2009																														
		27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																																			
<b>Activity - I (Dewatering)</b>																																																																																														
1	Lowering of level upto 706 M																																																																																													
2	Opening of both the service sluice gates of Khandong Dam for lowering of water level upto 701.2 M																																																																																													
3	Filling & Stacking of sand bags (8000 bags)																																																																																													
4	Lowering of Intake Gate																																																																																													
5	Tunnel dewatering by opening of Gate Valve of Khandong Valve House																																																																																													
<b>Activity - II</b>																																																																																														
1	Making arrangement for tunnel inspection																																																																																													
2	Inspection of Tunnel & other hydraulic structures																																																																																													
<b>Activity - III (Stage-II Electrical Works)</b>																																																																																														
1	Cooling water header pipeline																																																																																													
2	Inspection and decision regarding repairing of MIV																																																																																													
3	Repair of MIV																																																																																													
<b>Activity - IV (Service Sluice Gate-I)</b>																																																																																														
1	Dismantling of hydraulic hoist & bonnet																																																																																													
2	Erection of lifting portal																																																																																													
3	Lifting of sluice by chain pulley																																																																																													
4	Metal filling/grinding etc.																																																																																													
5	Rubber seal change																																																																																													
6	Painting etc.																																																																																													
7	Lowering of gate-I																																																																																													
<b>Activity - V (Service Sluice Gate-II)</b>																																																																																														
Decision of repair will be taken after observing the condition of gate/seal etc. which can be ascertained only after opening the gate. However, lowering will be done simultaneously with Gate-I																																																																																														
<b>Activity - VI (Vent Pipe)</b>																																																																																														
1	Arrangement for shift & lift movement of personnel for inspection of the surge shaft wall.																																																																																													
2	Inspection for detection of seepage point & decision for its treatment.																																																																																													
3	Treatment																																																																																													
<b>Activity - VII (Inspection of Intake Gate)</b>																																																																																														
1	Erection of scaffolding, inspection & measurement of embedded parts of gate groove.																																																																																													
2	Inspection & measurements																																																																																													
3	Removal of scaffolding from tunnel																																																																																													
<b>Activity - VIII (APM of Khandong P.S.)</b>																																																																																														
1	Works in valve house																																																																																													
2	APM of Unit-I (30 days)																																																																																													
3	APM of Unit-II (30 days)																																																																																													
<b>Activity - IX (Tunnel Filling)</b>																																																																																														
1	Filling of Tunnel																																																																																													
Days																																																																																														
Date																																																																																														

Handwritten signature and date: 3/1/09

Units SO

Synchronised

## (i) Substations/Bays where R&amp;M have been envisaged:

SN	Name of Substations/Bays	Year of Comm	Name of project
1	132kV JIRIBAM	1986	ATLP (Addl. Trans System)
2	132/33kV KUMARGHAT	1987	
3	132kV AIZAWL	1988	
4	132kV HAFLONG	1987	
5	132kV Nirjuli bay at 132kV Gohpur (ASEB)	1991	GITL (Gohpur Itanagar Trans System)
6	33kV Bays at 132/33kV Nirjuli	1991	
7	220kV Misa # I & II at Samaguri (ASEB)	1984	Kopili Trans. System
8	132kV Khliehriat (PG) at 132kV Khliehriat(MeSEB)	1984	
9	400kV Misa, Balipara and Bongaigaon	1999	Kathalguri Trans Sys

## (ii) List Of R&amp;M Activities Proposed

SN	ACTIVITIES	QTY	Cost (Rs Lakhs)
1.0	Replacement of 145kV Minimum Oil Circuit Breakers (MOCB), Model: HLR145-2501E/BLG302, Make: BHEL, Yr of Mfg: 1984 (Equipment phased out by manufacturer & spares not available)	16 Sets	131.17
2.0	Replacement of 245kV Minimum Oil Circuit Breakers (MOCB), Make: BHEL, Yr of Mfg: 1984(Equipment phased out by manufacturer & spares not available)	2 Sets	28.69
3.0	Replacement of electromechanical distance protection relays. Type: MM3V, Make: English Electric, Yr. of mfg: 1984-85(Equipment phased out by manufacturer & support/ spares not available)	9 sets.	24.47
4.0	Replacement of old Battery Chargers and Banks which has completed more than 20 years in service.	4 sets. each	17.20
5.0	Replacement of 33kV MOCB's (Equipment phased out by manufacturer & spares not available)	6 Sets	19.80
6.0	Replacement of AC distribution panel comprising of switch/fuse units	4 panels	16.60
7.0	Retrofitting of Main#I protection i.e Phase Comparison Relay, Type: P40, Make: M/s Alstom connected to 400kV Transmission lines at Misa, Baliapara & Bongaigaon Substations due to mal-operation/non-operation, repeated failure of modules. (Equipment phased out by manufacturer & support/spares not available)	9 Nos.	37.70

**Total Cost : Rs. 275.63 Lakhs**