

North Eastern Regional Power Committee

MINUTES OF THE 39th

OPERATION COORDINATION SUB-COMMITTEE MEETING OF NERPC

Date: 10/06/2009 (Friday)

Time: 10:30 hrs

Venue: “NERPC Conference Hall”, Shillong.

The List of Participants in the 39th OCC Meeting is given in **Annexure – I**

Sh. Manjit Singh, Member Secretary, NERPC welcomed all the participants to the 39th OCC Meeting of NERPC. He said that compared to previous month of April 2009 the rise in the regional peak demand was 7.47% compared to rise in peak availability of only 5.67%. Similar situation of rise in energy requirement of 7.27% against rise in availability of 4.75% over the previous month was noted. This indicates that availability rise was not commensurate with the demand rise resulting higher percentage shortfall in May 2009 (peak shortfall 14.47% , energy shortfall 14.96% in April 2009) compared to that (peak shortfall 13.01% , energy shortfall 12.91% in May 2009) in the previous month. He therefore intimated that till the onset of monsoon in full, the hydro potential in the region would be only rising slowly causing higher shortage conditions due to summer demand and the consequent low frequency operation in the region which is a part of the interconnected N-E-W grid. In view of the same he requested NER utilities to ensure that full capacity of all generating units is available on bar to meet and arrange an advance bilateral energy support needed if any from other sources within/outside the region to meet shortage conditions and to prevent overdrawl by them from the grid at low system frequency. He said that issues relating to finalization of Special Protection for the region and provision of under frequency relays in the region under defense mechanism during major grid disturbance conditions are slated for discussion in the agenda which may be discussed and finalized by the sub-committee so that the schemes emerged thereof are implemented early to minimize the occurrence of grid disturbances in the region

and ensure secured operation of the NER grid. He requested all the participants of the sub-Committee to actively deliberate on these important issues for resolving by the NERPC OC Sub-Committee and recommendation thereof to the TCC/RPC of NERPC for their implementation.

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 39th MEETING OF OPERATION SUB-COMMITTEE OF NERPC.

Superintending Engineer (Operation), NERPC stated that the minutes of 39th meeting of Operation Sub-committee held on 8th May, 2009 were circulated vide letter No. NERPC/OP/OCCM_Corr/2008/904-36 dated 26th May, 2009.

The following typographical errors were pointed out in the meeting:

In page no. 3,

- (i) sub-para (b), Last five years.....running **at** lower PLF – the word “at” was missing.
- (ii) Sub-para (c), Inadequate availability **of** gas – the word “of” was missing.
- (iii) Sub-para (i), NEEPCO should **take** immediate steps to ensure the trouble-**free** operation of- the words “take” and “free” were missing
- (iv) Sub-para (iii) , NEEPCO may also **Up** for R&M works – the word “up” is to be deleted.

In page no. 8, item D.11

- (v) In Heading “Review of....May 2009” to be replaced with “Review of...**April** 2009”
- (vi) The generation data figures at Sr. Nos. 1 to 4 in col (3) pertain to **April** 2009 instead of mentioned as May 2009; and similar figures in col (4) pertain to **March** 2009 instead of mentioned as April 2009

With the above modifications, the minutes of the 39th OCC Meeting were confirmed.

ITEMS FOR DISCUSSION**B. Operational Grid Discipline and Operational Planning**

Member Secretary then briefed about the grid performance during the month of May, 2009. He stated that as per the data made available by NERLDC, the average frequency during May 2009 was 49.68 Hz compared to 49.47 Hz in the previous month. The minimum frequency in May 2009 was 48.75 Hz ((14.05.09 at 19:13 hrs) and maximum frequency was 51.03 Hz (12.05.09 at 07:27 hrs) as against corresponding values of 48.37 Hz and 50.81 Hz in the previous month respectively. The system frequency remained within permissible range of 49.0 Hz to 50.5 Hz for 90.91 % of the time, below 49.0 Hz for 8.33 % compared to the corresponding figures of 79.73 % & 20.25 % respectively and for the system frequency was above 50.5 Hz for 0.77 % of the time during May, 2009. The regional peak demand in May 2009 was 1569 MW as compared to 1460 MW of previous month. The energy requirement was 751.37 MUs compared to 700.42 MUs in previous month. The regional energy availability in May 2009 was 638.96 MUs compared to 609.98 MUs in previous month- a increase of 4.75% over the previous month. The rise in demand met was highest of 16.5% in Arunachal Pradesh followed by Meghalaya 8.98 % over the previous month. The drop in demand met was recorded in for Tripura, Mizoram and Nagaland of the order of 17.14%, 2.47% and 1.03% respectively over the previous month viz. April 2009.

High voltages at 400 kV substations were encountered at Bongaigoan, Balipara and Misa where maximum voltage observed was 426 kV, 444 kV and 440 Kv respectively. High voltage at 132kV at Kumarghat S/s was observed at 146 kV. Kumarghat 132 kV S/station experienced a minimum voltage of 118 kV.

Thereafter, NERLDC presented the grid performance during May, 09 as compared to the corresponding period of previous year i.e. May, 08. The details of which are enclosed at **Annexure-II**.

Sub-committee noted as above.

FOLLOW UP ACTION

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

Regarding results of study which was to be conducted by PGCIL 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, PGCIL intimated that CEA had earlier recommended (CEA letter dated 16.11.1997 submitted during the meeting) to provide for 220kV, 31.5 MVAR reactor at Kathalguri as per the system improvement scheme submitted by PGCIL on the comprehensive short term proposals submitted by it to CEA and suggested that, the sub-Committee may like to consider the above recommendation for installation of the line reactor at Kathalguri. OC sub-Committee discussed and the members opined that as the study conducted by NERLDC in this regard for is in conformity with the above recommendation, proposal of installation of 31.5 MVAR reactor as per the CEA's recommendation may be gone ahead with.

After further deliberations by the OC sub-Committee, it was agreed to recommend provision of 31.5 MVAR reactor, in place of 25 MVAR Line reactor earlier proposed by NERLDC. However, it was suggested that both NEEPCO and PGCIL would examine the space availability for installation of above 31.5 MVAR reactor with provision of one isolator (to use the same reactor as bus reactor also) at the Kathalguri power station and intimate the outcome in the next OCC meeting for finalisation.

C. 2.1 Special Protection Scheme for vulnerable 132 kV NER pocket

GM, NERLDC informed the sub-Committee that the Special Protection Scheme (SPS) was prepared by NERLDC and presented in the 37th OCC meeting. He said that no further comments/suggestions were received as on date from any of the NER constituents. On the request from members present, NERLDC presented the Special Protection Scheme so finalized and would also make the same available on the NERLDC website for ready reference and perusal by the constituents for further necessary action. The sub-Committee felt the need to implement the SPS

to minimize the number of system occurrences to ensure highest reliability of power supply in the region and therefore recommended to obtain concurrence of the TCC for implementation of the scheme early in the interest of grid security and ensuring redundancy so as to restore the system in the shortest possible time after any interruption. NERLDC suggested that for early implementation special TCC meeting may be convened for discussion and approval by the TCC of NERPC.

On the suggestion from NERLDC for early implementation of the above Special Protection Scheme for better grid security, OC sub-committee decided to hold a special TCC meeting at Guwahati (under the aegis of ASEB) preferably on 02.07.09 or 03.07.09 for approval of the scheme. The sub-Committee suggested that other related important issues concerning system operation, if any, may also be included for discussion.

C. 2.2 Items for discussion from TSECL, Agartala.

1. Status of missing Links construction by Power Grid.
2. Radial connectivity of 132 kV pocket with advance intimation for proper peak load management.
3. CT replacement at Kumarghat 400/1 Amp in place of 300/1 Amp as present restriction of 50 MW imposing by Kumarghat PG.

PGCIL intimated the following on the above:

- i) The construction of 132kV Kopili-Khandong line (11 Km) is ready but the commissioning of 160 MVA, 220/132 ICT at Kopilli would require more time and is expected to be ready by 30.09.09.
- ii) 100 MVA, 220/132kV ICT at Dimapur would be ready for commissioning by end of June, 09, but the LILO work (4/5 km) at Dimapur s/s is yet to complete because of existing right of way problem. So, PGCIL insisted on declaring commercial operation of the said ICT w.e.f 01.07.09.
- iii) The new 600/1 Amp CT, in place of 300/1 Amp for Kumarghat s/s would be installed within 15 days.

- iv) NERLDC/PGCIL agreed to look into the additional SCADA data requirement in respect of radial connectivity of 132 kV pocket by TSECL for needful.

The Sub-Committee noted as above.

C. 3 Non-functioning of SCADA in Arunachal Pradesh state

During deliberation, it was intimated that the PGCIL/NERLDC representatives had visited Itanagar on 24.03.09 and it was observed that UPS was functioning properly but there were certain problems in the SCADA part of the system. It was concluded that SCADA software needs to be re-installed (by POWERGRID) and 48V DC modem is to be procured in line with all other modems connected to the source. NERLDC intimated that the arrangement for reinstallation of SCADA software was made in April 09, but due to unreliable of data channel between Itanagar to NERLDC, Shillong through BSNL network, the data transmission / data updating could not be checked.

Further, NERLDC desired that the AMC of the SCADA system with M/s AREVA is to be completed for all SLDCs in a combined way and if, SCADA at Itanagar is not functional for want of data channel, the process of AMC with running equipment would get further delayed. So, Arunachal Pradesh should arrange to take immediate action with regard to ensuring availability of the above data transmission channel as the entire equipment of existing SCADA should be in working order, prior to initiating the process of AMC with M/s AREVA in respect of the existing SCADA systems by the NERLDC.

The Sub-Committee noted the above and suggested that Arunachal Pradesh may initiate action in this regard.

D. NEW ITEMS

D. 2 Installation of Under Frequency load-shedding Relays (UFRs) in NER

NERLDC intimated that in NER at present UFRs are installed at the following feeders with a 1st stage setting as:

- i) 132kV Nirjuly-Gohpur line (48.4 Hz.)

- ii) 132 kV Samaguri (ASEB) local load (48.2 Hz.)
- iii) 132kV RHEP-Nirjuly line and (48.4 Hz.)
- iv) 132 kV RC Nagar- Kumarghat line (48.4 Hz.)

In view of recent communication from Director (O&M), MOP to Member (GO & D), CEA regarding raising of settings of UFR operation from 48.5 Hz. To 48.8 Hz. because of sustained (5 hrs.) low frequency operation (below 49 Hz) of SR grid on 08.05.09, and this was viewed by MOP with serious concern. This was discussed by Joint Secretary (OM), MOP with NLDC and CEA on 09.05.09. Further, in a review meeting on 11.05.09 by Member (GO & D), CEA, ED (SO/ NLDC),CE (GM) and Director (OM), MOP, it was decided that SRPC may be advised to take up the matter about raising of settings from prevailing level starting below of 48.5 Hz. to frequencies below 48.8 Hz. on priority basis and report to MOP.

The sub-Committee observed that at present the 1st stage of UFR operation in the NR and WR grid commences at 48.8 Hz. NERLDC expressed that since NER constituents are overdrawing from NEW grid for a considerable period of time even during low frequency (below 49.2 Hz), it is felt necessary that NER constituents should also contribute in the process of control of the integrated grid frequency. As the UFRs installed at the existing locations as above do not adequately act as a defense mechanism whenever the system demands, NERLDC suggested that it is required to review the setting of the under frequency load shedding relays in line with 1st stage setting in NR & WR as well as quantum of load relief desired in NER from grid security point of view under defense mechanism as these relays would be expected to operate only under grid disturbance conditions as per the settings and would safely isolate the system elements in such a manner so as to prevent total grid collapse.

After detailed deliberations, the OC Sub-Committee suggested that the constituents of NER would procure new UFRs to install at various locations suitably identified by them in their respective systems so as to achieve the required load relief quantum in their respective systems as tabulated below and the existing UFRs may be utilized for Special Protection Scheme (SPS) :

	Stage-I (48.8 Hz.)	Stage-II (48.5 Hz.)	Stage-III (48.2 Hz.)	Total (MW)
Quantum of load relief(MW) desired in NER	90	30	30	150

	Ar.Pr.	Assam	Manipur	Mizoram	Meghalaya	Nagaland	Tripura
Stage-1 (48.8 Hz.)	5 MW	50 MW	5 MW	5 MW	12 MW	5 MW	8 MW
Stage-II (48.5 Hz.)		15 MW			8 MW		7 MW
Stage-III (48.2 Hz.)		15 MW			8 MW		7 MW

D. 3 Erroneous reading of SEM for 132 kV Loktak-Jiribum line-II – NHPC

NHPC intimated that SEM reading for Jiribum line-II at Loktak end was observed erroneous occasionally. To this PGCIL intimated that one set of L&T energy meter for the line at Loktak end would be handed over soon for its installation at site.

D. 4 Time synchronization of all SEMs matching with GPS - NHPC

It has been observed by NHPC that all the SEMs timing does not match with the GPS. There is a difference of 4 minutes approximately.

It was reported that due to drifting problem existing SEMs are sometimes giving erroneous reading but, with installation of L&T meters the readings are collected through DCDs which are likely to be error free.

The Sub-Committee noted the above.

D. 5 Payment of Transmission Charges for Inter-State Transmission System

As per the Regulation 32 (3) of CERC (Term & Conditions of tariff) Regulations 2009, the monthly Energy Account (REA) issued by Member Secretary of the Regional Power Committee included a statement specifying the ratio in which Transmission charges for the month April,09 are to be shared by the transmission users in accordance with Regulation 33.

So, as per Regulation 23 (4), the transmission licensee raised the bill for the transmission charge (inclusive of incentive) for the month of April based on its estimate of transmission system availability factor (TAFM). Adjustments if any shall be made on the basis of the TAFM to be verified by RLDC and certified by the Member Secretary of the Regional Power Committee of the concerned region within 30 days from the last day of the relevant month. Based on the provisional REA issued by NERPC and estimated TAFM of POWERGRID, monthly bill for transmission charges inclusive of incentives was raised by POWERGRID.

Accordingly, PGCIL submitted the monthly transmission availability data for April, 09 to the constituents including NERPC during the 38th OCC meeting for furnishing comments/observations of NER States on the same for corrections/modifications needed, if any. As decided in the above meeting, in case of no feedback, the same would be treated to be concurred and the NERLDC verified data for certification by NERPC Secretariat will be incorporated in the provisional REA for May,09. The composite transmission availability (TAFM) in respect of intra-regional system for April,09 issued by NERPC on **02.06.09** was **99.041%** which was also included in provisional REA of May,09 for raising the monthly bill for transmission charges inclusive of incentives by PGCIL.

On the query from PGCIL, they intimated that the inter-regional transmission lines between NER-ER which need to be included in the certification are maintained by POWERGRID-ER-II, so the monthly Transmission Availability for the month of April, 09 issued by ERPC are included in ERPC monthly REAs.

The sub-committee discussed and agreed that the ERPC certified figure as above in respect of the ER-NER inter regional lines may be reflected in NERPC monthly REAs. The data in support of this calculation as certified by ERPC will however be provided to NERPC by NERTS PGCIL for records.

D. 6 State-wise Anticipated peak demand/requirement, shortage for June, 2009 and July, 2009

The sub-Committee reviewed the anticipated peak demand/energy requirement and finalized the same for the month of June and July, 2009.

S.No.	State	<u>June, 2009</u>		<u>July, 2009</u>	
		Peak Demand (MW)	Peak Availability (MW)	Peak Demand (MW)	Peak Availability (MW)
1	Arunachal Pradesh	90	70	90	80
2	Assam	850	820	870	820
3	Manipur	110	90	110	95
4	Meghalaya	270	210	280	250
5	Mizoram	65	55	65	60
6	Nagaland	90	75	95	85
7	Tripura	145	110	150	125
	Region	1701	1501	1743	1591

D.7 Generation Planning (ongoing and planned outages)

The Sub-committee noted the status on ongoing forced/planned outages for the generating units in the region as under :

- i) Kopili Unit no. 1, which is under s/d for overhauling, is expected by 15.06.09
- ii) Kopili unit no. 3 sent to M/s. BHEL works and is expected by end of August,09

D. 8 Outage Planning Transmission elements

The Sub-committee discussed and approved the programme of transmission line planned outages as proposed by PGCIL for the month of June/July, 2009. The same is enclosed at **Annexure D. 8.**

D. 9 Review of Grid performance for May, 2009

The data relating to regional generation, inter-regional energy exchange, average frequency during the month of May, 2009 in relation to April'09 data is as below:

	<u>During May' 09</u>	<u>During April' 09</u>
1. The Total Generation(gross) in NER:	549.46 MU	519.156 MU
2. Total Central Sector Gen (gross) in NER:	363.505MU	295.841 MU
3. Inter-regional energy exchange:		
(a) NER – ER :	10.97 MU	1.560 MU
(b) ER – NER :	93.5 MU	103.480 MU
(c) Net import :	82.53 MU	101.92 MU
4. Average frequency :	49.68 Hz	49.47 Hz

The Sub-Committee noted the above.

D. 10 Major grid disturbances in the previous month (May , 2009)

NERLDC has reported that

- a) On 10.05.09 at 22:46 Hrs., major parts of the states of Assam, Nagaland, Manipur, Mizoram and Tripura got isolated following trippings of the 400kV Balipara-Bongaigaon line-I on D/P, Z-1, R-N at Bongaigaon end & R-N from Balipara end, 400 kV Balipara-Bongaigaon line-II tripped on D/P, Z-1, Y-N at Baongaigaon end & no tripping from Balipara end. These tripping caused isolation of NER grid (except a part of Assam) from NEW grid.

Immediately after that 400kV Balipara-Ranganadi Line-I also tripped on Overvoltage and Ranganadi HEP units tripped. This resulted in dip in frequency of isolated grid and all the running units (except NTPS with local load) tripped on Under Frequency and power interruption occurred in isolated grid. The system progressively restored at 23:47 Hrs.

The Detail of grid disturbance report received from NERLDC is enclosed at **Annexure D.10 (1)**.

During deliberation on the presentation by NERLDC, PGCIL intimated that 400kV Balipara-Bongaigon line-I might have tripped due to Transient fault, but the reason of line-II tripping is yet to be known. The auto-reclosure feature of the line might not be in service. Member Secretary, NERPC suggested that feature of Auto-reclosure feature of all 400 kV and important 220 kV lines should exist as per the standard guidelines so that inadvertent tripping on transient faults might not result in prolonged interruption in power supply.

The Sub-Committee suggested that PGCIL may examine the tripping of 400kV Balipara-Bongaigon line-II on distance protection from Bongaigaon end and as no indication was received from Balipara end. Further, the time graded settings of overvoltage for 400kV Balipara-Ranganadi ckt I and II may also be examined so as to avoid undesired tripping of lines due to overvoltage. PGCIL agreed to look into the same and intimate the outcome in the next OCCM of NERPC.

- b) On 22.05.09 at 11:05 Hrs. while NER grid was running in synchronization with N-E-W Grid, 132 kV Dimapur-Imphal line was tripped on D/P from both ends (Imphal0 D/P, R-Ph, Z-1). As 132 kV system was connected through 132 kV Dimapur-Imphal line only the 132 kV system got separated. This resulted in isolation of 132 kV system comprising of Mizoram, South Assam, Tripura, Manipur and part of Meghalaya and power interruption in this system due to load- generation mismatch (at low frequency). Generation loss occurred at Kopili, AGTPP and Tripura.

The system progressively restored at 11:27 Hours.

The detail of the report is enclosed at **Annexure D.10 (2)**.

ERLDC informed that the disturbance was caused due to tripping of 132 kV Dimapur-Imphal s/c line on distance protection which led to collapse of Mizoram, South Assam, Tripura, Manipur and part of Meghalaya system as above. Tripura system did not survive on both the occasions. The reported frequent trippings of 132 kV Dimapur-Imphal s/c line caused a concern and PGCIL were requested to arrange patrolling of the line in order to avoid transient nature of faults.

The Sub-Committee noted the above.

D. 11 Date and Venue of next OCC

It is proposed to hold the 40th OCC meeting of NERPC at NERLDC, Shillong on 10th July, 2009 (Friday).

List of Participants in the 39th OCC meeting held on 10/06/2009

Venue : NERPC Secretariat, Shillong

Sl. No	Name & Designation	Organization	Contact No. /e-mail ID
1	No Representative	Arunachal Pradesh	
2	Sh. D.Kar, Manager	SLDC, AEGCL (Assam)	094353343583
3	Sh. Benjamin L. Saiate, EE (Elect.),	Manipur	09436024085
4	Sh. T. Gideon, AEE, SLDC,	Meghalaya	9863063375
5	Sh.K.W.Sohlang, AEE, SLDC,	Meghalaya	0363/2551967
6	No Representatives	P&E, Mizoram	
7	Sh. Nitoyi Wotsa, E.E, SLDC,	Dimapur, Nagaland	03862230117
8.	Sh.B.Tiameren AO, EE, (Comn)	Nagaland	03862230117
9.	Sh. Swapan Debbarma	Sr. Manager, SLDC, Tripura	9436122579
10.	Smt.Shampa Sen	Sr.Manager, SLDC, Tripura	9436120263
11	Sh. L.K.Kanungo, GM	NERLDC	9436302725
12	Sh. T.S.Singh, Dy. G.Manager	NERLDC	9436302714
13	Sh. N.R.Paul, CM	NERLDC	9436302723
14	Sh. A.Patir, AGM (O&M)	NERTS	
15	Sh. S.K.Saha, DM	NERLDC	9436302980
16	Sh. P.Krisnamurty, CM	NERLDC	9435339677
17	Sh. Bhaskar Goswami, Sr. Mgr	NEEPCO	9436163983
18	Sh. B.R.Bhattacharya, Manager	NEEPCO	9436122450
19	Sh.A.K.Jain, SE (Coml	NERPC	0364-2520038
20	Sh.B. Sarkhel, SE (O)	NERPC	0364-2520043
21	Sh.Satbir Singh, EE	NERPC	
22	Sh. S.M.Aimol, AEE	NERPC	9863311203
23	Sh. D.K. Bauri, AEE	NERPC	9863317236

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**Shutdown Programme for the Month of June, 2009 as approved in the 39th OCC Meeting
held on 10.06.2009 at NERPC, Shillong.**

S/D PROGRAMME FOR POWERGRID TRANSMISSION LINES & ITS ASSOCIATES BAYS:-					
SN	Name of Tr. Lines	Date	Time	Purpose	Areas/ Feeders Affected
1	132kV Aizawl-Jiribam	25.06.09 & 26.06.09	08:00 hrs. to 16:00 hrs.	AMP	Aizawl-Jiribam
2	132kV Badarpur-Kolasib	13.06.09			Badarpur-Kolasib
3	132kV Badarpur-Khliehriat	20.06.09			Badarpur-Khliehriat
5	400kV Kathalguri-Mariani	24.06.09 & 25.06.09			Kathalguri-Mariani
**Note:All the associates bays maintenance would be done during the S/D of respective Transmission lines					
S/D PROGRAMME FOR POWERGRID SUB- STATIONS/ BAYS/ICTs/REACTORS :-					
S/N	NAME OF SUB-STATION/	S/D DATE	S/D TIME	PURPOSE	Areas/ Feeders Affected
1	132kV Daporijo Bay at Ziro SS	18.06.09	09:00 hrs. to 15:00 hrs.	AMP	132kV Ziro-Daporijo
2	33kV, 25 MVAR Tertiary Reactor-I Bay	23.06.09			Tertiary Reactor-I
3	33kV, 25 MVAR Tertiary Reactor-2 Bay	24.06.09			Tertiary Reactor-2
4	220 Kv Samaguri - Mariani	15.06.09	08:00 to 16:00 hrs	AMP	ASEB