

# North Eastern Regional Power Committee

## Agenda

### For

### Sub Group Committee Meeting

Time of meeting : 10:00 Hrs.

Date of meeting : 13<sup>th</sup> July, 2015 (Monday)

Venue : "Hotel Pragati Manor", Guwahati.

#### ITEMS FOR DISCUSSION

#### **A.1 Application to be submitted 10 (ten) days prior to anticipated date of first time charging/synchronization as per procedure:**

During the 108th OCC meeting, the Sub-committee requested to intimate the Nodal Officer for above issue so that correspondence can be taken up with them directly. The name of Nodal Officer along with contact number is given below:

Constituent	Name of Nodal Officer	Contact No	Email id:
Ar. Pradesh	N. Perme, EE, SLDC	09436288643	sldcitnagar@gmail.com
Assam	B.C. Borah, DGM, LDC	09435119248	sldcaseb@rediffmail.com
Manipur	L. Haokip, Manager	08575004401	l.haokip@mspdcl.com
Mizoram	Vanlalrema, SE, SLDC	09436140353	sldc_mizoram@rediffmail.com
Meghalaya	F.E. Kharshiing, SE, SLDC	09612170657	sldc.shg@gmail.com
	H.F. Shangpliang, EE, MRT	09863315562	hector_fd@rediffmail.com
Nagaland	Atoho Jakhalu, EE, SLDC	09436002696	atoho.jk@gmail.com
Tripura	Mrinal Pal, Manager	09436137022	mrinalpaulnit@gmail.com
NEEPCO	Bhaskar Goswami, Sr. Mgr	09436163983	pbhaskargoswami@yahoo.com
NHPC	R.C. Singh, Manager	09436894889	rcsloktak@yahoo.com
NERTS	Supriya Paul, Dy. Mgr.	09436302995	nerts_os@yahoo.in
	Deep Bhaumick, Engineer	09436335255	-do-

<b>OTPC</b>	Narendra Gupta, Manager	09774233426	nk.gupta@otpcindia.in
<b>NTPC</b>	J. Bhattacharyya, AGM(EMD)	09435720036	jayanbhattacharjee@ntpc.co.in
	G. K. Kundu, AGM(EEMG)	09401826314	

During 34<sup>th</sup> PCC & 110<sup>th</sup> OCC Meetings, the Sub-committee requested NERPC to conduct a Sub-group meeting alongwith all the above Nodal Officers for smooth co-ordination in future.

NERLDC informed that in some cases, the applications are being submitted by concerned utilities just prior to the anticipated date of charging.

*(Example => The application regarding test charging of 220 kV Mariani (PG) – Mokokchung (PG) I & II lines alongwith associated bays at Mariani and Mokokchung for 31.03.2015 from 1600 Hrs was forwarded vide letter dated. 30.03.2015 and was received at NERLDC on 31.03.2015 itself)*

- i) In some cases, original applications along with undertakings are not submitted by concerned utilities and sometimes not signed by nodal officer.

*(Example => Original documents of application regarding test charging of LILO of one circuit of 132 kV Khandong – Haflong line at Umrangso 132/33 kV, 16 MVA and 25 MVA transformers at Umrangso and 132 kV Main I and Transfer bus(s) at Umrangso were not sent to NERLDC)*

- ii) The applications are not being addressed to concerned person of NERLDC in many cases. SOII Deptt of NERLDC is dealing with this matter.

*(Example =>The application regarding test charging of 220/132 kV, 200 MVA ICT-II at Bishwanath Chariali (PG) was initially sent to NERLDC with crossed envelope. The same was again forwarded later on vide letter dated. 27.05.15 from DGM (AM), NERTS, but the application was still dated for test charging on 18.05.15 at 1200 Hrs.)*

- iii) Some of the undertakings submitted by concerned utilities (Transmission licensee as well Generators ) for first time synchronization of unit or charging/trial operation of new transmission elements are not satisfying the requirement at the time of synchronization/charging (like telemetering issues, inter-face meters etc.)

- iv) The list of elements to be Charged and Element Rating details are not marked properly in many applications.

*(Example => In the application regarding test charging of 132 kV Bishwanth Chariali (PG) – Biswanath Chariali (AEGCL) I & II lines sent to NERLDC vide letter dtd. 19.03.2015, there was no mention of charging of 132 kV bays at Biswanth Chariali (PG) and Biswanath Chariali (AEGCL) and no information submitted pertaining to these bays.)*

- v) The Single Line Diagram is not being furnished alongwith application in many cases. Further, it is required that the SLD furnished should indicate clearly the elements which are to be charged as per the application. But the SLDs furnished in many cases do not have desired clarity or elements to be charged are not marked properly.

*(Example => In the Application regarding test charging of 220 kV Mariani (PG) – Mokokchung (PG) I & II lines alongwith associated bays at Mariani and Mokokchung for 31.03.2015 from 1600 Hrs, only the SLD for Mokokchung (PG) substation was enclosed in A4 size. The SLD for Mariani (PG) was sent later vide letter dated 31.03.2015 in A4 size only. Both the SLDs did not have desired clarity, and marking of elements proposed to be test charged were not clearly indicated)*

- vi) The statuses of completion of each Dia/Bus/Breakers etc., are not being indicated along with the application in most cases.
- vii) List of SCADA points needed to be made available at NERLDC is not indicated in many cases, and Regional Entities are furnishing blank or incomplete formats.
- viii) Also, in several cases, though the SCADA points are indicated, at the time of synchronization or charging of the element, the data from SCADA is actually not available.
- ix) Field-RLDC data validation of Analog (MW, MVAR etc) and Digital data (CB, Isolator status, etc.) are to be done prior to the charging of element.
- x) Snapshot of the Analog and Digital status for the said elements are to be furnished alongwith the application.
- xi) If the status of Digital and Analog data found suspect / replaced, charging permission may not be issued from NERLDC.
- xii) If any abnormality found post charging of the element, it should be rectified immediately by the respective utility. Otherwise provisional approval may stand cancelled.
- xiii) A compliance report indicating that Voice communication is in place should be enclosed alongwith the application.

*(Example => In the application regarding test charging of 220/132 kV, 200 MVA ICT-II at Biswanath Chariali (PG) substation submitted to NERLDC vide letter dated. 27.05.2015, a completely blank format regarding SCADA related issues was forwarded alongwith the application.*

*In case of drawal of start-up power by BgTPP, NTPC, SCADA data was not reported for long period.*

*In the application regarding test charging of 132 kV Biswanth Chariali (PG) – Biswanath Chariali (AEGCL) I & II lines sent to NERLDC vide letter dated 19.03.2015, it was marked that PLCC / RTU were yet to be installed.)*

- xiv) The type and location of SEMs are to be marked in accordance with CEA regulations.
- xv) In many cases, blank or incomplete formats are being sent.
- xvi) Also, in cases where requisite information as per format is furnished, it is seen in real time that meters were actually not in place and not able to record the readings at the time of 1<sup>st</sup> time charging or synchronisation
- xvii) Alongwith the undertaking, the report of testing of Special Energy Meters (SEMs) is to be enclosed.

*(Example =>In the application regarding test charging of 220/132 kV, 200 MVA ICT-II at Bishwanath Chariali (PG) substation submitted to NERLDC vide letter dated 27.05.2015, a completely blank format regarding SEM related issues was forwarded alongwith the application.*

*In the application regarding test charging of 132 kV Bishwanth Chariali (PG) – Bishwanath Chariali (AEGCL) D/C lines sent to NERLDC vide letter dated 19.03.2015, it was marked that SEM meters were yet to be installed.)*

*In case of 400 kV Bongaigaon – New Siliguri III and IV lines of ENICL, several days after charging of the line, erratic readings were received.*

- xviii) Entities are not furnishing the Connection agreement alongwith all Annexure along with the Application for synchronization

*(Example => In the application regarding test charging of LILO of one circuit of 132 kV Khandong – Haflong line at Umrangso 132/33 kV, 16 MVA and 25 MVA transformers at Umrangso and 132 kV Main I and Transfer bus(s) at Umrangso the connection agreement with ISTS was not enclosed alongwith application.)*

- xix) The undertaking by Transmission licensee in respect of Protective systems is also to be furnished as per format specified in procedure.
- xx) It has been noted that while utilities may have furnished the said undertaking, in real-time the lines could not hold while charging for the 1<sup>st</sup> time and tripped immediately after charging. Also, after a second attempt of charging, SOTF relay indication was found indicating that fault was persisting in the line.
- xxi) Alongwith the undertaking, a report of testing of protection systems indicating their healthiness is to be enclosed.
- xxii) Annexure A4 is being marked same as Annexure B3 and not being furnished in original in most cases

- xxiii) Annexure A5 is being marked same as Annexure B4 and not being furnished in original in most cases
- xxiv) The undertaking in respect of statutory clearances is not being furnished alongwith applications in some cases.

*(Example =>In the application regarding test charging of 220/132 kV, 200 MVA ICT-II at Bishwanath Chariali (PG) substation submitted to NERLDC vide letter dated 27.05.2015, the undertaking regarding Statutory clearances was not provided.)*

- xxv) The Charging instructions from CTU are not being furnished in many cases

*(Example =>In the application regarding test charging of 220/132 kV, 200 MVA ICT-II at Bishwanath Chariali (PG) substation submitted vide letter dated 27.05.2015, the charging instructions from CTU was not provided.)*

- xxvi) Technical parameters of the transmission element required for modelling are not being furnished in many cases

*(Example => In the application regarding test charging of 220/132 kV, 200 MVA ICT-II at Bishwanath Chariali (PG) substation submitted to NERLDC vide letter dated 27.05.2015, the technical parameters of the line required for modelling were not provided.)*

- xxvii) The information regarding availability of Line Reactors & Approval for changes in the approved scheme are not being indicated properly in many cases

- xxviii) In case of new generating units that are to be synchronized to the Grid, the complete set of Technical data as furnished to CTU as part of the connection agreement with CTU is to be submitted for the purpose of modelling. Besides those, it will be required to furnish data required for modelling of Unit, Exciter, Governor, Excitation Limiters, PSS and the Capability curve & V-curves of units.

***Members may like to deliberate.***

## **A.2 Request for successful trial operation certificate:**

NERLDC requested that while applying for the Trial Operation certificate after completion of successful trial run, the following are required to be furnished:

- 1) Values of concerned line flows and local voltages from SCADA just before and after charging of the element.
- 2) SEM readings viz. outputs corresponding to the trial run

- 3) Output of Disturbance Recorders / Event Loggers to indicate the trial run operations.

Further, it is seen that in many cases, these data are not being furnished.

Also, outputs of Disturbance Recorders must be in COMTRADE formats only.

***Members may like to discuss.***

### **A.3 Implementation of 3-phase Auto Reclosure Scheme in all lines associated with Khandong and Kopili HEP:**

For reliable operation of Power system it is required to implement 3-Phase Auto Reclosure Scheme in all the 132kV lines associated with Kopili and Khandong HEP of NEEPCO. The lists of such lines are:

- a) 132kV Khandong – Umrangso - Halflong
- b) 132kV Kopili – Khandong #1

During 34<sup>th</sup> PCC meeting, DGM (AM), NERTS informed that approval for shifting of PLCC Panels has already been given to AEGCL by POWERGRID for establishment of Khandong-Umrangso-Haflong Link necessary implementation of Auto Reclose Scheme but, the same has not yet been done by AEGCL.

AGM, AEGCL informed that he will take up the matter with their site engineer and find out the exact position. Further, he informed that PLCC is not in place on above line. Also he informed that the existing panel will be shifted from Halflong end and put it in Umrangso end. Regarding Kopili end, he mentioned that bays belong to NEEPCO and requested them to intimate the status on this matter.

Sr. Manager, NEEPCO also informed that the scheme at Khandong end of NEEPCO is ready and requested Assam to comply the same at their Umrangso end.

DGM (AM) stated that without PLCC, the AR Scheme cannot be implemented and requested Assam to ensure that all equipments should be made available to implement the scheme at the earliest.

After detailed deliberation, the sub-committee requested NERPC to conduct a special meeting along with other issues so that the matter can be resolved at the earliest. The Sub-committee also suggested that representative from Communication wing of Assam has to attend the above meeting. NERPC agreed to host the above meeting soon and the date will be intimated soon.

***Members may like to discuss.***

#### A.4 Major Oscillations in NER:

DGM (SO-II), NERLDC informed that during the month of May, 2015, there were persistent Low Frequency Oscillations (LFOs) in NER Grid which led to tripping of some generators in the Southern part of NER Grid around Khliehriat (Meghalaya) system.

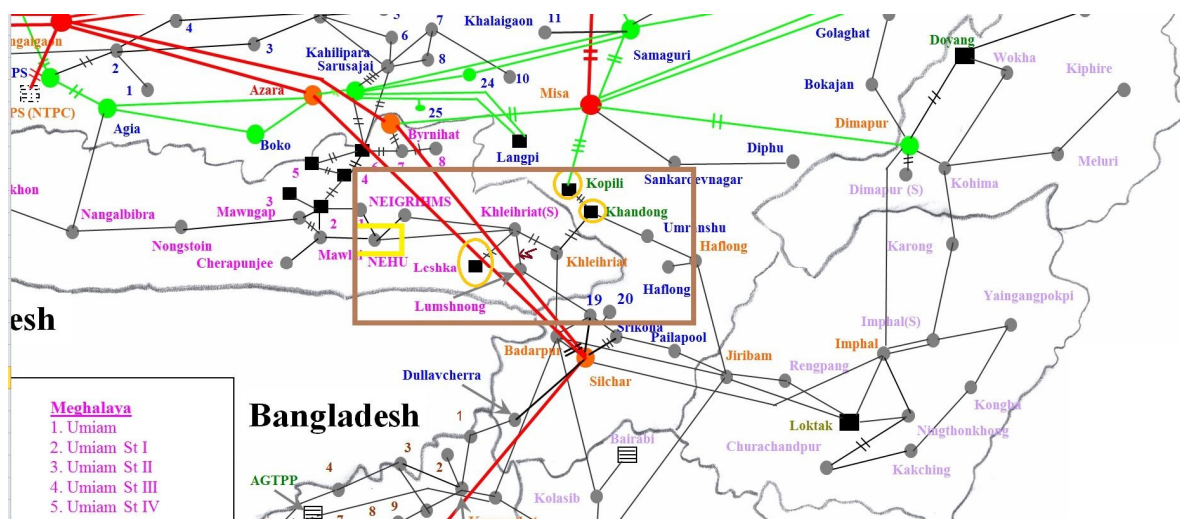
The oscillations occurred from 03:38:56.080 Hrs to 03:41:37.040 Hrs (around 3 minutes) and from around 03:42:33.440 Hrs to around 03:45:24.480 Hrs (around 3 minutes) on 29.05.15, & from around 22:56:30 Hrs to 22:58:15 Hrs on 31st May 2015.

In both the incidents, Low Frequency Modes in the system around 1.2 Hz and its 2nd Harmonic mode around 2.4 Hz was observed in the system, and the modes have Poor / Negative damping.

In the 29th May incident, the oscillations started after fault in Meghalaya system leading to tripping of 132 kV Khliehriat – Lumshnong line followed by oscillations in Leshka HEP of MePGCL and Khandong HEP of NEEPCO. There was tripping of Leshka units and Khandong units due to jerk in the system. The oscillations later continued between units of Kopili HEP and Kopili St-II HEP.

In the 31st May incident, the oscillations started again after fault in Meghalaya system leading to tripping of 132 kV Khliehriat (PG) – Khliehriat (MePTCL) I & II lines followed by oscillations in Leshka HPP of MePGCL and Khandong HEP of NEEPCO. There was tripping of Leshka units, Umiyam St IV units and Khandong unit due to jerk in the system. The oscillations later continued between units of Kopili HEP and Kopili St-II HEP.

The Zone of oscillations in NER Grid is indicated below:



Oscillations were more prominent in Active power/ Frequency than in Voltage. It thus suggests a lack of system stability as a whole. To address this issue, PSS

(Power System Stabilizers) may be installed in Myndtu Leshka Power Station to enhance stability of the system.

During 34<sup>th</sup> PCC meeting, DGM (SO-II), NERLDC gave presentation on occurrences of Low Frequency Oscillation (LFO) due to tripping of some elements in Southern part of NER Grid. It was shown that LFO was persisted longer duration due to poor/negative damping characteristics and machines of Khandong & Leshka tripped. They expressed the seriousness of these oscillations as longer duration of oscillation may trip larger size machine and as a result wide spread disturbance may occur due to this type of incidence. They requested to the sub-committee to take the matter to the concerned authority.

After detailed deliberation, the sub-committee requested NERPC to conduct a special meeting on above issue and directed that all concerned person from Distribution, Generation & Transmission wings to attend the meeting and to analyze the exact cause of oscillation. NERPC agreed and inform that meeting will be convened soon and the date will be intimated shortly.

***Members may like to discuss.***

#### **A.5 Implementation of the recommendations of the Protection Audit**

During 32<sup>nd</sup> PCC meeting, the sub-committee had also requested NERPC to hold the special meeting to finalize the standard scheduling of O&M comprising of NERLDC, NERTS, NERPC, NEEPCO, Assam & Meghalaya etc., at the earliest so that the best O&M practices can be evolved in the region.

During 34<sup>th</sup> PCC meeting, SE(O) NERPC informed that since there were other issues to be discussed along with above agenda, the meeting could not be held in May, 2015. The above meeting as suggested by the Sub-committee will be conducted soon by NERPC.

<b><i>Status of submission of data related to Third Party Protection Audit</i></b>			
<b><i>Name of Constituent</i></b>	<b><i>As per format of Task Force</i></b>	<b><i>As per format of NERPC</i></b>	<b><i>Remarks</i></b>
<b><i>DoP, Ar. Pradesh</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>AEGCL</i></b>	<i>Yes (only checklist submitted)</i>	<i>Not submitted</i>	<i>Details of Protection not submitted</i>
<b><i>MSPCL</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>MePTCL</i></b>	<i>Not submitted</i>	<i>Yes (Khliehriat, Mawphlang, EPIP I, Mawlai, NEHU,</i>	<i>Leshka, Umiam Stg I, Umiam Stg II, Umiam Stg</i>



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		<i>NEIGRIHMS, Rongkhon, Sohra, EPIP II, Lumshnong, Nangalbibra, Nongstoin &amp; Umiam)</i>	<i>III, Umiam Stg IV, Umtru not submitted. Private owned S/S not submitted.</i>
<b><i>P&amp;E Deptt, Mizoram</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>DoP, Nagaland</i></b>	<i>Not submitted</i>	<i>Yes (Kohima, Wokha, Meluri, Kiphire, Dimapur, Mokokchung)</i>	
<b><i>TSECL</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>POWERGRID</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>NEEPCO</i></b>	<i>Not submitted</i>	<i>Yes (Khandong &amp; Kopili)</i>	<i>Ranganadi, Doyang, AGBPP, AGTPP not submitted</i>
<b><i>NTPC</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>NHPC</i></b>	<i>Not submitted</i>	<i>Not submitted</i>	
<b><i>OTPC</i></b>	<i>Yes</i>	<i>Not submitted</i>	

The sub-committee requested all the remaining constituents who have not furnished the data both as per check list of Task Force in Annexure – A.2 (II) and also, as per the format of NERPC in Annexure A.2 (I) above at the earliest.

***Constituents may kindly intimate the status.***

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