North Eastern Regional Power Committee

Agenda
For
41st PCC Sub-Committee Meeting

Time of meeting : 14:00 Hrs.

Date of meeting : 07th January, 2016 (Thursday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 40th MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.

The minutes of 40th meeting of Protection Sub-committee held on 17th December, 2015 at Guwahati were circulated vide letter No. NERPC/SE (O)/PCC/2015/4520-4555 dated 31st December, 2015.

No comments/observations were received from the constituents, the Sub-committee may kindly confirm the minutes of 40th PCCM of NERPC.

ITEMS FOR DISCUSSION

A.1 Implementation of 3-Phase Auto Reclosure Scheme of Radially fed 132kV Lines connected to Ranganadi HEP:

At present, the power flows to Nirjuli, Gohpur and Ziro radially from Ranganadi HEP and any transient fault in line causes undesirable outages. Hence, to avoid outages during transient fault it is essential to implement 3- Phase Dead Line charging of following 132kV Lines.

a) 132kV Ranganadi – Nirjuli Line (Dead Line Charging at RHEP)
b) 132kV Nirjuli – Gohpur Line (Dead Line Charging at Nirjuli)
c) 132kV Ranganadi – Ziro Line (Dead Line Charging at RHEP)

During 40th PCC meeting, Sr. Manager (O&M), NEEPCO once again informed the forum that material has already reached at site and installation would be completed by 31/12/2015 as mentioned earlier. He requested NERTS to help them in relay coordination during implementation of the scheme. NERTS agreed.

NEEPCO/Ar. Pradesh/NERTS may kindly intimate the status.

A.2 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 40th PCC meeting, AEGCL informed the forum that they have already written a letter to SAMA Power to carry out the work through ERL but so far they have not revert back. AEGCL stated that they will take up the matter once again.

The Sub-committee directed that a joint visit for carrier inter-trip signaling check to be conducted by POWERGRID & AEGCL at a suitable date and AEGCL should intimate to POWERGRID & NEEPCO 3 days in advance and the same should be completed before the next PCC meeting.

NEEPCO, NERTS & Assam may kindly intimate the status.

A.3 Implementation of the recommendations of the Protection Audit:

As per Sl. no 9.1.1 & 9.1.4 of Report on Enquiry Committee on Grid Disturbance in Northern Region on 30th July 2012 and in Northern, Eastern & North-Eastern Region on 31st July 2012, thorough Third Party protection audit needs to be carried out periodically along with independent audit of Fault Recording Instruments.

The status as intimated by NERLDC during 40th PCC meeting is given below:

Status of submission of data related to Third Party Protection Audit			
Name of Constituent	***As per format of Task Force***	***As per format of NERPC***	***Remarks***
DoP, Ar. Pradesh	***Not submitted***	***Submitted***	***Not updated as Ar. Pradesh was absent***
AEGCL	*Yes (only checklist submitted)*	***21 SS has been submitted during meeting.***	***Balance By 30.12.2015***
TSECL	***Not submitted***	***Submitted***	***By 31.12.2015***
NEEPCO	***AGTPP Not submitted***	***AGTPP Not submitted***	***By 31.12.2015***

After detailed deliberation, the Sub-committee had decided that those who have not submitted the data as per format of Task Force in Annexure A.2 (II) & also, as per the format of NERPC in Annexure A.2 (i) for 3rd Party Protection Audit are requested to furnish these data **by 31.12.15 positively**.

Constituents/NERLDC may kindly intimate the status.

A.4 Status of R&M Implementation of NER from PSDF:

The Sub-committee requested all constituents to complete the proactive actions like taking Board's approval, floating of NITs, selection of bidders etc., as directed by the Hon'ble CERC.

During the meeting held on 11.12.2015 at Delhi under the Chairmanship CEA, the forum expressed concerned about delay in disbursement of fund and execution of R&M works**.**

Constituents may kindly intimate the status.

A.5 Installation of PLCC Panel and Commissioning of SPAR in Loktak – Ningthoukhong 132kV Feeder (MSPCL):

NHPC informed that keeping in view of Power Evacuation, Loktak – Ningthoukhong 132 kV Feeder (MSPCL) is very essential feeder for Loktak Power Station. Since No PLCC Panel has been installed in this feeder, therefore no SPAR (Single Pole Auto Reclosure) has been installed. It is well known that maximum nature of fault occurred in the feeders are temporary in nature.

In order to increase the reliability of this feeder, MSPCL is requested to install PLCC Panels at the both ends so that necessary SPAR can be commissioned.

During 40th PCC meeting, MSPCL informed the forum that it would not be possible to complete the R&M works within 30/11/2015 and the same will be completed by 31.03.2016.

SE(O), NERPC informed that as per directive of Hon'ble CERC, MSPCL has to complete the R&M associated with Substations of Manipur within November, 2016. He requested MSPCL to adhere to the direction of CERC and complete the R&M works within the stipulated time. MSPCL representatives informed that they will take up the matter with the Competent Authority and inform about the CERC Order accordingly.

MSPCL may kindly intimate the status.

A.6 Implementation of 3-Ph Auto Reclosure in 132 kV Loktak-Jiribam, (PG):

NERTS informed that on every tripping of 132 kV Loktak-Jiribam (PG) line Auto Reclosure is successful from Loktak end but, at Jiribam (PG) end the CB is of gang (3 pole) operated. Accordingly, NHPC may implement 3-Ph Auto Reclosure with check sync at Loktak end with 1.40 sec dead time and Jiribam (PG) end dead line charging with 0.80 sec dead time.

During 40th PCC meeting, NHPC disagreed for support from POWERGRID. Subsequently, after detailed deliberation it was agreed that representative of POWERGRID will visit LHEP on receipt of official communication from NHPC for implementation of the scheme.

NHPC/POWERGRID may kindly intimate the current status.

A.7 Grid Incidences during November, 2015:

The following numbers of Grid Disturbances (GD) occurred during the period **w.e.f 1st December, 2015 to 30th December, 2015** :-

Sl No	Control Area	Grid Disturbance in nos.	
		1st December, 2015 to 30th December, 2015	1st January, 2015 to 30th December, 2015
1	Palatana	0	7
2	AGBPP	0	1
3	AGTPP	0	8
4	Ranganadi	0	4
5	Kopili	0	2
6	Khandong	0	3
7	Doyang	0	5
8	Loktak	0	10
9	Arunachal Pradesh	3	77
10	Assam	1	77
11	Manipur	4	68
12	Meghalaya	0	52
13	Mizoram	0	14
14	Nagaland	2	35
15	Tripura	0	9

Sl No	Category of GD	Grid Disturbance in nos.	
		1st December, 2015 to 30th December, 2015	1st January, 2015 to 30th December, 2015
1	GD 1	10	238
2	GD 2	0	3
3	GD 3	0	1
4	GD 4	0	1
5	GD 5	0	1
	Total	**10**	**244**

This is for information to the members. Remedial actions are to taken by the concerned power utilities of NER

A.8 Root cause analysis of tripping in Southern Part of NER on 08.08.2015 and 24.09.2015 & Remedial Measures:

Remedial Measures suggested by sub group members at the meeting held at NERPC on 29.09.15

The islanding scheme of AGTPP with Tripura system is to be reviewed so as to ensure successful islanding in such cases of isolation in NER Grid.

During 38th PCC meeting, the Sub-Committee decided that in addition to the recommendations of the sub-group the following should be implemented ASAP:

1. Modification to SPS-1 at Palatana: Unit-I and II to be put in AND logic so that SPS-1 would operate.

During 40th PCC meeting, OTPC informed that the work has already been completed.

DGM (SO-II), NERLDC stated that on 15.12.2015, SPS 1 was triggered when only one module is in operation which is not correct. The SPS 1 should be triggered when both the modules are in service. He requested OTPC to check the scheme and do the necessary logic correction at the earliest.

Action: POWERGRID & OTPC.

Root Cause Analysis & Remedial Measures by sub group members at the meeting held at NERPC on 18.11.15 regarding Non-Tripping of Azara-Bongaigoan as raised by AEGCL:

Cause: As per information given by POWERGRID, the incidences above are due to high arcing faults.

Remedial Measures:

a. Explore to increase the resistive reach of Z-2 and Z-3.

b. DEF characteristics should be IDMT in place of definite time with 1100msec opening time at maximum fault level

c. Further, Z-3 setting should be 1000msec and necessary co-ordination is required for associated lines.

d. NERPC Secretariat may extend help wherever necessary Administrative coordination is required for clearance of faults.

During 40th PCC meeting, POWERGRID requested AEGCL to implement Zone 3 setting as per the recommendation of task force. Also DEF delay setting should be 100 ms more than Zone 3 setting with IDMT characteristics. AEGCL proposed for review of Zone 3 setting as recommended by task force. However, POWERGRID opined that there is no scope for review as it is the matter for implementation.

AEGCL insisted for joint meeting for which POWERGRID sought agenda from AEGCL.

The Sub-committee requested NERPC to invite AEGCL during the monthly Sub-committee meeting to discuss about various grid incidences being held every month by NERPC along with above issues of Assam.

NERPC may kindly intimate the status.

A.9 Protection System in Tripura, OTPC & POWERGRID System for reliable power supply to Bangladesh:

It is understood that Tripura is going to sell power to Bangladesh through 132 kV Surjamaninagar (TSECL) – Comilla (Bangladesh) D/C lines from December, 2015.

In view of the above, TSECL, OTPC & POWERGRID are requested to provide the status of protection system in their respective substations for providing reliable power supply to Bangladesh.

During 40th PCC meeting, SE(O), NERPC stated that the main concern is the protection within Tripura system. As it is learnt that no primary protection system is in place in many of their important lines and any delayed tripping on their system may affect the power supply to Bangladesh. Further, he stated that the issue was brought to the notice of Tripura in many occasions but no positive response was made from Tripura side.

After detailed deliberation, the Sub-committee requested NERPC to write letter to highest authority of Tripura with a copy to MoP in this regard.

Action: NERPC & TSECL.

A.10 Protection System in 400kV BTPS Line I&II:

This has reference to the erection/commissioning of differential protection for 400KV BTPS Line1&2 between NTPC and PGCIL substation.

Our preparedness for COD of Unit#1 has already started and would take place any day in January, 2016. Once COD is completed the plant will go for regular generation and the following problems are likely to be faced.

***Unit shutdown if required for establishment of FO link and other related activities may not be available.**

*** In absence of line differential protection the reliability of both NTPC Unit and N-E grid of PGCIL may get jeopardized**.

Hence, it is requested that PGCIL may please provide us the following information.

1. The present status of receipt/delivery of three no Alstom make relays. (Model. P543916G6M0760M)
2. The present status of receipt/delivery of FO channel with terminal equipment.
3. The present status of implementation of modified scheme at PGCIL end for Schneider make Micom P543 (NTPC procured).
4. Line shutdown requirement (if applicable) for establishment of FO link for commissioning of the differential scheme.
5. Action plan for establishment of FO channel with terminal equipment and commissioning of differential protection.

Members may like to discuss so that differential protection of both the lines can be put in service before COD of our first unit.

A.11 Root cause analysis of tripping during December, 2015:

A. Disturbance in Manipur System.

a. At **1121 Hrs on 01.12.15**, due to tripping of 132 kV Imphal (PG)- Imphal (MSPCL) I & II lines **(Line 1: Imphal (PG)- Earth Fault, Y-phase & Imphal (MSPCL)- Not Furnished and Line 2: Imphal (PG)- Earth Fault, Y-phase & Imphal (MSPCL)- Not Furnished),** power supply to Capital area of Manipur interrupted.

Load loss: 52 MW in Manipur.

b. At **1207 Hrs on 10.12.15**, due to tripping of 132 kV Imphal (PG)- Imphal (MSPCL) I & II lines **(Line 1: Imphal (PG)- Earth Fault & Imphal (MSPCL)- Not Furnished and Line 2: Imphal (PG)- Earth Fault & Imphal (MSPCL)- Not Furnished),** power supply to Capital area of Manipur interrupted.

Load loss: 48 MW in Manipur.

c. At **1340 Hrs on 20.12.15**, due to tripping of 132 kV Loktak – Ningthoukhong **(Loktak- Not furnished and Ningthoukhong- Not furnished),** line power supply to Ningthoukhong area of Manipur interrupted. 132 kV Imphal(PG)-Ningthoukhong line & 132 kV Kakching - Kongba line was kept open for system constraint.

Load loss: 40 MW in Manipur.

d. At **1456 Hrs on 20.12.15**, due to tripping of 132 kV Loktak – Ningthoukhong **(Loktak- Not furnished and Ningthoukhong- Not furnished),** line power supply to Ningthoukhong area of Manipur interrupted. 132 kV Imphal(PG)-Ningthoukhong line & 132 kV Kakching - Kongba line was kept open for system constraint.

Load loss: 23 MW in Manipur.

Category as per CEA Standards: GD-I

Analysis of events:

MSPCL, NHPC & NERTS, POWERGRID may elaborate.

B. Disturbance in Arunachal Pradesh system:

a. At 1346 Hrs on 05.12.15, 132 kV Ranganadi - Lekhi **(Ranganadi- Not furnished and Lekhi- Not furnished)** line tripped. Due to tripping of this element, Lekhi & Capital area of Arunachal Pradesh separated from rest of NER Grid and subsequently collapsed due to loss of infeed.

Load loss: 40 MW in Arunachal Pradesh

b. At 1425 Hrs on 10.12.15, 132 kV Lekhi - Nirjuli **(Nirjuli- Earth Fault and Lekhi- Not furnished)** line tripped. Due to tripping of this element, Nirjuli area of Arunachal Pradesh separated from rest of NER Grid and subsequently collapsed due to loss of infeed.

Load loss: 14 MW in Arunachal Pradesh

c. At 1245 Hrs on 19.12.15, 132 kV Ranganadi - Ziro **(Ranganadi- DP, Z1, R-Y-E and Ziro- No tripping)** line tripped. Due to tripping of this element, Ziro area of Arunachal Pradesh separated from rest of NER Grid and subsequently collapsed due to loss of infeed.

Load loss: 12 MW in Arunachal Pradesh

Category as per CEA Standards: GD-I

Analysis of Events:

DoP, Arunachal Pradesh, NEEPCO & NERTS, POWERGRID may elaborate.

C. Disturbance in Nagaland system:

a. At 1430 Hrs 03.12.15, 132 kV Dimapur(PG) - Kohima **(Dimapur(PG)- DP, Z-1, B-E and Kohima-No tripping)** line tripped. Due to tripping of this element, Kohima (Capital) area of Nagaland separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Load loss: 32 MW in Nagaland
Generation Loss: 8 MW in Nagaland (Likimro generation)

b. At 0200 Hrs 04.12.15, 132 kV Dimapur(PG) - Kohima **(Dimapur(PG)- DP, Z-1, B-E and Kohima-No tripping)** line tripped. Due to tripping of this element, Kohima (Capital) area of Nagaland separated from rest of NER Grid and subsequently collapsed due to no source in this area.

Load loss: 21 MW in Nagaland
Generation Loss: 14 MW in Nagaland (Likimro generation)

Category as per CEA Standards: GD-I

DoP Nagaland & NERTS, POWERGRID may elaborate.

D. Tripping of Inter-Regional Lines:

a. **At 1145 Hrs on 08.12.2015,** Pole-I of +/- 800 kV BiswanthChariali – Agra line tripped.

b. **At 1628 Hrs on 08.12.2015,** Pole-I of +/- 800 kV BiswanthChariali – Agra line tripped.

c. **At 1749 Hrs on 14.12.2015,** Pole-I of +/- 800 kV BiswanthChariali – Agra line tripped.

d. **At 2309 Hrs on 14.12.2015,** Pole-I of +/- 800 kV BiswanthChariali – Agra line tripped.

e. **At 2249 Hrs on 16.12.2015,** Pole-I of +/- 800 kV BiswanthChariali – Agra line tripped.

f. **At 2118 Hrs on 18.12.2015,** Pole-I of +/- 800 kV BiswanthChariali – Agra line tripped.

NERTS, POWERGRID may elaborate.

E. Tripping of Generating Units

a. **At 1753 Hrs on 03.12.2015,** Unit # 2 and 3 of Ranganadi HEP tripped due to operation of Bus-Bar Protection at Ranganadi. **(Generation Loss = 265 MW)**

b. **At 1817 Hrs on 13.12.2015,** Units # 2, 4, 5 & 8 of AGBPP tripped due to tripping of Gas Compressor-II **(Generation Loss = 101 MW)**

c. **At 0732 Hrs on 15.12.2015,** STG-I of Palatana tripped followed by tripping of GTG-I at **0800 Hrs on 15.12.2015. (Generation Loss = 156 MW)**

d. **At 1050 Hrs on 15.12.2015,** Units # 2, 3, 4 of AGBPP tripped due to tripping of Gas Compressor-II **(Generation Loss = 90 MW)**

e. **At 0628 Hrs on 19.12.2015,** STG-I of Palatana tripped followed by tripping of GTG-I at **0652 Hrs on 15.12.2015. (Generation Loss = 174 MW)**

f. **At 0227 Hrs on 18.12.2015,** Units # 1, 2, 3, 4, 6, 8 & 9 of AGBPP tripped due to tripping of all Gas Compressors **(Generation Loss = 216 MW)**

g. **At 2310 Hrs on 21.12.2015,** Units # 2, 3, 4, 8 of AGBPP tripped due to tripping of Gas Compressor - III **(Generation Loss = 122 MW)**

NEEEPCO & OTPC may elaborate

A.12 Completion of activities within specified time as per directives of CERC vide order in Petition No. 113/MP/2014

As per order in Petition No. 113/MP/2014 of CERC, CERC directed to power utilities and organizations of NER to complete the activities within specified time/submit monthly reports as per provisions of IEGC & Grid Standards of CEA etc. List of actions/activities/reports to be completed within specified time as per directives of CERC vide order in Petition No. 113/MP/2014 attached at - **Annexure II.**

Power utilities and organizations of NER are requested to send monthly status report of activities related to order in Petition No. 113/MP/2014 to NERPC & NERLDC.

During 40th PCC meeting, the sub-committee had requested all power utilities and organizations of NER to comply all provisions of IEGC & Grid Standards of CEA & send monthly status report of activities related to order in Petition No. 113/MP/2014 to NERPC & NERLDC.

The concerned utilities may kindly intimate the status.

Any other item:

Date and Venue of next PCC

It is proposed to hold the 42nd PCC meeting of NERPC on second week of February, 2016. The exact venue will be intimated in due course.

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