North Eastern Regional Power Committee

Agenda
For
26th PCC Sub-Committee Meeting

Time of meeting : 14:00 Hrs.

Date of meeting : 15th October, 2014 (Wednesday)

Venue : "Hotel Nandan", Guwahati.

A. CONFIRMATION OF MINUTES

CONFIRMATION OF MINUTES OF 25th MEETING OF PROTECTION SUB-COMMITTEE OF NERPC.

The minutes of 25th meeting of Protection Sub-committee held on 09th September, 2014 at Guwahati were circulated vide letter No. NERPC/SE (O)/OCC/2014/2018-2053 dated 22nd September, 2014.

No observations or comments were received from the constituents. The Sub-committee may discuss & confirm minutes of 25th PCCM of NERPC.

ITEMS FOR DISCUSSION

A.1 Implementation of 3-phase Auto Reclosure Scheme in all lines connected to 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 connected to Kopili and Khandong HEP of NEEPCO. The lists of such lines are:

a) 132kV Khliehriat – Khandong # 1
b) 132kV Khliehriat – Khandong # 2
c) 132kV Haflong – Khandong
d) 132kV Kopili – Khandong # 1
e) 132kV Kopili – Khandong # 2

During 25th PCC meeting, NEEPCO representatives informed the members that the scheme is agreed in principle but the breakers need replacement. The breakers have been procured accordingly and they are expected to be replaced by December 2014 / January 2015 by obtaining shut down.

It was discussed that charging of any feeder at Khandong through transfer bus is not possible because of lower capacity of main bus conductor. Strengthening of Khandong bus has already been discussed in earlier RPC forum. NEEPCO will intimate the status by next OCC/PCC & expedite thereof.

POWERGRID intimated that meanwhile 3phase auto-reclosure will be implemented for the circuits given below:

1) 132kV Khandong –Khliehriat-II
2) 132kV Kopili-Khandong-II where both end bays are owned by POWERGRID and relays and CBs are suitable for TPAR

NEEPCO may intimate the latest status and committee may like to discuss.

A.2 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 25th PCC meeting, NEEPCO representatives informed the members that wiring problems are experienced in the above lines. Design cell of NEEPCO has been intimated for rectification of the same and response is awaited. Proposal for implementation of the scheme is to be finalized by Engineering Cell and exact status may be intimated in next OCC / PCC meeting.

DGM, NERTS informed the members that 3-Phase Auto Reclosure scheme with dead line charging at Nirjuli is already implemented.

NEEPCO may intimate the latest status and committee may like to discuss.

A.3 Implementation of islanding scheme in NER

During the 94thOCC meeting, the committee had decided the following islanding scheme and associated frequencies levels for creation of islands in NER:

SN	Islanding Scheme	Lines required to be opened	UFR Location	Implementing Agency
1	**ISLAND AT 48.80 Hz with 5 Sec delay:** Island comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and loads of Upper Assam system & Deomali area (Ar. Pradesh) **[Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]**	(a) 220 kV New Mariani (PG) – AGBPP	UFR-1 [At New Mariani (PG)]	**PGCIL**
		(b) 220 kV Mariani – Misa	UFR-2 [At Mariani, Samaguri of AEGCL]	**AEGCL**
		(c) 220 kV Mariani – Samaguri		
		(d) 132 kV Mokokchung – Mariani		
		(e) 132 kV Dimapur (PG) – Bokajan	UFR-3 [At Dimapur (PG)]	**PGCIL**
		(f) Generators to be desynchronized for reduction of generation [if Generation > Load in the islanded pocket]		
		(g) De-synchronization / isolation of one GT and one ST from each of two modules of AGBPP, which are in operation, leading to reduction of generation of about 80-90 MW [i.e each module will contribute to reduction of about 40-45 MW (GT:30MW+ST:15MW)].	At AGBPP [UFRs of line bays & Generator to be used]	**NEEPCO**
		(h) Lines required to be opened for load shedding of 30MW (off-peak) and 50MW (peak) [if load > generation in the islanded pocket]		
		(i) 132kV Tinsukia – Ledo S/C line (at 48.7Hz instantaneous).	UFR [At Tinsukia]	**AEGCL**
		(j) 66kV Tinsukia – Rupai S/C line (at 48.6Hz instantaneous)		**AEGCL**
		(k) 132kV Jorhat – Bokakhat line (at 48.5Hz instantaneous)	UFR [At Jorahat / Bokakhat]	**AEGCL**
2	**ISLAND AT 48.50 Hz with 5 Sec delay :** Island comprising of generating units of	132 kV Palatana – Udaipur	UFR-1 [At Palatana]	**OTPC**
		132 kV Palatana – Surjamani Nagar		

	AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) & Gumati (Hydro) and loads of Tripura system & Dullavcherra area (Assam) **[Total Generation: 150-160MW and load: 110MW (off-peak) &170-180MW (peak)]**	132 kV Silchar – Dullavcherra	UFR-2 [At Silchar]	**PGCIL**
		132 kV AGTPP – Kumarghat	UFR-3 [At Kumarghat]	**PGCIL**
		132 kV P K Bari – Kumarghat		
3	**ISLAND AT 47.90 Hz:** Isolation of NER from NEW grid at ER-NER boundary with rest of the generation and load of NER	To be decided after system study		

The following officers were nominated for the meeting of the subgroup:

Assam: Sh. Gunajit Bhuyan, AGM (MRT) & Sh. Ashutosh Bhattacharji, Mgr
Meghalaya: Sh. F.E. Kharshiing, SE, SLDC & Sh. H. Shangpliang, EE (MRT)
PGCIL: Sh. P. Kanungo, DGM, Sh. M. Madhavan, Mgr & Sh. Supriya Paul, Er
NEEPCO: Sh. Tanya Taji, Sr. Mgr & Sh. Jaypal Roy, Mgr.
NERLDC: Sh. P.P. Bandapodhyay, DGM & Sh. A. Mullick, CM
NERPC: Sh. B. Lyngkhoi, SE(O) and Sh. S.M. Jha, EE(O)
OTPC: Sh. S. R. Das, Mgr (E)

In the meeting of Operation and Protection sub-group, it was brought to the notice that most of UFRs associated with two islanding schemes not operated and it was decided to reduce the time delay setting of UFR to 2 sec (in place of 5 sec). Assam had informed that there is some change in load connected with NTPS and subgroup had requested Assam to provide details of connected load. Assam & NEEPCO was also requested to intimate about the low frequency setting for tripping of Gas based Generators at NTPS (of Assam), at AGBPP & AGTPP (of NEEPCO) and to intimate frequency at which machines at NTPS, AGBPP & AGTPP tripped on 19-03-2014 so that the matter can be discussed further.

During the meeting the DGM, POWERGRID suggested to reduce the time delay setting of UFR to 500ms instead of 2 secs as proposed in last subgroup meeting. The subcommittee felt that following information should be collected before deciding about the final setting of UFRs.

During 24th PCC meeting, the issue has been discussed in thread bear and the status is as given below:

1. <u>ISLAND AT 48.80 Hz with 5 Sec delay</u>:

Island comprising of generating units of AGBPP (Gas), NTPS (Gas) & LTPS (Gas) and loads of Upper Assam system & Deomali area (Ar. Pradesh)

[Total Generation: 380-400MW and load: 200MW (off peak)-300MW (peak)]

A. POWERGRID, NERTS has to implement the revised time setting of UFR from existing 5 Secs to 500 ms for the following lines:

a) 220 kV New Mariani (PG) – AGBPP, at New Mariani (PG)

DGM, NERTS informed that the UFR will be installed by mid-week of September 2014. Relay setting of the same will be delayed by 500 ms.

B. AEGCL has to implement the revised time setting of UFR from existing 5 Sec to 500 ms for the following lines:

b) 220 kV Mariani – Misa, at Mariani
c) 220 kV Mariani – Samaguri, at Samaguri
d) 132 kV Mokokchung – Mariani, at Mariani

On request of AEGCL, DGM, NERTS agreed to help for implementation of revised time setting of UFR from existing 5 Sec to 500 ms at Mariani by September 2014.

(e) 132 kV Dimapur (PG) – Bokajan, at Dimapur (PG)

DGM, NERTS informed that the UFR will be installed by mid-week of September 2014. Relay setting of the same will be delayed by 500 ms.

C. NEEPCO has to implement the revised time setting of UFR from existing 5 Sec to 500 ms for the following generation:

(f) Generators to be desynchronized for reduction of generation [if Generation Load in the islanded pocket]

(g) De-synchronization / isolation of one GT and one ST from each of two modules of AGBPP, which are in operation, leading to reduction of generation of about 80-90 MW [i.e each module will contribute to reduction of about 40-45 MW (GT:30MW+ST:15MW)]

The scheme is proposed to be implemented at AGBPP utilizing UFRs of line bays & Generator.

Sr. Mgr., NEEPCO stated that matter will be looked into and the status would be intimated in the next PCC meeting.

(h) Lines required to be opened for load shedding of 30MW (off-peak) and 50MW (peak) [if load > generation in the islanded pocket]

(i) 132kV Tinsukia – Ledo S/C line (at 48.7Hz instantaneous) at Tinsukia

(j) 66kV Tinsukia – Rupai S/C line (at 48.6Hz instantaneous) at Tinsukia

(k) 132kV Jorhat – Bokakhat line (at 48.5Hz instantaneous) at Jorhat/Bokakhat

The status as discussed in the 25th PCC meeting is given below:

The above settings are existing setting based on frequency discrimination. Representatives of AEGCL opined some delay in tripping based on time discrimination and proposed to include 200ms and 100ms delay for 132kV Tinsukia – Ledo S/C line and 66kV Tinsukia – Ledo S/C line respectively. DGM, NERTS stated that once the island is formed immediate load generation balancing is essential for survival of the island and so the additional delay will be detrimental as delay by frequency discrimination already exists. He further informed that NERLDC as system operator may study and suggest the setting for above three lines.

2. <u>ISLAND AT 48.50 Hz with 5 Sec delay</u> :

Island comprising of generating units of AGTPP (Gas), generating units at Baramura (Gas), Rokhia (Gas) & Gumati (Hydro) and loads of Tripura system & Dullavcherra area (Assam)

[Total Generation: 150-160MW and load: 110MW (off-peak) &170-180MW (peak)]

A. POWERGRID, NERTS has to implement the revised time setting of UFR from existing 5 Sec to 500 ms for the following lines:

(a) 132 kV Silchar – Dullavcherra, at Silchar
(b) 132 kV P.K. Bari – Kumarghat, at Kumarghat
(c) 132 kV AGTPP – Kumarghat, at Kumarghat

DGM, NERTS informed that the revised timing will be implemented by mid-week of September 2014.

NERTS may intimate the latest status.

B. OTPC has to implement the revised time setting of UFR from existing 5 Sec to 500 ms for the following lines:

(d) 132 kV Palatana – Udaipur, at Pallatana
(e) 132 kV Palatana – Surjamani Nagar, at Pallatana

OTPC agreed to revise the timing by mid-week of September 2014.

OTPC may intimate the latest status.

3. ISLAND AT 47.90 Hz:

Isolation of NER from NEW grid at ER-NER boundary with rest of the generation and load of NER.

After detailed deliberation, the Sub-committee agreed to have a system study group to study the issues of Islanding Scheme in detail. The system study group will also finalize the settings required for Palatana SPS Case II & III.

Study group may kindly intimate the status of meeting.

A.4 Testing of protective relays of downstream system of 132kV Khliehriat (Me.ECL) Sub Station:

All downstream faults of 132kV Khliehriat (Me.ECL) Sub Station gets reflected to 132kV Khliehriat (PG) Sub Station causing greater isolation of system. Hence, it is essential that Me.ECL should carry out testing of downstream Relays at 132kV Khliehriat (Me.ECL) Sub Station and based on the condition of relays further course of action may be decided. In case the relays are found defective POWERGRID will revise the existing relay setting at 132kV Khliehriat (PG) Sub Station in such a way that expedite tripping of both 132kV Khliehriat – Khliehriat Line # 1 & 2 occurs during downstream fault to avoid undesirable isolation of Lines at upstream.

It was decided in the 99th OCC meeting that POWERGRID and Me.ECL will conduct a joint inspection and checking of relays on 25/07/2014 to identify the problems and suggest remedial action.

During 25th PCC meeting, Me.ECL representatives informed the members that relays in NEHU and NEIGRIHMS feeders have been tested. Lumshnong feeder may be tested during proposed shutdown on 24.09.2014.

Further, it was informed that a proposal has been made to identify new site for proper earthing of Khliehriet sub-station. Latest status may be intimated in next PCC.

It was requested to highlight the joint inspection report in next PCC meeting and the same may also be highlighted in CERC hearing.

Further POWERGRID informed that till protection system, switchgear & earthing system are improved, relay setting of Khliehriat (PG)-Khliehriat (Me.ECL) Ckt-1&2 will be minimized along with inter-tripping of both ckts at PG end to avoid reflection of downstream fault of Me.ECL Network in to 132kV NER upstream Grid viz Khandong (NEEPCO) & Khliehriat (PG bus).

Me. PTCL may intimate the latest status and highlight the joint inspection report.

A.5 Transmission Availability verification for ISTS elements:

Procedure for calculation of Transmission system availability factor for a month as per CERC Regulation 2014-19.

As per Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulations, 2014-19 .Transmission System Availability factor for a calendar month (TAFM) w.e.f. 1st April 2014 shall be calculated by the respective transmission licensee, got verified by the concerned RLDC and certified by the Member Secretary, Regional Power Committee of the region concerned separately for each AC and HVDC transmission system.

Deliberation in the 25th PCC, 101st OCC and 22nd CCM Meetings

Planned Outages: -

1) In all cases of outages, RLDC will certify the actual outage period. The outage period will be cross-checked with the approved outage period in OCC forum. All planned outages should be availed by the executing agency as approved in the OCC forum.

2) Any deferment from approved outage hours and approved outage days may be intimated by the agency to NERPC with a copy to NERLDC, justifying the reason of deferment. The deferred hours/ days without proper justification will be deducted from the availability period.

Emergency Outages: -

1) Outages beyond the control of the agency when RPC nor RLDC could not be informed earlier and immediate remedial actions are required.
2) Outages planned in OCC forum but are of emergency in nature like tower in danger, CBs need immediate replacement, etc. However, the agency has to intimate RPC with a copy to RLDC.
3) Outages that cannot be delayed till next OCC forum for proper approval.
4) However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Transient Outages: -

1) Outages that are of transient in nature due to lightning, mal-operation of relays, etc.
2) Transient Earth Fault, Auto-reclosure, phase-to-phase fault, etc.
3) Outages due to infringements.
4) However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Outages due to others: -

1) Outages due to fault in the downstream protection.
2) Outages as per direction of RLDC for desired system condition.
3) Outages due force majeure/ Acts of God.
4) However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Force Majeure: -

1) Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; or
2) Any act of war, invasion, armed conflict or act of foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action; or
3) Industry wide strikes and labour disturbances having a nationwide impact in India;
4) However, the agency has to intimate RLDC with the reason of outage for all the above cases which may be approved in OCC forum.

Conditions given in SoR: -

1) Only 2 trippings per annum allowed for each AC system, additional 12 hours may be added for each tripping in case of trippings more than 2 in a year.
2) Further in case of outage of a transmission element affecting evacuation of power from a generating station outage hours shall be multiplied by a factor of **2.**

Further suggestions of PCC/ OCC: -

1) In case of force majeure due to lightning, the agency may send DR waveform to RLDC/ RPC for further studies.
2) Option of installing lightning mapping was suggested.
3) NERTS was requested to give presentation in next OCC to highlight the DR waveform nature so that same can be used for certification.
4) Two trippings per year is allowed for each AC system.
5) In case of trippings attributable to other agency, system study group may find out the cause of tripping; only tripping attributable to the concerned agency may be considered for 2 trippings per annum.
6) In case of trippings affecting evacuation of power from a generating station,

the same may be reviewed in next OCC/ PCC to finalize: -

a) Whether lines directly connected to the station should be considered? Or

b) Lines not directly connected to the station but also affecting the generation should also be considered?

Further, sub-committee discussed the issue for understanding of trippings of line due to lightening.

DGM, POWERGRID informed that the lightening phenomenon can be understood by some of the methods below:

(a) DR Record
(b) Installation of Lightning mapping equipment
(c) Enquiring whether condition of particular locality.

The sub-committee requested POWERGRID to give presentation in next OCC of lightning phenomenon and also to have better understanding of all the issues before finalization. POWERGRID agreed.

Commercial Sub-committee agreed to the suggestions of PCC/ OCC forum and further decided that: -

1. Outages certified by NERLDC till finalization of the procedure may be treated as provisional and same will be revised once the certification procedure is finalized.

2. Certificates issued by NERPC are provisional only and final certificate will be issued after due verification from NERLDC as per the procedures finalized. NETC may approach NERPC for provisional certification till the same is finalized.

3. Agencies will make necessary adjustments in the bills once final certificate is issued by NERPC.

Further, NERLDC proposed the steps to be taken for the purpose of verification of transmission system availability vide letter no NERLDC/MO/125/4422 dtd 26.08.14 to Member Secretary, NERPC by NERLDC. Proposed steps are as follows:-

1. Submission of outage data of the month to NERLDC by the transmission licensee pertaining to previous month (say data of January shall be submitted by February)

2. Verification of duration of outage by NERLDC after receiving outage data of the month from the transmission licensee for verification of reasons of outage and ascertaining whether outage is attributable to transmission licensee or others (say by 1st week of March).

3. Simultaneously place the data in next OCC of NERPC for identifying the

outages which caused generator backing down (say by 1st week of March)

4. Outcome/decision of PCC meeting and OCC meeting shall be intimated to NERLDC within a week after the meeting (say by 15th March)

5. NERLDC will verify and submit the data to NERPC Secretariat (say by 25th March)

The Sub-Committee may like to note and suggest.

A.6 Implementation of the recommendations of the Protection Audit:

As per para no 27 of CERC order in Petition No. 220/MP/2012 on 21.02.14,the deficiencies, if any, in Category-A (the deficiencies which can be corrected without any procurement) shall be rectified by the concerned STU and CTU within 2 months of issue of the order and compliance report in this regard shall be submitted to NERPC. **All deficiencies of Category-B (deficiencies involving procurement of equipment) shall be rectified within 6 months of issue of the order**. In this regard, reasons of non-availability of fund or delay in procurement process shall not be accepted. The procurement and implementation is to be completed by each STU using their own fund which can be reimbursed through a common request of funding through PSDF forwarded through NERPC as per procedure recently approved by Government of India.

During 25th PCC meeting, SE(O) stated that SLD of sub-stations, switching & power stations is one of the requisite information relating to preparation of DPR for R&U scheme for funding from PSDF and he mentioned that the revised formats as desired by NLDC/ CEA have been circulated to all the beneficiaries and requested them to furnish the updated status by 15th September 2014 so that the same may be pursued with NLDC/ CEA. He requested all the constituents to submit the DPR to NLDC and CEA with a copy to NERPC at the earliest.

AEGCL informed that Single Line Diagrams (SLDs) of some sub-stations in which the equipments required to be replaced may take some time. However, they assured that the same will be prepared and sent as early as possible. Further, AEGCL informed that DPR for R&U scheme has already sent by them to NLDC & CEA with a copy to NERPC.

Meghalaya & Nagaland have assured that the DPR for above scheme will be sent within one week.

Further, POWERGRID informed that issue of implementation of Bus Bar protection system at Dimapur S/S as recommended under category-B has already been taken up. Target Completion : Jan'15

Members may intimate the latest status.

A.7 Issues related to Grid Disturbances/Incidences as per CEA Standards, 2010:

The following numbers of Grid Disturbances occurred during the period w.e.f 01st September, 2014 to 21st September, 2014:-

Sl No	Control Area	Number of Grid Disturbance
1	Palatana	2
2	AGBPP	1
3	AGTPP	
4	Ranganadi	
5	Kopili 1	
6	Khandong	
7	Doyang	
8	Loktak	
9	Assam	8
10	Manipur	2
11	Meghalaya	1
12	Mizoram	
13	Nagaland	3
14	Tripura	

This is for information to the members.

A.8 Grid Disturbance during July, 2014:

On 25.07.14 at 05:14:18.820 Hr, 400 kV Balipara – Ranganadi II line tripped (Balipara: Directional E/F with 1922 msec delay, DT receive & Ranganadi : Carrier receive, Overvoltage protection), at 05:14:15.920 Hr, 400 kV Balipara – Ranganadi I line tripped from Ranganadi end only (Balipara : Tie CB tripped, Main CB did not trip & Ranganadi : DP, Z1, R-E). The 400 kV Balipara – Ranganadi I line was Hand Tripped from Balipara later.

Due to tripping of above lines, power supply to Ziro & Itanagar areas of Arunachal Pradesh & Gohpur area of Assam disrupted.

At 05:14:24.800 Hr, 220 kV Samaguri – Balipara line tripped (Samaguri – DP, Z1, B-E & Balipara – No tripping), at 05:14:25.107 Hr, 400 kV Misa – Balipara II line tripped (Misa – Directional E/F with 1800 msec delay & Balipara – No tripping) & at 05:14:25.186 Hr 400 kV Misa – Balipara I line tripped (Misa – DT received & Balipara – Overvoltage protection).

Due to tripping of 400 kV Misa – Balipara D/C lines & 220 kV Samaguri – Balipara S/C line, Southern part of NER Grid (NER Grid except Ziro, Itanagar & Khupi areas of Arunachal Pradesh & Gohpur, Depota & Dhaligaon area of Assam) was connected with rest of NER Grid through narrow corridor 220 kV BTPS – Agia line.

After tripping of above elements, at 05:14:27.585 Hr, 220/132 kV, 2x50 MVA ICT at Balipara tripped, which led to disruption of power supply in Depota area of Assam & Khupi area of Arunachal Pradesh.

At around 05:21 Hr, **220 kV Azara – Sarusajai D/C lines** & 220 kV Azara – Boko and 220 kV Boko – Sarusajai S/C tripped. Due to tripping of these elements, Southern part of NER Grid separated from rest of NER Grid. Frequency of the Southern part of NER Grid shot upto 51.15 Hz (as per PMU).

At 05:34:10.880 Hr, Southern part of NER Grid collapsed due to load generation mismatch.

Load Loss: 1384 MW & Generation Loss: 1564 MW

During 25th PCC meeting, the sub-Committee requested NERLDC to give presentation with remedial measure in next PCC after carrying out system studies based on the inputs given during the meeting to identify the root causes and to suggest remedial measures pertaining to grid disturbance on 25.07.14. The process may be followed for future cases of grid disturbances.

NERLDC may give presentation.

A.9 Major Events in North-Eastern Regional Grid:

List of multiple tripping of elements and tripping of important elements in North-Eastern Regional Grid during the period w.e.f. 01st September, 2014 to 21st September, 2014 are sent to the constituents through e-mail (Letters for Furnishing Event information on weekly basis are being sent to the power utilities of NER by e-mail w.e.f 13th January, 2014). ***Annexure A.9***

Constituents are requested to furnish details of tripping reported in the letters to NERLDC through e-mail.

A.10 Sensitive generator protection setting at Palatana - NERTS agenda:

DGM, NERTS informed that Pallatana is tripping due to tripping of one circuit of Silchar-Byrnihat line even though the other circuit still remains for evacuation. Such sensitive tripping is to be prevented as it results in unnecessary loss of generation.

During 25th PCC meeting, OTPC was requested to submit the setting of generator protection in next PCC so that the same may be prevented in future.

OTPC may intimate the required information.

A.11 Protection setting at Haflong sub-station - AEGCL agenda:

DGM, AEGCL informed that due to fault in downstream of Haflong (33 kV side), Haflong (PG) trips which needs to be rectified.

During 25th PCC meeting, POWERGRID informed that they already furnished revised setting to AEGCL for further review.

It was agreed that NERTS will help in modifying the relay of Haflong downstream feeders. AEGCL was requested to co-ordinate with NERTS for rectification of the same.

NERTS/ AEGCL may intimate the latest status.

B.1 Implementation of Auto Reclosure Scheme in 132kV Jiribam (PG) - Loktak and 132kV Imphal (PG) – Loktak Line:

The external Auto Reclose Relay Type VARM and MGA are already obsolete and without service support from OEM. At Loktak HEP, the AR Relay Type VARM and MGA of 132kV Jiribam (PG) and 132kV Imphal (PG) are not tested since 2008 and so healthiness could not be ensured. Further, during March'14 NHPC has installed Numerical DPR Type P442 of M/S Alstom Make in the said feeders. Further, the Old / Obsolete CBs are already replaced with SF6 CB. Hence, Auto Reclosure Scheme may be implemented in 132kV Jiribam (PG) - Loktak and 132kV Imphal (PG) – Loktak Line immediately by activating internal Auto Reclosure of Numerical DPR to avoid use of obsolete Auto Reclose Relay Type VARM and MGA.

Members may like to deliberate.

B.2 Removal of Obsolete DPR Type THR-3 and SSRR3V from 132kV Jiribam (PG) and 132kV Imphal (PG) Feeder:

As per the existing practice, the protection scheme for 132kV Lines is Single Main and Backup Protection. During March'14 NHPC has already installed Numerical DPR Type P442 of M/S Alstom Make in 132kV Jiribam (PG) and 132kV Imphal (PG) feeders. However, the obsolete DPRs viz. THR-3 and SSRR3V of 132kV Jiribam (PG) and 132kV Imphal (PG) feeders have not been disconnected from the scheme which is unsafe so far as reliable protection is concerned considering the probability of mal-operation of the obsolete relays. There are instances of undesirable tripping of 132kV Jiribam (PG) – Loktak Line on account of mal-operation of old DPR at Loktak HEP. NHPC should disconnect the Old and Obsolete DPRs immediately.

Members may like to deliberate.

B.3 Rectification of CT Switching relays of 220kV Bus Bar Protection Scheme at 400/220kV Balipara Sub Station by AEGCL:

The 220kV Bus Bar Protection Scheme at 400/220kV Balipara Sub Station operated on 28.09.2014 during operation of Bus Transfer Scheme. On investigation it was found that the CT Switching Relay contact of 50MVA ICT Bay was not operating for Zone – B. Matter was referred to AEGCL for necessary rectification.

Present Status may be intimated by AEGCL

Any other item:

Date and Venue of next PCC

It is proposed to hold the 27th PCC meeting of NERPC on second week of November, 2014. The exact venue will be intimated in due course.

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Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Owner	Data to be furnished by	Date & Time of Event provided by CR operator	Operation of Auto Reclose (Lockout/ sucessfully	Relay indications provided by CR operator	Effect (Loss of Load & Generation in MW)	Category as per CEA Grid Standards	Date and time or restoration provided by CR operator	Details of SPS Operation	Quantum of TTC of NER-ER corridor reduced in MW	DR output furnished within 24 hours (Y/N)
A. Multiple / Repeated tripping												
1	132 kV Jiribam(PG)- Jiribam	MSPCL	**POWERGRID & MSPCL**	03.09.14 at 0024 Hrs	Not Furmished	Jiribam(PG)- Y-ph, LA Faliure & Jiribam- Not available	Load Loss: 3 (Manipur)	GD-I	1215 Hrs on 03.09.14	No SPS	Not Reduced	N
	132 kV Jiribam(PG)- Badarpur	POWERGRID				Jiribam(PG)- E/F, Y-ph & Badarpur- No tripping			0040 Hrs on 03.09.14			N
	132 kV Jiribam(PG)- Loktak	POWERGRID				Jiribam(PG)-Not available & Loktak- DP, Z2, Y-ph			0421 Hrs on 03.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 132 kV Jiribam(PG)- Loktak, 132 kV Jiribam(PG)- Badarpur &132 kV Jiribam(PG)- Jiribam, power supply to Jiribam area of Manipur disrupted. **(Antecedent Generation : 1270 MW , Antecedent Load : 1422 MW)**											
2	132 kV Silchar- Panchgram	POWERGRID/ AEGCL	**POWERGRID & AEGCL**	04.09.14 at 0031 Hrs	Not Furnished	Silchar- DP, Z2, B-ph & Panchgram- Y-ph, E/F	Load Loss: 10 (Assam)	GD-I	0043 Hrs on 04.09.14	No SPS	Not Reduced	N
	132 kV Silchar- Dullavchera	POWERGRID/ AEGCL				Silchar- DP, Z1, Y-ph & Dullavchera- No tripping			0107 Hrs on 04.09.14			N
	132 kV Dullavchera- Dharmanagar	AEGCL/ TSECL		04.09.14 at 0035 Hrs		Loos of Voltage			0107 Hrs on 04.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 132 kV Silchar- Panchgram, 132 kV Silchar- Dullavchera & 132 kV Dullavchera- Dharmanagar, power supply to Dullavchera area of Assam disrupted. **(Antecedent Generation : 1575 MW , Antecedent Load : 1625 MW)**											
3	400 kV Silchar- Byrnihat	NETC	**POWERGRID, MePTCL & OTPC**	05.09.14 at 0226 Hrs	Not Furnished	Silchar- DP, Z1, R-ph, E/F & Byrnihat- DP, Z1, R-ph, E/F	Load Loss: 60 (Assam) Generation Loss: 340	GD-III		SPS I operated Load Relief- 60 MW	Not Reduced	N
	Palatana GTG I	OTPC			Not Furnished	Tripped due to Generator Protection Trip			0450 Hrs on 05.09.14			N
	Palatana STG I								0551 Hrs on 05.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 400 kV Silchar- Byrnihat and Palatana GTG-I & STG-I, SPS-I operated which provided load relief in South Assam area. **(Antecedent Generation : 1539 MW , Antecedent Load : 1548 MW)**											
4	220 kV Misa- Kopili I	POWERGRID	**POWERGRID**	06.09.14 at 0546 Hrs	Not Furnished	Misa- DP, Z2, R-ph & Kopili- DP, Z1, R-ph	-	-	0602 Hrs on 06.09.14	No SPS	Not Reduced	N
	220 kV Misa- Kopili II	POWERGRID				Misa- DP, Z2, R-ph & Kopili- DP, Z1, R-ph			0604 Hrs on 06.09.14			N

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Owner	Data to be furnished by	Date & Time of Event provided by CR operator	Operation of Auto Reclose (Lockout/ sucessfully	Relay indications provided by CR operator	Effect (Loss of Load & Generation in MW)	Category as per CEA Grid Standards	Date and time or restoration provided by CR operator	Details of SPS Operation	Quantum of TTC of NER-ER corridor reduced in MW	DR output furnished within 24 hours (Y/N)
5	220 kV Misa- Dimapur II	POWERGRID	**POWERGRID & DoP, Nagaland**	06.09.14 at 0631 Hrs	Not Furnished	Misa- DP,Z1, R-ph & Dimapur- DP,Z1,R-ph	Load Loss: 15 (Nagaland)	GD-I	0650 Hrs on 06.09.14	No SPS	Not Reduced	N
	132 kV Dimapur- Kohima	Nagaland				Dimapur-DP,Z1,R-ph & Kohima-No tripping			0651 Hrs on 06.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 220 kV Misa- Dimapur II and 132 kV Dimapur- Kohima, power supply to Kohima area in Nagaland disrupted. **(Antecedent Generation : 1540 MW , Antecedent Load : 1449 MW)**										
6	220 kV Misa- Samaguri I	POWERGRID	**POWERGRID**	06.09.14 at 0726 Hrs	Not Furnished	Misa- No tripping & Samaguri- B-ph, E/F	-	-	0741 Hrs on 06.09.14	No SPS	Not Reduced	N
	220 kV Misa- Samaguri II	POWERGRID							0742 Hrs on 06.09.14			N
7	220 kV Balipara- Samaguri	POWERGRID/ AEGCL	**POWERGRID, AEGCL & MePTCL**	06.09.14 to 0728 Hrs	Not Furnished	Balipara-DP,Y-ph & Samaguri- No tripping	-	-	0739 Hrs on 06.09.14	No SPS	Not Reduced	N
	220 kV Misa- Brynihat II	MePTCL				Misa-DP,Z1,B-ph & Byrnihat-DP,Z2,B-ph			0805 Hrs on 06.09.14			N
8	400 KV Silchar- Brynihat	NETC	**POWERGRID, MePTCL & OTPC**	06.09.14 at 0135 Hrs	Not Furnished	Silchar- Not available & Byrnihat- DP, Z1,R-ph, E/F	Load Loss: 70 (Assam) Generation Loss: 340	GD-III		SPS I operated Load Relief- 60 MW	Not Reduced	N
	Palatana GTG I	OTPC			Not Furnished	Tripped due to Generator Protection Trip						N
	Palatana STG I											N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 400 kV Silchar- Byrnihat and Palatana GTG-I & STG-I, SPS-I operated which provided load relief in South Assam area. **(Antecedent Generation : 1481 MW , Antecedent Load : 1516 MW)**										
9	400/220 kV, 315 MVA ICT I at Azara	AEGCL	**AEGCL**	06.09.14 at 1346 Hrs	Not Furnished	Tripped	-	-	1721 Hrs on 06.09.14	No SPS	Not Reduced	N
	400/220 kV, 315 MVA ICT II at Azara	AEGCL							1721 Hrs on 06.09.14			N

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Owner	Data to be furnished by	Date & Time of Event provided by CR operator	Operation of Auto Reclose (Lockout/ sucessfully	Relay indications provided by CR operator	Effect (Loss of Load & Generation in MW)	Category as per CEA Grid Standards	Date and time or restoration provided by CR operator	Details of SPS Operation	Quantum of TTC of NER-ER corridor reduced in MW	DR output furnished within 24 hours (Y/N)
10	220 kV Misa- Samguri I	POWERGRID	**POWERGRID & AEGCL**	07.09.14 at 0350 Hrs	Not Furnished	Tripped	Load Loss: 40 (Assam)	GD-I	0508 Hrs on 07.09.14	No SPS	Not Reduced	N
	220 kV Misa- Samguri II	POWERGRID							0508 Hrs on 07.09.14			N
	220 kV Balipara-Samaguri	POWERGRID/ AEGCL							0509 Hrs on 07.09.14			N
	400/220 kV,315 MVA ICT I at Misa	POWERGRID							0511 Hrs on 07.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 220 kV Misa- Samguri I &II, 220 kV Balipara-Samaguri & 400/220 kV,315 MVA ICT I at Misa, Misa subststion was blackout.										
		(Antecedent Generation : 1455 MW , Antecedent Load : 1438 MW)										
11	132 kV Jiribam- Haflong	POWERGRID	**POWERGRID**	0522 Hrs on 11.09.14	Not Furnished	Jiribam- DP,Z1, R-Y ph & Haflong- DP,Z1, R-Y ph	Load Loss: 2 (Assam)	GD-I	0544 Hrs on 11.09.14	No SPS	Not Reduced	N
	132 kV Khandong- Haflong	POWERGRID				Khandong- No Tripping & Haflong- DP,Z1			0534 Hrs on 11.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 132 kV Jiribam- Haflong and 132 kV Khandong- Haflong, power supply to Haflong area of Assam interrupted										
		(Antecedent Generation : 1541 MW , Antecedent Load : 1462 MW)										
12	400 kV Silchar-Byrnihat	NETC	**POWERGRID/ MePTCL**	2104 Hrs on 13.09.14	Successful at Brynihat only	Silchar- DP,Z2,Y-ph & Byrnihat- Not available	Load Loss: 47 (Assam)	GD-I	2130 Hrs on 13.09.14	SPS- I operated	Not Reduced	N
		NETC		2139 Hrs on 13.09.14		Silchar- DP,Z2,Y-ph & Byrnihat- Not available	Load Loss: 48 (Assam)	GD-I	2221 Hrs on 13.09.14	SPS- I operated	Not Reduced	N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 400 kV Silchar-Byrnihat line, SPS- I operated providing a load relief in South Assam area.										
		(Antecedent Generation : 1790 & 1820 MW respectively , Antecedent Load : 1899 & 1734 MW respectively)										
13	220 kV Misa- New Mariani	POWERGRID	**POWERGRID**	0016 Hrs on 12.09.14	Succesful at Misa end only	Misa- DP,Z1,B-ph (H/T later) & New Mariani- DP,Z1,B-ph	-	-	0310 Hrs on 12.09.14	No SPS	Not Reduced	N
	220 kV AGBPP- New Mariani	POWERGRID			Not furnished	AGBPP- Hand tripped & New Mariani- O/V			0526 Hrs on 12.09.14	No SPS	Not Reduced	N
14	220 kV Samaguri-Jawaharnagar	AEGCL	**AEGCL**	1055 Hrs on 15.09.14	Not Furnished	Samaguri- DP, Z2, B-ph E/F & Jawaharnagar- No tripping	Load Loss: 46 (Assam)	GD-I	1108 Hrs on 15.09.14	No SPS	Not Reduced	N
	220 kV Jawaharnagar- Sarusajai	AEGCL				Jawaharnagar-DP, Z2, B-ph E/F & Sarusajai- No tripping			1121 Hrs on 15.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 220 kV Samaguri-Jawaharnagar and 220 kV Jawaharnagar- Sarusajai, power supply to Jawaharnagar in Assam interrupted.										
		(Antecedent Generation : 1434 MW , Antecedent Load : 1344 MW)										

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Owner	Data to be furnished by	Date & Time of Event provided by CR operator	Operation of Auto Reclose (Lockout/ sucessfully	Relay indications provided by CR operator	Effect (Loss of Load & Generation in MW)	Category as per CEA Grid Standards	Date and time or restoration provided by CR operator	Details of SPS Operation	Quantum of TTC of NER-ER corridor reduced in MW	DR output furnished within 24 hours (Y/N)
15	132 kV Loktak- Ningthoukhong	MSPCL	**MSPCL**	1023 Hrs on 18.09.14	Not Furnished	Loktak- E/F & Ningthoukhong- Not available	Load Loss: 16 (Manipur)	GD-I		No SPS	Not Reduced	N
	132 kV Imphal- Ningthoukhong	MSPCL			Not Furnished	Imphal- E/F & Ningthoukhong- Not available						N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 132 kV Loktak- Ningthoukhong and 132 kV Imphal- Ningthoukhong, power supply to Ningthoukhong area of Manipur interrupted **(Antecedent Generation : 1408 MW , Antecedent Load : 1421 MW)**										
16	132 kV Silchar- Panchgram	POWERGRID/ AEGCL	**POWERGRID & AEGCL**	1930 Hrs on 18.09.14	Not Furnished	Silchar- DP,Z2 & Panchgram- Not available	Load Loss: 16 (Assam)	GD-I	1956 Hrs on 18.09.14	No SPS	Not Reduced	N
	132 kV Silchar- Dullavchera	POWERGRID/ AEGCL			Not Furnished	Silchar- DP, Z1, R-Y-ph & Dullavchera- Not vailable			2015 Hrs on 18.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)	Due to tripping of 132 kV Silchar- Panchgram and 132 kV Silchar- Dullavchera, power supply to Dullavchera area in Assam interrupted **(Antecedent Generation : 1892 MW , Antecedent Load : 1943 MW)**										
B. Tripping of critical element												
1	400 KV Silchar- Azara	NETC	**POWERGRID & AEGCL**	01.09.14 at 1236 Hrs	Not Furnished	Silchar- DP, Z2, B-ph & Azara-DP, Z1, Y-ph	-	-	1341 Hrs on 01.09.14	No SPS	Not Reduced	N
2	220 kV Mariani- Samaguri	AEGCL	**AEGCL**	03.09.14 at 1040 Hrs	Not Furnished	Mariani- E/F, Y-ph & Samaguri-E/F, R-ph	-	-	1100 Hrs on 03.09.14	No SPS	Not Reduced	N
3	220 kV Balipara- Samaguri	POWERGRID/ AEGCL	**POWERGRID & AEGCL**	03.09.14 at 1045 Hrs	Not Furnished	Balipara- Not vailable & Samaguri- No Tripping	-	-	1100 Hrs on 03.09.14	No SPS	Not Reduced	N
4	400 kV Silchar- Palatana I	NETC	**POWERGRID & OTPC**	06.09.14 at 1423 Hrs	Not Furnished	Silchar- O/V & Palatana- DT received	-	-	1502 Hrs on 06.09.14	No SPS	Not Reduced	N
5	400 KV Silchar- Brynihat	NETC	**POWERGRID & MePTCL**	06.09.14 at 1508 Hrs	Not Furnished	Silchar- DP,Z1,R-E & Byrnihat- DP, Z1,R-E	-	-	1549 Hrs on 06.09.14	SPS-IV not operated succesfully	Not Reduced	N
6	400 kV Silchar - Byrnihat	NETC	**POWERGRID/ MePTCL**	0655 Hrs on 08.09.14	Not Furnished	Silchar- DP, Z1, B-ph & Byrnihat -DP, Z1, Y-ph	Load Loss: 67	GD-I	0731 Hrs on 08.09.14	SPS-I operated	Not Reduced	N
7	220 kV Azara - Boko	AEGCL	**AEGCL**	1145 Hrs on 08.09.14	Not Furnished	Azara - E/F & Boko -E/F, B-ph	-	-	1229 Hrs on 08.09.14	No SPS	Not Reduced	N
8	400 kV Balipara- Bongaigaon III	POWERGRID	**POWERGRID**	1629 Hrs on 09.09.14	Not Furnished	Baliapar- DP,Z1,B-Ph & Bongaigaon- Not available	-	-	1651 Hrs on 09.09.14	No SPS	Not Reduced	N
9	220 kV Baliapar- Samaguri	POWERGRID/ AEGCL	**POWERGRID/ AEGCL**	1004 Hrs on 10.09.14	Not Furnished	Balipara- DP, B-ph & Samaguri- No tripping	-	-	1012 Hrs on 10.09.14	No SPS	Not Reduced	N
10	400 klV Silchar- Palatana I	NETC	**POWERGRID & OTPC**	0839 Hrs on 12.09.14	Not Furnished	Silchar-DT received & Silchar- O/V	-	-	0909 Hrs on 12.09.14	No SPS	Not Reduced	N
11	220 kV Sarusajai- Samaguri II	AEGCL	**AEGCL**	2143 Hrs on 13.09.14	Not Furnished	Sarusajai- DP,Z1,B-ph, E/F & Samaguri- Not available	-	-	2228 Hrs on 13.09.14	No SPS	Not Reduced	N
12	400 kV Balipara- Bongaigaon I	POWERGRID	**POWERGRID**	1655 Hrs on 14.09.14	Not Furnished	Balipara-DP,Z1,Y-ph & Bongaigaon- DP,Z1,Y-ph	-	-	1745 Hrs on 14.09.14	No SPS	Not Reduced	N
13	400 kV Bongaigaon- New Siliguri I	POWERGRID	**POWERGRID**	0755 Hrs on 15.09.14	Not Furnished	Bongaigaon- No tripping & New Siliguri- Direct trip received	-	-	0822 Hrs on 15.09.14	No SPS	Not Reduced	N

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Owner	Data to be furnished by	Date & Time of Event provided by CR operator	Operation of Auto Reclose (Lockout/ sucessfully	Relay indications provided by CR operator	Effect (Loss of Load & Generation in MW)	Category as per CEA Grid Standards	Date and time or restoration provided by CR operator	Details of SPS Operation	Quantum of TTC of NER-ER corridor reduced in MW	DR output furnished within 24 hours (Y/N)
14	132 kV Dimapur- Kohima	Nagaland	**POWERGRID & DoP, Nagaland**	1150 Hrs on 17.09.14	Not Furnished	Dimapur- DP,Z1, B-ph & Kohima- Not available	Load Loss: 10 (Nagaland)	GD-I	1155 Hrs on 17.09.14	No SPS	Not Reduced	N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 132 kV Dimapur- Kohima, power supply to Kohima area of Nagaland got interrupted. **(Antecedent Generation : 1442 MW , Antecedent Load : 1471 MW)**										
15	400 kV Balipara- Baongaigaon	POWERGRID	**POWERGRID**	1210 Hrs on 17.09.14	Not Furnished	Balipara- DP, Z1, Y-ph & Baongaigaon- DP,Z1, Y-ph	-	-	1214 Hrs on 17.09.14	No SPS	Not Reduced	N
16	400 kV Silchar-Azara	NETC	**POWERGRID/ AEGCL**	1415 Hrs on 17.09.14	Not Furnished	Silchar-DP,Z1,B-ph & Azara-DEF, Direct Trip sent	-	-	1428 Hrs on 17.09.14	No SPS	Not Reduced	N
17	220 kV Birpara- Salakati	POWERGRID	**POWERGRID**	1607 Hrs on 21.09.14	Succesful at Salakati end only (Birpara- not furnished)	Birpara- R-B-N & Salakati- DP,Z1, R-E	-	-	1702 Hrs on 21.09.14	No SPS	Not Reduced	N
18	132 kV Dimapur- Kohima	Nagaland	**POWERGRID & DoP, Nagaland**	2228 Hrs on 21.09.14	Not Furnished	Dimapur- DP,Z1, B-ph & Kohima- Not available	Load Loss: 20 (Nagaland)	GD-I	2234 Hrs on 21.09.14	No SPS	Not Reduced	N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of 132 kV Dimapur- Kohima, power supply to Kohima area of Nagaland got interrupted. **(Antecedent Generation : 1873 MW , Antecedent Load : 1566 MW)**										

C. Unit tripping

1	Palatana GTG I	OTPC	**OTPC**	02.09.14 at 0749 Hrs	Not available	Tripped due to high Condenser Pressure	Generation Loss: 15	GI-II	0832 Hrs on 02.09.14	SPS did not operate	No Reduction	N
2	Palatana GTG I	OTPC	**OTPC**	02.09.14 at 1540 Hrs	Not available	Tripped due to Combustion trouble	Generation Loss: 61	GI-II	2359 Hrs on 02.09.14	SPS did not operate	No Reduction	N
3	Palatana STG I						Generation Loss: 70		0030 Hrs on 03.09.14		No Reduction	N
4	AGTPP U 4	NEEPCO	**NEEPCO**	06.09.14 at 0257 Hrs	Not available	Tripped due to Low Lubricant oil pressure	Generation Loss: 18	GI-I	1540 Hrs on 07.09.14	No SPS	No Reduction	N
5	Khandong U 1	NEEPCO		06.09.14 at 0327 Hrs	Not available	Tripped due to high UGB temperature	Generation Loss: 24	GI-I	1854 Hrs on 06.09.14	No SPS	No Reduction	N
6	Kopili U 1	NEEPCO		07.09.14 at 0255 Hrs	Not available	Tripped sue to Auxiliary Supply Faliure	Generation Loss: 46	GD-I	1701 Hrs on 15.09.14	No SPS	No Reduction	N
7	Kopili U 2	NEEPCO		07.09.14 at 0258 Hrs	Not available		Generation Loss: 49		2011 on 12.09.14	No SPS	No Reduction	N
8	AGBPP U 8	NEEPCO	**NEEPCO**	1120 Hrs on 09.09.14	Not available	Tripped due to high bearing temperature	Generation Loss: 27	GI-II	1312 Hrs on 09.09.14	No SPS	Not Reduced	N
9	Loktak U 1	NHPC	**NHPC**	1304 Hrs on 10.09.14	Not available	Tripped due to high air temperature	Generation Loss: 32	GI-I	1325 Hrs on 10.09.14	No SPS	Not Reduced	N

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10	Kopili U 4	NEEPCO	**NEEPCO**	1526 Hrs on 11.09.14	Not available	Triiped due to Generator Rotor E/F	Generation Loss: 49	GI-I	1945 Hrs on 11.09.14	No SPS	Not Reduced	N
11	AGTPP U 4	NEEPCO	**NEEPCO**	1908 Hrs 11.09.14	Not available	Tripped due to Oil leakage in diffuser of GTG U-4	Generation Loss: 17	GI-I	1826 Hrs on 12.09.14	No SPS	Not Reduced	N
12	AGBPP U 5	NEEPCO	**NEEPCO**	0032 Hrs on 13.09.14	Not available	Tripped due to high inlet differential air pressure	Generation Loss: 32	GI-II	0317 Hrs on 13.09.14	No SPS	Not Reduced	N
13	Loktak U 1	NHPC	**NHPC**	0511 Hrs on 13.09.14	Not available	Tripped due to excitation faliure	Generation Loss: 33	GI-I	0536 Hrs on 13.09.14	No SPS	Not Reduced	N
14	AGBPP U 5	NEEPCO	**NEEPCO**	0501 Hrs on 14.09.14	Not available	Tripped due to high inlet differential air pressure	Generation Loss: 11	GI-II	1918 Hrs on 18.09.14	No SPS	Not Reduced	N
15	Leshka U 1	MePGCL	**MePGCL**	1339 Hrs on 16.09.14	Not available	Tripped	Generation Loss: 105	GD-I	1433 Hrs on 16.09.14	No SPS	Not Reduced	N
16	Leshka U 2					Tripped			1433 Hrs on 16.09.14	No SPS	Not Reduced	N
17	Leshka U 3					Tripped			1446 Hrs on 16.09.14	No SPS	Not Reduced	N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	Due to tripping of all three units of Myntdu Leshka HEP in Meghalaya, there was generation loss of 105 MW. **(Antecedent Generation : 1458 MW , Antecedent Load : 1474 MW)**										
18	Khandong U 1	NEEPCO	**NEEPCO**	0501 Hrs on 17.09.14	Not available	Tripped due to MIV problem	Generation Loss: 22	GI-I	1029 Hrs on 17.09.14	No SPS	Not Reduced	N
19	AGBPP U 4	NEEPCO	**NEEPCO**	1226 Hrs on 17.09.14	Not available	Tripped due to tripping of GC-II	Generation Loss: 28	GI-II	1316 Hrs on 17.09.14	No SPS	Not Reduced	N
20	AGBPP U 7			1225 Hrs on 17.09.14	Not available	Tripped due to tripping of GC-II	Generation Loss: 25	GI-II	1732 Hrs on 17.09.14	No SPS	Not Reduced	N
21	Khandong U 1	NEEPCO	**NEEPCO**	0150 Hrs on 18.09.14	Not available	Tripped due to mechanical problem	Generation Loss: 24	GI-I	1200 Hrs on 18.09.14	No SPS	Not Reduced	N
22	Kopili Stg II	NEEPCO	**NEEPCO**	1839 Hrs on 18.09.14	Not available	Tripped due to high thrust bearing temperature	Generation Loss: 25	GI-I	2020 on 18.09.14	No SPS	Not Reduced	N
23	Kopili Stg II	NEEPCO	**NEEPCO**	0614 Hrs on 19.09.14	Not available	Tripped due to reverse power and mechanical over speed	Generation Loss: 25	GI-I	1550 Hrs on 19.09.14	No SPS	Not Reduced	N
24	AGBPP U 4	NEEPCO	**NEEPCO**	1455 Hrs on 19.09.14	Not available	Tripped due to tripping of GC-II	Generation Loss: 29	GI-II	1506 Hrs on 19.09.14	No SPS	Not Reduced	N
25	AGBPP U 6	NEEPCO	**NEEPCO**	1503 Hrrs on 19.09.14	Not available	Tripped due to tripping of GC-II	Generation Loss: 29	GI-II		No SPS	Not Reduced	N
26	Kopili Stg II	NEEPCO	**NEEPCO**	0105 Hrs on 20.09.14	Not available	Tripped due to high thrust bearing temperature	Generation Loss: 25	GI-I	0221 Hrs on 20.09.14	No SPS	Not Reduced	N
27	Kopili Stg II	NEEPCO	**NEEPCO**	0613 Hrs on 20.09.14	Not available	Tripped due to high thrust bearing temperature	Generation Loss: 25	GI-I	1857 Hrs on 20.09.14	No SPS	Not Reduced	N
28	AGBPP U 8	NEEPCO	**NEEPCO**	2032 Hrs on 20.09.14	Not available	Tripped due to high generator negative sequence current	Generation Loss: 30	GI-II	2153 Hrs on 20.09.14	No SPS	Not Reduced	N

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Owner	Data to be furnished by	Date & Time of Event provided by CR operator	Operation of Auto Reclose (Lockout/ sucessfully	Relay indications provided by CR operator	Effect (Loss of Load & Generation in MW)	Category as per CEA Grid Standards	Date and time or restoration provided by CR operator	Details of SPS Operation	Quantum of TTC of NER-ER corridor reduced in MW	DR output furnished within 24 hours (Y/N)
D. Power Station Blackout												
1	220 kV AGBPP- Mariani	POWERGRID	**POWERGRID, AEGCL, NEEPCO & DoP, Arunachal Pradesh**	0420 Hrs on 12.09.14	Lockout at AGBPP	Tripped	Load Loss: 2 (Arunachal Pradesh) Generation Loss: 205	GD-II	0520 Hrs on 12.09.14	No SPS	Not Reduced	N
	220 kV AGBPP- Tinsukia I	AEGCL			Not Furnished	Tripped on O/C at AGBPP			1004 Hrs on 12.09.14			N
	220 kV AGBPP- Tinsukia II	AEGCL			Not Furnished				1004 Hrs on 12.09.14			N
	132 kV LTPS- Mariani	AEGCL			Not Furnished	Tripped on E/F & O/C			0503 Hrs on 12.09.14			N
	AGBPP U 1	NEEPCO			Not available	Tripped due to loss of evacuation path			0655 Hrs on 12.09.14			N
	AGBPP U 2	NEEPCO			Not available				0658 Hrs on 12.09.14			N
	AGBPP U 3	NEEPCO			Not available				0635 Hrs on 12.09.14			N
	AGBPP U 4	NEEPCO			Not available				0632 Hrs on 12.09.14			N
	AGBPP U 5	NEEPCO			Not available				1156 Hrs on 12.09.14			N
	AGBPP U 7	NEEPCO			Not available				1105 Hrs on 12.09.14			N
	AGBPP U 8	NEEPCO			Not available				1955 Hrs on 12.09.14			N
	220 kV AGBPP-Deomali	DoP, Arunachal Pradesh		0433 Hrs on 12.09.14		Hand Tripped			0622 Hrs on 12.09.14			N
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent	No										
	Description of Incident (For GD only)	All the running units of AGBPP tripped due to loss of evacuation path as 220 kV AGBPP- Mariani and 220 kV AGBPP- Tinsukia D/C (while 220 kV AGBPP-New Mariani was out) tripped.										
		(Antecedent Generation : 1462 MW , Antecedent Load : 1448 MW)										
K. System Isolation / Major Grid Disturbance												
No Such Event Reported												

Note : 1. All above informations are to be sent to NERLDC through e-mail

2. After each trigerring, DR output is to be sent to NERLDC

3. Y: Yes, N: No, NA : Not Applicable & CR : Control Room

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
A. Multiple / Repeated tripping												
1	132 kV Jiribam(PG)- Jiribam	N										
	132 kV Jiribam(PG)- Badarpur	N										
	132 kV Jiribam(PG)- Loktak	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
2	132 kV Silchar- Panchgram	N										
	132 kV Silchar- Dullavchera	N										
	132 kV Dullavchera- Dharmanagar	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
3	400 kV Silchar- Byrnihat	N										
	Palatana GTG I	N										
	Palatana STG I	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
4	220 kV Misa- Kopili I	N										
	220 kV Misa- Kopili II	N										

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
5	220 kV Misa- Dimapur II	N										
	132 kV Dimapur- Kohima	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
6	220 kV Misa- Samaguri I	N										
	220 kV Misa- Samaguri II	N										
7	220 kV Balipara- Samaguri	N										
	220 kV Misa- Brynihat II	N										
8	400 KV Silchar- Brynihat	N										
	Palatana GTG I	N										
	Palatana STG I	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
9	400/220 kV, 315 MVA ICT I at Azara	N										
	400/220 kV, 315 MVA ICT II at Azara	N										

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
10	220 kV Misa- Samguri I	N										
	220 kV Misa- Samguri II	N										
	220 kV Balipara-Samaguri	N										
	400/220 kV,315 MVA ICT I at Misa	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
11	132 kV Jiribam- Haflong	N										
	132 kV Khandong- Haflong	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
12	400 kV Silchar-Byrnihat	N										
		N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
13	220 kV Misa- New Mariani	N										
	220 kV AGBPP- New Mariani	N										
14	220 kV Samaguri-Jawaharnagar	N										
	220 kV Jawaharnagar- Sarusajai	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
15	132 kV Loktak- Ningthoukhong	N										
	132 kV Imphal- Ningthoukhong	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
16	132 kV Silchar- Panchgram	N										
	132 kV Silchar- Dullavchera	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
B. Tripping of critical element												
1	400 KV Silchar- Azara	N										
2	220 kV Mariani- Samaguri	N										
3	220 kV Balipara- Samaguri	N										
4	400 kV Silchar- Palatana I	N										
5	400 KV Silchar- Brynihat	N										
6	400 kV Silchar - Byrnihat	N										
7	220 kV Azara - Boko	N										
8	400 kV Balipara- Bongaigaon III	N										
9	220 kV Baliapar- Samaguri	N										
10	400 klV Silchar- Palatana I	N										
11	220 kV Sarusajai- Samaguri II	N						2228 Hrs on 13.09.14				
12	400 kV Balipara- Bongaigaon I	N										
13	400 kV Bongaigaon- New Siliguri I	N										

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
14	132 kV Dimapur- Kohima	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
15	400 kV Balipara- Baongaigaon	N										
16	400 kV Silchar-Azara	N										
17	220 kV Birpara- Salakati	N										
18	132 kV Dimapur- Kohima	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
C. Unit tripping												
1	Palatana GTG I	N										
2	Palatana GTG I	N										
3	Palatana STG I	N										
4	AGTPP U 4	N										
5	Khandong U 1	N										
6	Kopili U 1	N										
7	Kopili U 2	N										
8	AGBPP U 8	N										
9	Loktak U 1	N										

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
10	Kopili U 4	N										
11	AGTPP U 4	N										
12	AGBPP U 5	N										
13	Loktak U 1	N										
14	AGBPP U 5	N										
15	Leshka U 1	N										
16	Leshka U 2	N										
17	Leshka U 3	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
18	Khandong U 1	N										
19	AGBPP U 4	N										
20	AGBPP U 7	N										
21	Khandong U 1	N										
22	Kopili Stg II	N										
23	Kopili Stg II	N										
24	AGBPP U 4	N										
25	AGBPP U 6	N										
26	Kopili Stg II	N										
27	Kopili Stg II	N										
28	AGBPP U 8	N										

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	EL output furnished within 24 hours (Y/N)	Violation of Regulation/ Standard	Date & Time of Event from SOE of SCADA	Date & Time of Event from DR	Details of operation of Main I / Main Relay	Details of operation of Main II / Back up Relay	Whether the element tripped due to UFR/ ROCOF	Details of Fault locator	Date and time or restoration from SOE of SCADA	Date and time or restoration from DR	Output of Data Acquisation System (Y/N)
D. Power Station Blackout												
1	220 kV AGBPP- Mariani	N										
	220 kV AGBPP- Tinsukia I	N										
	220 kV AGBPP- Tinsukia II	N										
	132 kV LTPS- Mariani	N										
	AGBPP U 1	N										
	AGBPP U 2	N										
	AGBPP U 3	N										
	AGBPP U 4	N										
	AGBPP U 5	N										
	AGBPP U 7	N										
	AGBPP U 8	N										
	220 kV AGBPP-Deomali	N										
	Details of Analysis Done by PCC											
	Remedial measures taken											
	FIR by the constituent											
	Description of Incident (For GD only)											
K. System Isolation / Major Grid Dist												

Note : 1. All above informations
2. After each trigerring, D
3. Y: Yes, N: No, NA : Not

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
A. Multiple / Repeated tripping									
1	132 kV Jiribam(PG)- Jiribam								
	132 kV Jiribam(PG)- Badarpur								
	132 kV Jiribam(PG)- Loktak								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
2	132 kV Silchar- Panchgram								
	132 kV Silchar- Dullavchera								
	132 kV Dullavchera- Dharmanagar								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
3	400 kV Silchar- Byrnihat								
	Palatana GTG I								
	Palatana STG I								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
4	220 kV Misa- Kopili I								
	220 kV Misa- Kopili II								

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
5	220 kV Misa- Dimapur II								
	132 kV Dimapur- Kohima								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
6	220 kV Misa- Samaguri I								
	220 kV Misa- Samaguri II								
7	220 kV Balipara- Samaguri								
	220 kV Misa- Brynihat II								
8	400 KV Silchar- Brynihat								
	Palatana GTG I								
	Palatana STG I								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
9	400/220 kV, 315 MVA ICT I at Azara								
	400/220 kV, 315 MVA ICT II at Azara								

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
10	220 kV Misa- Samguri I								
	220 kV Misa- Samguri II								
	220 kV Balipara-Samaguri								
	400/220 kV,315 MVA ICT I at Misa								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
11	132 kV Jiribam- Haflong								
	132 kV Khandong- Haflong								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
12	400 kV Silchar-Byrnihat								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
13	220 kV Misa- New Mariani								
	220 kV AGBPP- New Mariani								
14	220 kV Samaguri-Jawaharnagar								
	220 kV Jawaharnagar- Sarusajai								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
15	132 kV Loktak- Ningthoukhong								
	132 kV Imphal- Ningthoukhong								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
16	132 kV Silchar- Panchgram								
	132 kV Silchar- Dullavchera								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
B. Tripping of critical element									
1	400 KV Silchar- Azara								
2	220 kV Mariani- Samaguri								
3	220 kV Balipara- Samaguri								
4	400 kV Silchar- Palatana I								
5	400 KV Silchar- Brynihat								
6	400 kV Silchar - Byrnihat								
7	220 kV Azara - Boko								
8	400 kV Balipara- Bongaigaon III								
9	220 kV Baliapar- Samaguri								
10	400 klV Silchar- Palatana I								
11	220 kV Sarusajai- Samaguri II								
12	400 kV Balipara- Bongaigaon I								
13	400 kV Bongaigaon- New Siliguri I								

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
14	132 kV Dimapur- Kohima								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
15	400 kV Balipara- Baongaigaon								
16	400 kV Silchar-Azara								
17	220 kV Birpara- Salakati								
18	132 kV Dimapur- Kohima								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
C. Unit tripping									
1	Palatana GTG I								
2	Palatana GTG I								
3	Palatana STG I								
4	AGTPP U 4								
5	Khandong U 1								
6	Kopili U 1								
7	Kopili U 2								
8	AGBPP U 8								
9	Loktak U 1								

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
10	Kopili U 4								
11	AGTPP U 4								
12	AGBPP U 5								
13	Loktak U 1								
14	AGBPP U 5								
15	Leshka U 1								
16	Leshka U 2								
17	Leshka U 3								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
18	Khandong U 1								
19	AGBPP U 4								
20	AGBPP U 7								
21	Khandong U 1								
22	Kopili Stg II								
23	Kopili Stg II								
24	AGBPP U 4								
25	AGBPP U 6								
26	Kopili Stg II								
27	Kopili Stg II								
28	AGBPP U 8								

Annexure A.9for 26th PPCM

Sl. No.	Name of tripping element/ Description	Fault Clearance time (from DR & nearest PMU)	Issues with the Sub-station confirguration as per CEA standard	Protection Mal-operation	Non availability of LBB/ Bus Bar Protection	Non Availability of DR	Non availability of Event logger	Non-availability of SCADA /SOE at RLDC	System is not safe after N-1 Contingency
D. Power Station Blackout									
1	220 kV AGBPP- Mariani								
	220 kV AGBPP- Tinsukia I								
	220 kV AGBPP- Tinsukia II								
	132 kV LTPS- Mariani								
	AGBPP U 1								
	AGBPP U 2								
	AGBPP U 3								
	AGBPP U 4								
	AGBPP U 5								
	AGBPP U 7								
	AGBPP U 8								
	220 kV AGBPP-Deomali								
	Details of Analysis Done by PCC								
	Remedial measures taken								
	FIR by the constituent								
	Description of Incident (For GD only)								
K. System Isolation / Major Grid Dist									

Note : 1. All above informations
2. After each trigerring, D
3. Y: Yes, N: No, NA : Not