

**EASTERN REGIONAL POWER COMMITTEE**  
14, GOLF CLUB ROAD, TOLLYGUNGE  
KOLKATA-700033

**Major decisions taken in 14<sup>th</sup> PCC meeting held on 21<sup>st</sup> Nov' 2012**

1. A separate meeting will be held on 27<sup>th</sup> Nov 2012 (Tuesday) at 1100hrs at ERPC conference room with NHPC, WBSTCL, POWERGRID, ERLDC and ERPC Secretariat to discuss issues related with commissioning of LILO of 132KV RANGIT- SILIGURI LINE AT KURSEONG (WB).
2. All utilities should submit a self-certificate to ERPC Secretariat regarding availability, healthiness and time synchronization status of all DRs and ELs (for 400 kV levels) in their systems by 14<sup>th</sup> December 2012.
3. Powergrid was advised to submit the zone-3 setting of all their lines (upto 400 kV level) latest by 28<sup>th</sup> November 2012 without further delay, so that the same could be suitably communicated to the monitoring authorities.
4. A special meeting will be convened by ERPC secretariat on 11 Dec 2012 at ERPC Secretariat for finalizing the feasibility of the islanding schemes submitted by utilities.
5. All utilities should positively submit the requisite data for third party protection audit (as per proforma available in ERPC website) latest by 30 Nov 2012.
6. All utilities should submit the information on ownership of PLCC equipment for 400 kV and 220 kV tie lines latest by 14<sup>th</sup> December 2012.

---

**MINUTES OF THE 14<sup>th</sup> PROTECTION SUB-COMMITTEE MEETING HELD AT ERPC,  
KOLKATA ON 21.11.2012 (WEDNESDAY) AT 11:00 HOURS**

---

*List of participants is enclosed at Annexure-A.*

*Member Secretary I/C, ERPC welcomed the participants and took up the agenda one by one.*

**PART - A**

**ITEM NO.:1      CONFIRMATION OF THE MINUTES OF THE:**

- (i)      13<sup>th</sup> PROTECTION SUB-COMMITTEE MEETING OF ERPC HELD AT ERPC, KOLKATA ON 08.08.2012
- (ii)     SPECIAL PROTECTION SUB-COMMITTEE MEETING HELD AT ERPC, KOLKATA ON 11.10.2012

The minutes of the above meetings were circulated vide letter no. ERPC/SE (PS)/ PROTECTION/ 2012/ 3577-3610 dated 13.09.2012 and ERPC/SE (PS)/ PROTECTION/ 2012/ 4408-41 dated 19.10.2012 respectively.

*No comments have been received from any constituent.*

*The minutes of the meeting may be confirmed.*

**Deliberation in the meeting**

*The minutes of the 13<sup>th</sup> Protection sub-committee meeting and Special protection sub-committee meeting were confirmed without any modification.*

**PART - B      NEW ITEMS**

**ITEM NO.1      PROTECTION COORDINATION & PLCC SCHEME FOR 132KV RANGIT- SILIGURI LINE LILO AT KURSEONG (WB) - NHPC AGENDA**

NHPC vide their letter dated 09.11.2012 requested to include the following for discussion:

- i.      After implementation of LILO at Kurseong, WBSETCL may please be asked to keep the provision in design of new PLCC scheme for the communication directly between Rangit & Siliguri also without interference of Kurseong Sub-station.
- ii.     WBSETCL, may be asked to ensure proper protection scheme and to provide details of relay settings well in advance for the line covering the distance from Rangit to Kurseong and Kurseong to Siliguri before implementation of LILO.

WBSETCL, POWERGRID & NHPC may like to discuss.

### Deliberation in the meeting

*It was understood that the new PLCC panel was already installed at Rangit end, but not yet commissioned. After deliberation, it was decided that the present issue with other items relevant to commissioning of LILO of 132KV RANGIT- SILIGURI LINE AT KURSEONG (WB) would be discussed in a separate meeting on 27<sup>th</sup> Nov 2012 (Tuesday) at 1100hrs at ERPC conference room with NHPC, WBSTCL, POWERGRID, ERLDC and ERPC Secretariat.*

#### **ITEM NO.2 PLCC PROBLEM FOR 400kV SgTPP -Farakka STPS S/C line- WBPDCCL point**

WBPDCCL reported that there was a bus fault at FSTPS on 08.11.2012 at 10:44 Hrs, but there was no direct trip signal received at SgTPP end for the above line. The problem of carrier protection needs investigation.

NTPC & POWERGRID may please intimate the reason.

### Deliberation in the meeting

*In the meeting it was explained that since it is a two bus system, there is no requirement of direct trip for single bus fault.*

#### **ITEM NO.3 REPORTING OF GRID INCIDENTS / TRIPPINGS / DISTURBANCES TO ERLDC- ERLDC POINT**

As per stipulations of Section 5.2(r) of IEGC “All the Users , STU/SLDC and CTU shall send information/data including disturbance recorder/sequential event recorder output to RLDC within **24 hours** for purpose of analysis of any grid disturbance/event. No User, SLDC/STU or CTU shall block any data/information required by the RLDC and RPC for maintaining reliability and security of the grid and for analysis of an event “. The present practice is as follows:

- a) BSEB: reports event information by handwritten msg giving tripping information and details of information within 24-48 hrs. Information regarding relay opn , analysis etc not being sent.
- b) JSEB: follows the procedure in line with BSEB within 24-48 hrs.
- c) DVC: submit detailed report of tripping along with other details. However time line given in IEGC could not be met reportedly due to delay in coordination with different departments like testing, generators etc. DR/EL output not being accompanied with reports.
- d) OPTCL: submit event report in details .Time lines not being met reportedly due to delay in coordination among different organizations like OHPC, OPGC, DISCOM etc. DR/EL not being attached.
- e) WBSETCL: submit event report in details .Time lines not being met reportedly due to delay in coordination among different organizations like generators, DISCOM etc. DR/EL not being attached.

- f) NTPC: submit reports. DR/EL output being sent in PDF format. Need lot of persuasion for collection of data for every event. Time line not being met.
- g) POWERGRID: Submit reports and attach DR/EL output after lot of persuasion.
- h) NHPC: Submit reports and attach DR/EL output after lot of persuasion.
- i) Bhutan: formal report being sent after persuasion.

It is therefore observed that the provisions of 5.2(r) are not being followed in letter and spirit by the constituents of Eastern Region. ERLDC will be constrained to bring this issue to the notice of CERC / CEA / MoP in case such practice continues even after 31-12-12. Concerned members are further requested to furnish list of sub-stations / power stations (220kV & above) in their respective systems, where DRs are either non-functional or not installed and finalise a time-bound action plan for overcoming such deficiency. It is also generally observed in case of disturbances that generating stations send relay / DR information pertaining to outgoing lines only. The relay indications related to generating units is generally not made available. All utilities of ER may kindly therefore ensure that relay indications of generators are also included in the disturbance report

Further, for reporting tripping of transmission element, ERLDC had circulated a format (**enclosed at Annexure-I**) to all constituents for furnishing details as per the format. The same is once again attached for ready reference. Constituents are requested to henceforth kindly follow the format, for uniformity in availability of detail information and onward submission of the same to CEA / MoP whenever asked for.

Members may like to discuss.

### **Deliberation in the meeting**

*After deliberation, it was decided that*

1. *All utilities should submit grid incident report to ERLDC in the format given in Annexure-I (till further modified), otherwise it would be considered that utilities did not comply with the relevant section 5.2.(r) of IEGC.*
2. *All utilities should also submit the report within the time frame mentioned in IEGC.*
3. *All utilities should submit a self-certificate to ERPC Secretariat regarding availability, healthiness and time synchronization status of all DR and EL (for 400 kV levels) in their systems by 14<sup>th</sup> December 2012. The same would be placed before ensuing TCC/ERPC for information and further advice.*
4. *Constituents were requested to give suggestions for further improvement of the format given in Annexure-I.*

#### ITEM NO. 4 ANALYSIS OF DR OUTPUTS - ERLDC POINT

With the advent of new DRs built in with numerical relays of various makes, plots being received from various regional entities are having different formats and hence pose difficulty in interpretation/ analysis. Further DR output are being sent to ERLDC in PDF format as original DR output files cannot be read in ERLDC in absence of software to convert the file into readable format. Hence, software required to convert binary DR output files of different makes into readable format need to be installed in ERLDC.

Members may like to discuss.

##### **Deliberation in the meeting**

*It was agreed that DR output files be sent in PDF format to avoid the difficulty in interpretation/analysis.*

#### ITEM NO. 5 TIME SYNCHRONISATION OF DRs / ELs - ERLDC POINT

Absence of time synchronization among different DRs and ELs leads to difficulty in correlating the tripping sequences and understanding an event. Such difficulty had been experienced in analysing the grid failure of 31/07/12. A time-bound action plan may be finalised by this committee for time synchronisation of DRs and ELs throughout the region.

Members may like to discuss.

##### **Deliberation in the meeting**

*All constituents agreed to complete the time synchronization of all DRs/ELs in respective control area within 14<sup>th</sup> December 2012 and completion report would be submitted to ERPC by the stipulated date as decided under item no. 3 above.*

#### ITEM NO.6 ANALYSIS & DISCUSSION ON VARIOUS GRID INCIDENCES WHICH OCCURRED IN CTU / STU SYSTEMS DURING THE PERIOD BETWEEN JULY,2012 TO NOVEMBER,2012 - Reports submitted by ERLDC

Agenda submitted by ERLDC on various grid incidences during the above period is incorporated at Annexure-II).

Respective constituent members may please explain with necessary single line network diagram and intimate the remedial measures taken.

##### **Deliberation in the meeting**

- i. Grid incident in DVC system on 26.07.12 at 09:35hrs: DVC informed that on that day, they were carrying some works on strengthening of bus system and shifted most of the loads to one bus. During works, fault occurred on that bus, and all Mejia units got out on over speed relay due to loss of evacuation path.*

- ii. *Grid incident on DVC system on 18.10.12 at 20:36hrs: DVC informed that fault level at Kalyaneswari had recently increased and accordingly, stabilizing resistor in the high impedance bus differential protection scheme was needed to be adjusted. Work was just going on for rectification. In between, there was a close-in fault near Kalyaneswari causing bus differential protection to operate at Kalyaneswari end, whereas remote end tripped through Direction relay operation. DVC confirmed that rectification work was completed.*
- iii. *Grid incident on WBSETCL system on 13.08.12 at 21:15hrs, 24.08.12 at 15:42 hrs and 10:50 hrs: WBSETCL informed that the incidents had occurred due to bus bar protection relay mal-operation (low insulation at relay contact) and the matter was reported to M/s ABB. Presently relay is kept bypassed.*
- iv. *Grid incident on NTPC, Kahalgaon on 19.10.12 at 05:57 hrs: NTPC informed that on that day, Farakka end tripped upon DT receipt, whereas there was no PLCC counter movement at Kahalgaon end. NTPC also informed that they had not taken up the issue further, as the line was recently commissioned. NTPC was requested to take up the issue of PLCC maloperation with Powergrid.*
- v. *Grid incident on NTPC, Farakka and Sagardighi on 08.11.12 at 10.51 hrs: NTPC informed that bus fault at Farakka had occurred due to CT failure. The problem was rectified.*

*Other grid incidents could not be analyzed due to non-participation of representatives from concerned organization.*

## **PART - C FOLLOW UP OF DECISIONS OF THE PREVIOUS (13<sup>th</sup>) PROTECTION SUB-COMMITTEE MEETING**

The status on the follow up actions is to be furnished by respective constituents.

### **ITEM NO.1 FAILURE OF PLCC (BPL MAKE) FOR 400KV SAGARDIGHI TPS-SUBHASGRAM S/C LINE - WBPDC AGENDA**

- BPL make PLCC of SgTPS-Subhasgram S/C line remained out of service since long time
- The issue remains pending for want of feedback from WBPDC and POWERGRID ends.

WBPDC & POWERGRID may intimate present status.

### **Deliberation in the meeting**

*WBPDC informed that they were in the process of finalizing contract for award of PLCC for Sagardighi-Subhashgram.*

**ITEM NO. 2      FREQUENT TRIPPING OF TENUGHAT-BIHARSHRIFF AND TENUGHAT -PATRATU  
220 KV TRANSMISSION LINES**

- It was observed that the incidences of tripping of the above lines have reduced considerably in the recent months.
- The feedback for remedial measures have not been received from TVNL so far.

TVNL & BSEB may please respond.

**Deliberation in the meeting**

*Members expressed satisfaction over the fact that no incidence of tripping of the above lines is reported in the recent months.*

**ITEM NO. 3      INTERMITTENT FAILURE OF MAIN-I-CARRIER PROTECTION CHANNEL IN RESPECT OF  
400KV FARAKKA-JEERAT CIRCUIT AT JEERAT END**

- The protection channel of Main-II of 400 kV Farakka-Jeerat line is under outage since 01.09.2010.
- POWERGRID is yet to take up the work.

POWERGRID may please intimate the present status.

**Deliberation in the meeting**

*Power grid representative informed that LOA for material was placed and work would be completed with in 2 months.*

**ITEM NO. 4      PROCUREMENT AND INSTALLATION OF NUMERICAL RELAYS BY JSEB FOR LALMATIA  
SUBSTATION**

- The need to install numerical relays, in place of the existing one was felt for Lalmatia S/stn., which JSEB agreed to expedite its procurement and its installation during 20<sup>th</sup> TCC meeting.
- ERPC vide its letter dated 06.03.2012 impressed upon Member (Tr.) of JSEB for early procurement and installation of numerical relays at the above sub-stations as per the decision of 20<sup>th</sup> TCC meeting. The information is awaited.

JSEB may intimate the present status.

**Deliberation in the meeting**

*As no representative from JSEB was present, it was decided that the issue would be taken up in the next TCC meeting.*

## ITEM NO. 5      SPS FOR Sterlite Generation

### **Modification of SPS of Sterlite - Proposed by ERLDC**

400 KV Rourkela-Raigarh ckt-IV IS LILoed at Sterlite thereby making 400 KV Sterlite-Rourkela and Sterlite-Raigarh 2<sup>nd</sup> line which were taken into service on 17/07/12 at 17:59 hrs and 20:49 hrs respectively.

**It was decided to take both 400 KV Sterlite-Rourkela and Sterlite-Raigarh 2<sup>nd</sup> line under the ambit of SPS implemented by Sterlite.**

In the Special Protection sub- Committee meeting, SEL representative was requested to incorporate necessary modifications in their SPS taking into account LILo of another circuit of 400kV Rourkela-Raigarh at Sterlite, as well as formation of W3 bid zone. The present scheme as implemented at SEL as well as changes to be, if any, may please be explained in detail (with logic diagram) by M/S Sterlite Energy Limited

SEL may please explain.

### **Deliberation in the meeting**

*No representative from Sterlite was present. However, ERLDC informed that there is no progress. It was decided that the issue would be taken up separately with sterlite.*

## ITEM NO. 6      IMPLEMENTED SPS OF CESC SYSTEM

The different SPSs presently implemented in CESC system, may please be elaborated by CESC representative, as requested in the last special protection committee meeting.

CESC may please elaborate.

### **Deliberation in the meeting**

*As no representative from CESC was present, it was decided that the issue would be taken up separately with CESC.*

## ITEM NO.7      REPLACEMENT OF PLCC SYSTEM OF 400 kV TSTPS (NTPC) -ROURKELA AND TSTPS (NTPC) - RENGALI D/C

- PLCC system and protection coupler (BPL-make) of the aforesaid lines has become obsolete and non-availability of spare support has made difficult to maintain the healthiness of the PLCC system. The replacement of the PLCC system at the remote ends (Rourkela & Rengali S/S of POWERGRID) is also involved for matching PLCC
- The replacement of PLCC was taken up by Powergrid and work order was to place in August,2012. The delivery schedule of equipment is



about 4 to 5 months. The new PLCC is expected to be in place by 31<sup>st</sup> March, 2013.

POWERGRID & NTPC may please intimate the present status.

#### **Deliberation in the meeting**

*Power grid representative informed that, purchase order is placed to ABB and the new PLCC is expected to be in place by 31st March, 2013.*

#### **ITEM NO. 8 COMMISSIONING OF BUS BAR PROTECTION AT RAMCHANDRAPUR AND CHANDIL 220 KV SUB-STATION OF JSEB**

- JSEB agreed to expedite the installation of bus bar protection at both the above sub-stations in the 20<sup>th</sup> TCC meeting.

JSEB may please intimate the present status.

#### **Deliberation in the meeting**

*As no representative from JSEB was present, it was decided that the issue would be taken up in the next TCC meeting.*

#### **ITEM NO. 9 ZONE - 3 SETTINGS OF TRANSMISSION LINE**

In the previous meetings it was felt necessary that some of the important lines Zone - 3 settings have to be reviewed so that this would not conflict with emergency loading of the lines. The emergency load capability would give the Operator sufficient time to take corrective action, but if such loading can lead to load encroachment of Distance Relays in Zone - 3, the emergency situation would worsen and may lead to cascading of outages. Further, power swing blocking philosophy also needs to be revisited in the light of recent grid disturbances. Constituents were requested to submit protection settings of transmission elements of important grid elements and the sample format prepared by ERLDC was given for submission.

All members were impressed upon in the last meeting to furnish the information, in respect of their own transmission systems. The data was received from NTPC - Farakka and Talcher, WBSETCL and Kolaghat TPS and DVC systems. The same is still pending from POWERGRID, BSEB, JSEB, TVNL, SEL, NHPC & SIKKIM. The data received from the constituents is under process and other constituents are requested to furnish immediately.

GM, ERLDC vide its letter dated 12.11.2012 intimated that the Enquiry Committee constituted by MOP following the grid disturbance of 31-7-12 inter-alia recommended:

*“9.1.2 Till protection audit is taken up, there is need to take immediate review of zone-3 philosophy in particular. Techniques are available to modify characteristics of the relay so that it can distinguish between load encroachment and faults. These techniques and other alternatives should be explored immediately”.- Unquote*

*Action: RPCs, CTU, STUs  
Time Frame: Immediate*

In the Special Protection sub-Committee meeting held on 11.10.12, Powergrid representative had assured that information regarding Zone-3 setting of ERTS-I & II as well as POWERLINKS lines would be made available to ERPC Secretariat by 2<sup>nd</sup> week of Nov, 2012. The operating as well as emergency loading limits of all EHV lines (220kV and above) in India have already been compiled by NLDC. It is expected that the lines should carry power upto their respective emergency limits without any problem.

Members may please examine the present settings of 400kV lines (except CTU) available with ERPC (shown in Annexure-III) for further analysis.

### **Deliberation in the meeting**

*PCC noted that barring Powergrid & Powerlink all other utilities in ER had already submitted the details in this regard. Member Secretary I/c, ERPC informed that implementation of the zone-3 philosophy is being monitored at the highest authority as in view of recent grid disturbance in the month of July zone-3 philosophy had emerged as an absolute necessity in todays power sector. PCC therefore advised Powergrid to submit the zone-3 setting of all their lines (upto 400 kV level) latest by 28<sup>th</sup> November 2012 without further delay, so that the same could be suitably communicated to the monitoring authorities.*

## **ITEM NO. 10 IMPLEMENTATION OF ISLANDING SCHEME FOR THERMAL POWER PLANTS**

- In the last special protection committee meeting DVC representative had informed that they are in the process of finalizing an islanding scheme of CTPS units (at 132kV) with local load. The final scheme may please be explained in detail (with logic diagram) by DVC
- DPL was requested to confirm the basic purpose of islanding from Bidhanagar s/s of West Bengal system and the scheme conceived by them for fulfilment of above requirements. DPL representative may please elaborate.
- In the special protection committee meeting held on 11.10.12, WBSETCL/WBSEDCL and WBPDCCL representatives had agreed to finalise the islanding scheme of Bakreswar with Gokarna loads, Bandel with Adisaptagram loads shortly. Representatives from WBSETCL/WBSEDCL and WBPDCCL may please explain the house (with suitable logic diagram) the preliminary / final scheme envisaged by them.
- **Islanding of Farakka STPS unit with Lalmatia load**  
As reported by NTPC in the last special protection committee meeting held on 11.10.12, the scheme for islanding Farakka unit with Lalmatia load has already been sent to NTPC's corporate office, for their approval. Pending receipt of views of their HO, NTPC representative is requested to please elaborate their islanding scheme with necessary logic diagram.

Members may please discuss.

### **Deliberation in the meeting**

*WBPDCCL had prepared islanding schemes for Bakreswar TPS and Bandel TPS utilizing UFR. Similarly, DVC had also prepared an islanding scheme for CTPS (Old) machine utilizing UFR and df/dt. NTPC had also planned an islanding scheme for Farakka STPS.*

*It was decided that on islanding schemes a special meeting would be convened by ERPC secretariat on 11 December 2012 at ERPC Secretariat for finalizing the feasibility of the schemes before forwarding the same to TCC/ERPC for approval.*

#### **ITEM NO. 11    Islanding scheme of CPPs**

- i) In the previous meeting M/S Tata Power informed that WBSETCL has already approved their proposal for islanding of one 120MW unit of Haldia CPP with local load.

TATA Power & WBSETCL may highlight the final plan of islanding scheme.

- ii) A no. of CPPs are connected to the OPTCL system through 400 KV, 220 KV and 132 KV lines. Some of these CPPs like NALCO, ICCL and RSP have their islanding scheme in place which is recorded in Recovery procedures prepared by ERLDC and the same successfully operated during grid disturbance occurred in the past. However, details of islanding schemes of other CPPs in other states of ER are not available with ERLDC.

In view of above, action may be taken by SLDCs to furnish the details of islanding schemes of CPPs under their jurisdiction to ERLDC for including the same in Recovery procedures in the event of a major disturbance involving ER grid, the surviving CPP islands should be in a position to extend startup power to their nearest power stations. If any commercial and technical constraint exists for availing start up power from these CPPs, the same may have to be resolved.

SLDC / OPTCL may please intimate the present status.

### **Deliberation in the meeting**

*Members requested WBSETCL to proactively take up the issue of islanding of Haldia Power with M/s TATA Power. The issue would also be discussed in the special meeting on 11 December 2012 on islanding schemes.*

#### **ITEM NO. 12            Audit of UFR relay**

- As per section 5.2(n) IEGC, RPC Secretariat shall carry out periodic testing of UFR relays.

- In the 22<sup>nd</sup> TCC & ERPC meeting it was decided that UFR Audit of the ER constituents would be taken up by the UFR Audit group, nominated by the respective constituents.
- The sub-group had already inspected the 132kV sub-stations: Liluah, Salt Lake of WBSETCL, Jadavpur & Majerhat of CESC & Burdwan, Kaliphari & Kumardubhi of DVC. The out come is found to be in order and encouraging.

Members may please note.

### **Deliberation in the meeting**

*Members noted.*

#### **ITEM NO. 13      “THIRD PARTY PROTECTION AUDIT”    - Commencement of work**

After the grid disturbances occurred on 30<sup>th</sup> & 31<sup>st</sup> July, 2012 in NR, NER & ER, the enquiry committee for this purpose has made a number of recommendations in its report published on 16.08.2012. In order to ensure a coordinated and time bound implementation of these recommendations, Member (GO & D), CEA, is taking up regular review meeting to monitor the progress. One of the recommendations (no. 9.1.1 of the report) states the following:

***“ There is need to review protection schemes. This committee concurs with recommendation of previous enquiry committees that a thorough Third Party Protection Audit need to be carried out in time bound manner. This exercise should be repeated periodically and monitored by RPCs”***

***Action: RPCs, CTUs, STUs  
Time Frame: 1 year***

In view of above, a Special Protection sub-committee meeting was held at ERPC, Kolkata on 11.10.2012 to discuss the implementation of the above. In the meeting, it was gathered that the protection audit had been carried out by CPRI in association with POWERGRID in NR, whereas in SR a group comprising representatives from the concerned state one from the neighbouring state, one from RLDC, one from POWERGRID & one from RPC was constituted for conducting the protection Audit. The Protection sub-Committee members felt that the modality adopted in SR should be followed in case of Eastern Region also.

Accordingly, it was decided in the meeting that a Committee for ‘Third Party Protection Audit’ work will be constituted in ER comprising the following Members:

1. One member from each States/Utilities.
2. One member from Neighboring States.

3. One member from ERLDC.
4. One member from Powergrid and
5. One member from ERPC.

Superintending Engineer (PS), ERPC was nominated as one of the members from ERPC Secretariat and shall be convener of this Committee.

All the Constitutes/utilities of ER were requested to nominate member(s) for the above Committee within one week on receipt of a letter from Member Secretary, ERPC seeking the nomination.

The meeting was held on 16.11.2012 at ERPC, Kolkata and members were requested to furnish relevant information as per the specified format within a week.

Member may please note.

#### **Deliberation in the meeting**

*PCC noted that nomination from Powergrid (ER II) for the proposed committee is yet to be made and representatives from Powergrid (both from ER I & ER II) were not available in the meeting held on 16.11.2012. PCC advised Powergrid to complete the nomination at the earliest and submit the element wise protection details in their systems without further delay.*

*On request from utilities, it was decided that all utilities will positively submit the requisite data for third party protection audit (as per proforma available in ERPC website) latest by 30 November 2012.*

*All utilities also agreed to submit the data over email to ERPC Secretariat (mserpc-power@nic.in) within the deadline so that the same could be collated/analyzed before convening the next meeting of the nominated members in the second week of December 2012.*

#### **ITEM NO. 14 ANY OTHER ITEMS**

- I. During deliberations, members felt the need for having a consolidated list on ownership of PLCC equipment for 400 kV and 220 kV tie lines. It was decided that ERLDC would circulate the format by 30<sup>th</sup> November 2012, and all utilities should submit the information latest by 14<sup>th</sup> December 2012.*
- II. Members also felt that some utilities are not participating in Protection sub-committee meetings as well as various sub-groups constituted by ERPC. Members took the matter seriously and felt that non-participation by the utilities in the meeting/sub-group would prevent the basis objective of RPC formation. Therefore, it was decided to take the issue to TCC/ERPC for information and further advice.*

**The meeting ended with vote of thanks to chair.**

\*\*\*\*\*

## FORMAT FOR REPORTING SYSTEM DISTURBANCES ( Detailed Report )

### OCCURRENCE REPORT

**(1) Date & Time of Occurrence**

**(2) Name of the Sub Station / Generating Station**

**(3) Details of Occurrence**

At the time of occurrence the disposition of the feeders was as below

<b><u>Bus A</u></b>
---------------------

<b><u>Bus B</u></b>
---------------------

<b>BUS COUPLER BREAKER WAS “ON” /”OFF”</b>
--

**For one and half breaker scheme**

	Feeder I	Feeder II	Tie-breaker (On/Off)
Diameter 1			
Diameter 2			
Diameter 3			

#### (4) Sequence of Trippings

Event			
Time	(hh	mm	ss )

#### (5) Relay Indication for Faulted Line/Transformer/Bus

(A)			Relay Indication
Sl. No.	Name of Bay / Line	Local End Relay type / Make And Indications	Remote End Relay type / Make And Indications
1.			
2.			
3.			
4.			

#### (6) Location and nature of Fault

--

#### (7) PLCC counter readings

	Local end		Remote end	
	Before	After	Before	After
CH I				
CH II				

#### (8) Analysis

#### (9) Restoration

Sl.No.		From	To	Duration

Analysis of event:

Remedial Measures / Lesson Learnt

--

Enclosure ::-

- 1) Schematic Diagram showing position of (ON/OFF) breakers, Isolators and Relay Indications.
- 2) DR Charts.
- 3) Event Logger outputs.

## ANNEXURE-II

SYSTEM / SUB-STATION DATE & TIME	INCIDENT	GEN. LOSS (MW)	LOAD LOSS (MW)	DELIBERATION ON THE FOLLOWING POINTS
DVC System 26/07/12, 09:35hrs	Due to Bus fault at 220/132kV Mejia Switchyard in DVC system the all the 220kV lines and all running units at Mejia (U# 2,3,4,5,6) tripped	850	250	DVC may please explain the following: i. The reasons for complete outage of Mejia TPS due to a fault on a single 220kV bus. ii. Such type of faults and complete loss of station generation had occurred in the past also, when protection committee advised DVC to judiciously distribute the auxiliary supply of Mejia units among the two buses. iii. Arrangement for redundancy of auxiliary supply in order that complete loss of generation can be avoided.
DVC system 18/10/12 at 20:36 hrs	200kV Kalyaneswari-Mejia-III tripped on distance protection at both end. At the same time LBB protection operated at Kalyaneswari end due to which all the lines & Auto transformers connected to Kalyaneswari S/s tripped immediately. Total power failed at Panchet HPS, Mithon HPS, Pathardihi & Kalipahari S/s	0	300	DVC may please explain with SLD OF Mejia & Kalyaneswari S/S: i) Reasons for operation of LBB at Kalyaneswari and tripping of feeders connected to both the 220kV buses.
220/132kV Jaynagar S/s of OPTCL system 04/08/12, 08:07hrs	Both the 220 kV buses at Jaynagar S/S became dead due to bursting of R-ph PT of 220kV Theruvali-Jaynagar Ckt-I at Jaynagar R-ph CVT of 220kV Jaynagar-Upper Kolab Ckt- II also burst at Jaynagar at the same time	92	80	
220/132kV Bidhanagar S/s of WBSETCL System 13/08/12, 21:15hrs	Total power failure occurred in 220kV Bus at Bidhannagar s/s due to operation of bus bar protection relay while opening of 220kV Bidhannagar-Waria-I from Waria end. All the 220kV feeders, 315MVA ICT-I & 160MVA Tr-I, II & III	50	350	WBSETCL may please explain the frequent operationalization bar differential protection and remedial measures taken up in order to avoid recurrences.
220/132kV Bidhanagar S/s of WBSETCL System	Total power failure occurred in 220kV Bus at Bidhannagar s/s due to operation of bus bar protection relay. All the 220kV feeders & 160MVA Tr-I, II & III	100	300	



24/08/12, 15:42 hrs	tripped immediately			
220/132kV Bidhanagar S/s of WBSETCL System 24/08/12, 10:50hrs	Total power failure occurred in 220kV Bus at Bidhanagar s/s due to operation of bus bar protection relay while opening of 220kV Bidhanagar-Waria-I from Bidhanagar end. All the 220kV feeders & 160MVA Tr-I, II & III tripped immediately	58	300	
220/132kV Chandil S/s(JSEB 16.09.12 , 12:55hrs	Due to earth fault in 220kV Ranchi- Chandil ckt all the elements connected to 220/132kV Chandil S/s got tripped.	0	170	JSEB may please explain the reasons of ICT tripping due to 220KV line fault on E/F. Bus bar differential protection at Ramachandrapur & Chandil S/Stns would help such undesired tripping in future.
220/132kV Chandil S/s(JSEB 30.09.12 , 11:16hrs	Due to tipping of 220kV Santaldih-Chandil line on O/C, E/F all lines from Chandil S/S tripped. Traction supply interrupted at Rajkharswan, Manique & Golmuri. After restoration again due to problem in 220kV Santaldih- Chandil line the said line was tripped & power failed at Chandil s/s	100	0	
CESC system 07/10/12 15:34 hrs. at	Bus bar protection operated at Titagarh receiving S/s due to bursting of 132kV Bus coupler CT(Y-Ø). All the feeders were tripped along with Unit # 1 & 2 of Titagarh generating station. CESC got separated from Grid due to tripping of 132kV Southern-Majerhat-D/C on backup earth fault protection.132kV Princep-East Kolkata feeder tripped on differential protection due to fault at the cable sealing end at East Kolkata S/s	120	275	CESC representative may please explain reasons of simultaneous tripping of Southern-Majerhat D/C and Princep- East Kolkata 132kV lines.
Kahalgaon, NTPC  19/10/12, 05:57 Hrs  27/10/12, 18:07 Hrs	400 KV Kahalgaon-Biharsharif-I tripped at Kahalgaon end only on 19/10/12 at 05:57 hrs without any indication as reported. Again same incident happened for 400 KV Kahalgaon-Farakka-IV on 27/10/12 at 18:07 hrs.	0  0	0  0	NTPC may please explain: i. The reasons for frequent tripping of lines from Kahalgaon STPS. ii. Submit the relay indication and DR on each day iii. Action taken to prevent loss of such important grid elements.
Farakka STPS & Sagardighi TPS	400kV Bus-1 at FSTPS got isolated following a bus fault, leading to tripping of following lines and units:	700	0	NTPC may submit the relay indications, DR prints and details of antecedent conditions. POWERGRID , ER-II may furnish

08/11/12, 10:51 Hrs	FSTPS – Malda-2, FSTPS-Jeerat, FSTPS-Sagardighi, FSTPS – KhSTPS-4, Sagardighi-Subhashgram (from SGTPS end only), FSTPS U#1, both units at SGTPS			<p>relay indications and DR prints obtained at Malda and problem experienced with CB of 400kV Malda-Farakka-II at Malda on that day.</p> <p>Sagardighi units tripped on loss of evacuation path. WBPDCCL representative may kindly explain reasons for opening of CB from SGTPS end only along with relay indications and DR prints obtained at the power station.</p>
------------------------	---	--	--	--