

Eastern Regional Power Committee:: Kolkata

MINUTES OF THE MEETING CHAIRED BY MEMBER SECRETARY, ERPC HELD ON 15.07.10 AT ERPC, KOLKATA TO DISCUSS IEGC RELATED ISSUES

List of participants is at Annexure-I.

Sh. A. K. Rampal, Member Secretary, ERPC welcomed the participants to the meeting and emphasized the house that Honorable Commission has notified new IEGC effective from 03.05.10. The new IEGC has assigned some new responsibilities to RPC in addition to already existing responsibilities. Accordingly, the same was placed before 14th ERPC meeting held on 10.06.10. ERPC nodded to establish greater communication between ERPC Secretariat and the constituents at appropriate levels. It was further decided that modalities were to be worked out at OCC level. Subsequently, the issue was placed before 52nd OCC meeting, which decided to take all these issues in a separate one day meeting on 15.07.10.

Member Secretary, ERPC requested Sh. A. K. Bandyopadhyaya, Superintending Engineer (Operation), ERPC to take up the agenda items. Sh. A. K. Bandyopadhyaya took up the items one by one.

ITEM NO. 1: ISSUES RELATED WITH ERPC

Responsibilities assigned to RPC by IEGC vis-à-vis present method of discharging the responsibilities were discussed in details. After deliberation, members agreed to discharge the responsibilities in the following manner:

Responsibilities (Relevant extracts of IEGC)	Agreed mechanism to implement the responsibilities
1.5 Compliance Oversight The RPC in the region shall also continuously monitor the instances of non-compliance of the provisions of IEGC and try to sort out all operational issues and deliberate on the ways in which such	<ul style="list-style-type: none">○ The word “continuously” will mean regularly.○ ERLDC will place all matters of non-compliance in monthly OCC meeting for discussion.

<p>cases of non-compliance are prevented in future by building consensus.</p> <p>The Member Secretary RPC may also report any issue that cannot be sorted out at the RPC forum to the Commission</p> <p>The RPC shall also file monthly reports on</p> <ul style="list-style-type: none"> ➤ Status of UI payment ➤ Installation of capacitors by states vis-à-vis the requirement/targets, as decided in the RPC. 	<ul style="list-style-type: none"> ○ Persistent non-compliance will be placed before TCC/ERPC. <p>MS, ERPC will refer any such issue to Commission.</p> <p>ERPC Secretariat will submit the status of UI payment as on last date of preceding month by 15th of every month.</p> <ul style="list-style-type: none"> ○ The constituents shall furnish the report on installation of capacitors by 10th of each month. ○ The Secretariat will consolidate and submit it by 15th. ○ Summary will be annexed with RPC agenda.
<p>4.6.1 Reactive Power Compensation</p> <p>The person already connected to the grid shall also provide additional reactive compensation as per the quantum and time frame decided by respective RPC in consultation with RLDC.</p> <p>The Users and STUs shall provide information to RPC and RLDC regarding the installation and healthiness of the reactive compensation equipment on regular basis.</p> <p>RPC shall regularly monitor the status in this regard.</p>	<ul style="list-style-type: none"> ○ A reactive power study group with one representative from each SLDC, each STU, PGCIL, ERLDC and ERPC Sectt will be formed to finalize the quantum and time frame of reactive power compensation required by the utility on annual basis. ○ The study group will meet once a year. ○ This quantum and time frame will be got vetted from ERPC. <p>The information will be provided to ERLDC and ERPC Secretariat on monthly basis.</p> <p>Information given by users and STU shall be placed before OCC. Any major aberration/exception, if any, will be placed before ERPC.</p>

<p>5.2 System Security Aspects</p> <p>(e) Prolonged Outage of system elements</p> <ul style="list-style-type: none"> • Any prolonged outage of power system elements of any User/CTU/STU, which is causing or likely to cause danger to the grid or sub-optimal operation of the grid, shall regularly be monitored by RLDC. • RLDC shall report such outages to RPC. • RPC shall finalize action plan and give instructions to restore such elements in a specified time period. 	<p>ERLDC will monitor any outage of “Important Network Element” given in “Operating Procedure”. The list of elements will be updated regularly.</p> <ul style="list-style-type: none"> ○ ERLDC shall report such outages to ERPC Secretariat on monthly basis. ○ Any outage requiring urgent intervention for system security shall be promptly reported to ERPC Secretariat. <p>OCC/ERPC Secretariat shall finalize action plan for restoration of the elements.</p>
<p>(k) Power System Stabilizer</p> <ul style="list-style-type: none"> • Power System Stabilizers (PSS) in AVR of generating units (wherever provided), shall be got properly tuned by the respective generating unit owner as per a plan prepared for the purpose by the CTU/RPC from time to time. • CTU /RPC will be allowed to carry out checking of PSS and further tuning it, wherever considered necessary. 	<ul style="list-style-type: none"> ○ Protection sub-Committee (PC) will finalize a plan for PSS tuning which will be got vetted from ERPC. ○ PSS tuning exercises may be explored for funding from capped pool fund. ○ Workshop(s) will be arranged to create awareness on PSS tuning. <p>Protection sub-Committee will decide on periodicity of checking and it will also constitute a sub-group for checking of PSS.</p>

<p>(n) Automatic Under Frequency Relay and Df/Dt relay</p> <ul style="list-style-type: none"> • RPC shall decide and intimate the action required by SEB, distribution licensee and STUs to get required load relief from Under Frequency and Df/Dt relays. All SEB, distribution licensee and STUs shall abide by these decisions. • RLDC shall keep a comparative record of expected load relief and actual load relief obtained in Real time system operation. A monthly report on expected load relief vis-a-vis actual load relief shall be sent to the RPC and the CERC. • RLDC shall inform RPC Secretariat about instances when the desired load relief is not obtained through these relays in real time operation. • SLDC shall furnish monthly report of UFR and df/dt relay operation in their respective system to the respective RPC. • RPC Secretariat shall carry out periodic inspection of the under frequency relays and maintain proper records of the inspection. 	<p>Protection sub-Committee will decide plans, which will be reviewed half-yearly. These plans will be placed before ERPC.</p> <p>ERLDC will submit the report to ERPC Secretariat for discussion in OCC meeting.</p> <p>ERLDC will inform about the instances in OCC meeting.</p> <p>SLDC shall furnish monthly report to ERPC Secretariat by 7th of every month.</p> <p>Protection sub-Committee will decide method for testing of correctness of UFR relay setting and the periodicity of inspection. It will also constitute a small group to carry out inspection.</p>
<p>(o) System Protection Schemes (SPS)</p> <ul style="list-style-type: none"> • Such schemes would be finalized by the concerned RPC forum and shall always be kept in service. 	<p>Protection sub-Committee will finalize such scheme as and when needed and will be got vetted from ERPC.</p>

<p>(t) Voltage Control Measures</p> <p>All Users, CTU and STUs shall provide adequate voltage control measures through voltage relay as finalized by RPC, to prevent voltage collapse.</p>	<p>Protection sub-committee will finalize such scheme and will be got vetted from ERPC.</p>
<p>5.6.2 Procedure for Operational Liaison</p> <ul style="list-style-type: none"> • Forced outages of important network elements in the grid shall be closely monitored at the RPC level. 	<p>Any forced outage of important network elements will be discussed in OCC meeting.</p>
<ul style="list-style-type: none"> • RPC shall send a monthly report of prolonged outage of generators or transmission facilities to the Commission. 	<p>ERPC Secretariat will send the report to the Commission after deliberation in OCC.</p>
<p>5.7.4 Outage Planning Process</p> <ul style="list-style-type: none"> • The RPC Secretariat shall be primarily responsible for finalization of the annual outage plan for the following financial year by 31st January of each year. • All SEBs/STUs, transmission licensees, CTU, ISGS IPPs, MPPs and other generating stations shall provide RPC Secretariat their proposed outage programmes in writing for the next financial year by 30th November of each year. 	<p>ERPC Secretariat shall prepare the outage plan(s) for generating stations.</p> <ul style="list-style-type: none"> ○ Each utility shall submit its outage programme by 30th November of each year. ○ ERPC Secretariat shall prepare first draft outage plan for the region by 31st December for further consideration. ○ ERPC Secretariat shall issue the final outage plan by 31st January. ○ This final outage plan will be sent to CEA and may be modified considering CEA's view.

<ul style="list-style-type: none"> • RPCs shall submit quarterly , half-yearly reports to the Commission indicating deviation in outages from the plan along with reasons .These reports shall also be put up on the RPC website. 	<p>During finalizing of shutdown plans in OCC, constituents must indicate the reason for deviation from annual outage plan, if any. ERPC Secretariat will compile and submit the same to commission. The deviation report will be placed before ERPC.</p>
<p>6.4 Demarcation of responsibilities:</p> <ul style="list-style-type: none"> • RLDC shall periodically review the actual deviation from the dispatch and net drawal schedules being issued, to check whether any of the regional entities are indulging in unfair gaming or collusion. • In case any such practice is detected, the matter shall be reported to the Member Secretary, RPC for further investigation/action. 	<p>The word “periodically” means weekly.</p> <p>ERLDC will submit the report on weekly basis to Member Secretary, ERPC.</p>

ITEM NO. 2: ISSUES RAISED BY ERLDC

ERLDC made a presentation on IEGC -2010 giving an over-view of the important aspects, highlighting the major changes and pointing out the implementation issues and action to be taken on these aspects/issues by the constituents. The points which are to be noted by constituents or action to be taken are summarized below:

- Reporting of non-compliance[1.5(i)]

ERLDC pointed out that this was an important change in IEGC-2010 wherein RLDCs were empowered to report directly to CERC, instances of serious or repeated violation of any of the provisions of the IEGC and incidences of persistent non-compliance of the directions of the RLDCs.

This was for information of the members.

- Cyber security framework[4.6.5]

ERLDC pointed out that as per IEGC-2010, all utilities should have in place a cyber security framework to identify the critical cyber assets and protect them.

Constituents were requested to take suitable action w.r.t above.

- Reactive Power Compensation[4.6.1(b)]

It was highlighted by ERLDC that additional reactive compensation is to be provided by users connected to Grid as per the quantum and time frame decided by respective RPC in consultation with RLDC. The Users/STUs are also to provide information to RPC and RLDC regarding the installation and healthiness of the reactive compensation equipment on regular basis.

Constituents were requested to note the same for furnishing of data.

- Data & communication facilities[4.6.2]

ERLDC mentioned that all Users, STUs and CTU would need to provide speech & data telemetry systems for ensuring adequate/reliable communication & to telemeter power system parameters such as flow, voltage and status of switches/ transformer taps etc.

This was for information & action by constituents.

- System recording instruments[4.6.3]

It was pointed out by ERLDC that recording instruments such as Data Acquisition System / Disturbance Recorder / Event Logging Facilities / Fault Locator (including time synchronization equipment) would have to be provided and kept in working condition in the ISTS system. Also, all users/STUs/CTU should provide all the requisite recording instruments and shall always keep them in working condition.

This was for information & action by constituents.

- System security aspects[5.2(d)]

ERLDC pointed out that as per the above clause in case of tripping of any of the important elements of Regional grid, the matter is to be reported to RLDC as soon as possible, say within ten minutes of the event and RLDC in turn has to inform the same to NLDC/Regional entities affected.

This was for information & action by constituents.

- Restricted Governor mode of operation[5.2(f)]

ERLDC pointed out that RGMO is to be implemented w.e.f 01/08/10 as per IEGC-2010. The salient features of RGMO are mentioned below:

- All Thermal generators of 200MW & above and all hydro generators of 10MW and above
- All other generating units including hydro units of pondage upto 3 hours, Gas turbine/Combined Cycle Power Plants, wind and solar generators and Nuclear Power Stations shall be exempted
- Implementation w.e.f 01/08/10
- No reduction of generation for any rise of frequency below 50.20Hz
- For any fall in frequency generation should increase by 5% subject to 105% of MCR for Thermal & 110% of MCR for hydro and machine capability.
- Ripple filter:: +/- 0.03 Hz
- Droop:: 3% to 6%
- No attempt shall be made to suppress the normal governor action by use of load limiters/time delays/increasing dead bands or in any other manner.

ERLDC mentioned their requirements w.r.t. implementation of the above RGMO:

- Type & make of the units
- Weekly RGMO certification of generating units
- Graphs of MW Vs Frequency & other relevant parameters e.g. Control valve position
- Percentage droop & dead bands(if any)

Constituents were requested to formulate action plan for implementation.

- System security aspects[5.2(h)]

ERLDC mentioned that as per the above clause all thermal generating units of 200 MW and above and all hydro units of 10 MW (excluding those out of ambit of FGMO) and above operating at or up to 100% of their Maximum Continuous Rating (MCR) should be capable of picking up to 105% and 110% of their MCR , respectively, when frequency falls suddenly. Again the generating unit may ramp back rate of about one percent (1%) per minute, in case continued operation at the increased level is not sustainable. Any generating unit not complying with the above requirements, shall be kept in operation (synchronized with the Regional grid) only after obtaining the permission of RLDC.

This was for information & action by constituents.

- System security aspects[5.2(j)]

ERLDC mentioned that as per the above clause no user should Except under an suddenly reduce his generating unit output by more than one hundred (100) MW) without prior intimation to and consent of the RLDC, particularly when frequency is falling or is below 49.5 Hz. Similarly, no User / SEB shall cause a sudden variation in its load by more than one hundred (100 MW) without prior intimation to and consent of the RLDC.

This was for information & action by constituents.

- System security aspects[5.2(k)]

As per the above clause all generating units shall normally have their automatic voltage regulators (AVRs) in operation. In particular, if a generating unit of over fifty (50) MW size is required to be operated without its AVR in service, the RLDC shall be immediately intimated about the reason and duration, and its permission obtained. Also, power System Stabilizers (PSS) in AVRs of generating units (wherever provided), shall be

got properly tuned by the respective generating unit owner as per a plan prepared for the purpose by the CTU/RPC from time to time.

This was for information & action by constituents.

- System security aspects[5.2(n)]

W.r.t above clause regarding UFRs ERLDC pointed out that all SLDCS and Constituents may

- Confirm the status of their UFR by giving feeder-wise details of loads to be shed under UFR scheme.
- Agree to connect double the load as mentioned in the scheme
- Send report on UFR operations as and when called upon to operate and a monthly consolidated report.

The above issue was discussed and members agreed to furnish requisite information & examine the proposal of connecting double the load.

- System protection schemes[5.2(o)]

ERLDC pointed out that as per the above clause in case any SPS is to be taken out of service, permission of RLDC shall be obtained indicating reason and duration of anticipated outage from service.

This was for information & action by constituents.

- Furnishing of DR/EL printouts[5.2(o)]

ERLDC mentioned that as per the above clause, DR/EL/Relay indications & all pertinent information to be sent to RLDC within one week of disturbance/event.

This was for information & action by constituents.

- Furnishing of data for calculation of TTC/ATC on a 3 month ahead basis[5.3(h)]

ERLDC pointed out that as per the above clause, in order to facilitate estimation of Total Transfer Capability /Available Transfer Capability on three month ahead basis , the SLDC shall furnish estimated demand and availability data to RLDCs.

This was for information & action by constituents.

- Demand disconnection[5.4.2]

ERLDC mentioned that the following w.r.t Demand Mangement (5.4):

- Action initiation to restrict drawal as per schedule when system frequency < 49.70Hz
- Requisite load shedding to ensure no over-drawal < 49.50Hz
- Formulation of contingency procedures and arrangements for demand disconnection
- State-of-art / Automatic demand mgmt. schemes e.g. rotational load shedding, demand response
- Interruptible loads to be divided into 4 non-over-lapping groups::
 - Scheduled load shedding
 - Unscheduled load shedding
 - UFR & df/dt based load shedding
 - SPS based load shedding
- Schemes & periodic progress reports regarding above to be sent to CERC
- Contingency procedures to be formulated & demand disconnection arrangements(feeder) to be identified
- In case of matter involving system security any RLDC instruction w.r.t curtailment of drawal is to be immediately complied

This was for information & action by constituents.

- Demand disconnection[5.4.2]

ERLDC pointed out that as per the above clause RLDCs shall devise standard, instantaneous, message formats in order to give directions in case of contingencies and /or threat to the system security to reduce overdrawl by the bulk consumer , SLDC/ State at different overdrawal conditions depending upon the severity of the overdrawal. The concerned SLDC shall ensure immediate compliance with these directions of RLDC and send a compliance report to the concerned RLDC. ERLDC also mentioned the following guidelines of issuing of category A, B and C messages (SCADA data would be used for issuance of messages):

Type of message	Condition of issuing messages
A	Message 'A' would be issued to an overdrawing state(s) if the frequency is less than 49.7 HZ and the UI is more than 40 MW or above 12% of schedule (whichever is maximum) and there is a downward trend in frequency.

B	<p>Message 'B' would be issued under following conditions:</p> <ul style="list-style-type: none"> ➤ Frequency is less than 49.50 Hz <li style="padding-left: 40px;">And ➤ UI is more than 40 MW or above 12% of schedule (whichever is maximum), for more than the last 10 minutes or UI is more than 300 MW for last 5 minutes <p>'A' message may generally be issued prior to 'B' messages (not mandatory). However, in case of sudden increase in overdrawl by a state and sharp fall in frequency and /or repeated instances of overdrawl at frequency below 49.50 Hz., 'B' message may by issued independent of 'A' message and/or without waiting for the given time period.</p>
C	<p>Message 'C' would be issued under following conditions:</p> <ul style="list-style-type: none"> ➤ Frequency is less than 49.50 Hz <li style="padding-left: 40px;">and ➤ UI is more than 40 MW or above 12% of schedule (whichever is maximum), for more than the last 20 minutes or UI is more than 300 MW for last 15 minutes <li style="padding-left: 40px;">Or ➤ Repeated instances of overdrawl are being observed under frequency <49.50 Hz <p>'C' message would generally be issued after a 'B' message. 'C' Msg. may be also issued independently e.g. in case of sudden increase in the overdrawl by a state and sharp fall in frequency and / or repeated instances of overdrawl at frequency below 49.50 Hz., 'C' message may be issued independent of 'B' message and / or without waiting for the given time period. Compliance to be reported by SLDC to RLDC.</p> <p>Cat.-C messages would be counted as instances of violation of RLDC instructions and reported to CERC</p>

This was for information & action by constituents.

- Demand disconnection[5.4.2(i)]

ERLDC mentioned that as per the above clause The measures taken by the User's, SLDC SEB/distribution licensee or bulk consumer shall not be withdrawn as long as the frequency remains at a level lower than the limits or congestion continues.

This was for information & action by constituents.

- Compliance reporting by SLDCs[5.5.1(c)(h)]

ERLDC pointed out that Non-compliance of instructions of SLDC by SEB/distribution licenses / bulk consumers , to curtail drawal resulting in non-compliance of IEGC is to be reported for incorporation in weekly reports of ERLDC.

This was for information & action by constituents.

- Recovery procedures[5.8]

ERLDC mentioned the following regarding recovery procedures:

- Mock trial runs of the procedure for different subsystems shall be carried out by the Users/CTU/STU at least once every six months under intimation to the RLDC
- Diesel Generator sets for black start would be tested on weekly basis and test report shall be sent to RLDC on quarterly basis

This was for information & action by constituents.

- 5.9.6(c):Form of written reports:

ERLDC mentioned that as per Sl. No (vii) of the format the following are to be furnished with the reports:

“vii) All Relevant system data including copies of records of all recording instruments including Disturbance Recorder, Event Logger, DAS etc.”

This was for information & action by constituents.

- 6.5.21:: Revision of schedule in case of fuel shortage

RLDC mentioned that as per the above clause, the schedule of thermal generating stations indicating fuel shortage while intimating the Declared Capacity to the RLDC shall not be revised except in case of forced outage of generating unit except gas based ISGS (this gas may be diverted to another unit).

This was for information of the constituents.

Apart from emphasizing above mentioned points, ERLDC gave a detailed presentation of part 5(Operating Code) and part 6(Scheduling and Despatch Code of amended IEGC) and discussed all points of Part 5&6 in details including addendum and corrigendum issued subsequently.

ITEM NO. 3: ISSUES RAISED BY WBSETCL

In the 51st OCC meeting, WBSETCL suggested that could also be regularly discussed in OCC meeting. It was agreed to discuss this proposal in this IEGC meeting.

Members decided that upcoming generation/transmission projects would be regularly discussed in OCC meeting.

Meeting ended with thanks to the Chair.
