Email: cenpccea@gmail.com

भारत सरकार
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केंद्रीय विद्युत प्राधिकरण
राष्ट्रीय विद्युत समिति
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वैबसाइट / Website: www.cea.nic.in

[ISO 9001:2008]

No. 4/MTGS/NPC/CEA/2016/ 341 - 360

Date: 30th March 2016

To,

As per the list of addressee

Subject: **Agenda Notes for the fifth meeting of the NPC.**

Sir,

In continuation to NPC letter dated 28th March 2016, Agenda Notes for the fifth meeting of the NPC scheduled to be held **on 08th April, 2016 at 11:00 AM at ERPC Secretariat Kolkata** is enclosed for kind information please. The same is also available on CEA web site.

Encl: as above

Yours faithfully

30/3/16

(**D.K.Srivastava**)
Director (NPC)

List of Addressee for 5th Meeting of NPC

1. Shri Rakibul Hussain, Chairperson, NERPC & Hon'ble Power Minister of Government of Assam, Assam secretariat, Dispur, Guwahati-781006.
   Email: rockybulhussain@rediffmail.com
2. Shri P.C.Negi, Chairperson, NRPC & Managing Director, Himachal Pradesh State Electricity Board Limited, Vidyut Bhawan, Kumar House, Shimla-171004.
3. Shri M.Sivasankar, Chairperson, SRPC & CMD, KSEBL, Vydyuthi Bhavan, Pattom, Thiruvanthapuram-695 004. **Email:** cmkseb@ksebnet.com
4. Shri Shivraj Singh, IAS(Retd.), Chairman, WRPC & Chairman, Chattisgarh State Power Companies Limited, Vidyut Sewa Bhawan, 2nd Floor, P.O. Sundar Nagar, Raipur-492013. **Email:** shivraj@nic.in
5. Shri N.S.Nigam, Chairperson, ERPC & CMD, WBSEDCL, Vidyut Bhavan, 7th Floor, Bidhannagar, Sector-II, Kolkotta-700091. **Email**: cmdwbsedcl@gmail.com
6. Shri R.L.Baruah, Chairperson, TCC (NERPC) & Managing Director, APDCL, Bijuli Bhawan, Guwahati-781001.**Email**: md-apdcl@apdcl.gov.in
7. Shri R.K.Sharma,Chairman, TCC (NRPC) & Director (Tech), HPSEB, Vidyut Bhawan, Kumar House, Shimla-171004.
8. Smt. P.Vijayakumari, Chairperson, TCC (SRPC) & Director (Tr. & System Opn.), KSEBL, Vydyuthi Bhavan, Pattom, Thiruvanthapuram-695 004. **Email:** mtkseb@ksebnet.com
9. Shri Shashi Bhushan Agrawal, Chairman, TCC (WRPC) & Managing Director, CSPGCL, Vidyut Sewa Bhawan, 2nd Floor, P.O. Sundar Nagar, Raipur-492013. **Email:** mdgenco@cseb.gov.in
10. Chairperson, TCC (ERPC) & Director (Operation), WBSEDCL, Vidyut Bhavan, 7th Floor, Bidhannagar, Sector-II, Kolkotta-700091.
11. Shri P.S.Mhaske, Member Secretary, NRPC, 18-A, S.J.S.S. Marg, Katwaria Sarai, New Delhi-110066. **Email:** msnrpc1@yahoo.com
12. Shri S. D. Taksande, Member Secretary, WRPC, Plot No. F-3, MIDC Area Marol, Andheri (East), Mumbai-400093. **Email:** ms-wrpc@nic.in
13. Shri A.K. Bandyopadhyay, Member Secretary, ERPC, 14, Golf Club Road, ERPC Building, Tolly Gunge,Kolkata-33.**Email:** mserpc-power@nic.in
14. Shri S. R. Bhat, Member Secretary, SRPC, No.29, Race Course Cross Road, Bengaluru-560 009 **Email:** mssrpc@yahoo.com
15. Shri P.K.Mishra, Member Secretary, NERPC, NERPC Complex, Dong Parmaw, Lapalang Shillong-793006, E-mail: nerpc@ymail.com

Special Invitees:

16. Chief Engineer, GM, CEA, New Delhi
17. CEO, POSOCO, B-9, Qutab Institutional area, Katwaria Sarai, New Delhi -110016.
18. Director (Operation), PGCIL, Saudamini, Plot No.2, Sector-29,Guragon-122001

Copy for Kind information to:

1. Chairperson, CEA, New Delhi
2. Member (G&OD), CEA, New Delhi

Email: cenpccea@gmail.com

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[ISO 9001:2008]

No. 4/MTGS/NPC/CEA/2016/ 354-360

Date : 30-03-2016

विषय: **एन. पी. सी. की पांचवी बैठक के कार्यसूची के सम्बन्ध मे|**

महोदय,

उपरोक्त विषय से सम्बन्धित दस्तावेज आपकी जानकारी एवम आवश्यक कार्यवाही हेतु संलग्न है|

संलग्नक : यथोपरि

भवदीय
30/3/16
(धी.कु.श्रीवास्तव)
निदेशक (एन. पी. सी)

To.

1. Shri Rakibul Hussain, Chairperson, NERPC & Hon'ble Power Minister of Government of Assam, Assam secretariat, Dispur, Guwahati-781006.
2. Shri P.C.Negi, Chairperson, NRPC & Managing Director, Himachal Pradesh State Electricity Board Limited, Vidyut Bhawan, Kumar House, Shimla-171004.
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18. Director (Operation), PGCIL, Saudamini, Plot No.2, Sector-29,Guragon-122001

Copy for Kind information to:

1. Chairperson, CEA, New Delhi
2. Member (G&OD), CEA, New Delhi

CENTRAL ELECTRICITY AUTHORITY
NATIONAL POWER COMMITTEE

AGENDA NOTES FOR THE FIFTH MEETING OF NATIONAL POWER COMMITTEE TO BE HELD ON 08th APRIL 2016 AT KOLKOTA

1. CONFIRMATION OF MINUTES OF 4TH MEETING

The Minutes of 4th meeting of NPC held on 10th December 2015 was circulated vide letter No. 4/MTGS/NPC/CEA/2015/132-151 dated 01.01.2016. No comments have been received from any of the members.

The Minutes may kindly be confirmed.

2. ACCOUNTING METHODOLOGY FOR BILATERAL SHORT TERM AND COLLECTIVE TRANSACTION IN CASE OF GRID DISTURBANCES

As per the Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Second Amendment) Regulations, 2014, for Bilateral short term and collective transactions, the methodology of settlement of accounts for the period of Grid Disturbance shall be formulated by National Power Committee (NPC) and same shall be put up to the Commission for approval. The methodology shall cover all possible scenarios with illustrative examples to cover the instances where the Grid disturbance is either partial or it affects only one region.

This issue was deliberated in the 4th Meeting of NPC, wherein it was decided that Working Group at the level of SE/EE of the RPCs, who deal with the work of regional energy accounting, would examine & discuss possible options for treatment of bilateral short term and collective transactions in case of grid disturbances and submit its recommendations within two months for consideration of NPC at its next meeting.

Accordingly, a Working Group comprising representatives from CEA, Secretariat of RPCs/NPC and NLDC was constituted to finalize methodology of settlement of accounts for bilateral short term and collective transactions for the period of Grid Disturbance. The Working Group met on 16th February 2016 at NRPC, New Delhi. The methodology proposed by the Working Group is at **Annexure-I.**

NPC may deliberate and approve the accounting methodology.

3. ISSUES PROPOSED BY GRID MANAGEMENT DIVISION

GM Division vide letter dated 08th March 2016 (**Annexure-II**) has proposed the following issues for deliberation:

a) Special Invitee / Membership Status to M/s PTC in all Regional Power Committees

b) Standardization of data in regards to allocation of Power Orders on RPCs' websites

Members may please discuss and finalise

4. TRANSFER CAPABILITY DETERMINATION BY THE STATES

In order to ensure, safe and secure operation of the grid, the states should carry out the power system study for operational planning and power transfer capability through their respective transmission links with the rest of the grid.

It was decided in the 4th meeting of NPC that to begin with, power system study for assessment of operational limits / power transfer capability for each state will be done by the concerned RLDC in association with concerned SLDC. Monthly TTC/ATC will be uploaded by the SLDCs at their respective websites and also communicated to concerned RLDC & NLDC subsequently.

RPCs may apprise the Committee on the follow up action taken in this regard.

5. REASONS FOR DEMAND - SUPPLY GAP AND ITS VARIATION

It was deliberated in the 4th NPC meeting that monthly power supply position prepared & published by CEA based on the data furnished by the states reflected shortages in almost all the states. However, a number of those states intimated adequate availability of power. This meant that the deficit/shortage in such states was actually not the deficit in true sense but demand-supply gap due to reasons other than shortage of power. The other reasons for the demand-supply gap could be inadequate availability of power, transmission constraint, distribution constraint, financial constraint, etc. The reason for demand-supply gap needed to be clearly mentioned to reflect true picture of power supply position in different states and also to invite attention of various agencies including policy makers to the specific problem areas in the power sector for suitable solution.

It was agreed by all the RPCs to advise the states in their respective regions to intimate broad break-up of demand-supply gap due to various reasons, or at least, the main reason(s) for demand-supply gap in each month.

RPCs may apprise the Committee on the follow up action taken in this regard.

6. REACTIVE POWER PLANNING

In the 4th meeting of NPC, it had been agreed that states should adopt a proactive approach in the matter of reactive power planning, and that the provisions regarding reactive power planning similar to those mandated in the IEGC for the CTU should be included in the

respective State Grid codes. **It was decided that RPCs would follow up the matter further with the states.**

RPCs may apprise the Committee on the follow up action taken in this regard.

7.(A) ENSURING PROPER FUNCTIONING OF UNDER FREQUENCY RELAYS (UFRs) & df/dt RELAYS

In the 4th meeting of NPC, it had been agreed that inspection of one-third number of total relays in a region, at least 20% of the under frequency relays installed in the respective regions should be physically inspected by respective RPCs in each year besides self-certification by the STUs. Regarding self-certification by the STUs regarding healthiness of the UFRs as per the procedure / checklist proposed by NRPC, **other RPCs was to forward their comments / suggestions to NPC for evolving a uniform procedure across the states at the next meeting.**

7.(B) OBSERVATION ON PRESENT UFR SETTING BY HONB'LE CERC ORDER DATED 27.11.2015 IN PETITION No.113/MP/2014

Quote:

"We feel that the present UFR setting are quite low considering the normal range of operation of the grid between 49.9 Hz to 50.05 Hz. National power Committee should review the setting of UFR and df/dt, if required considering the above aspect and submit a report to the Commission in this regard."

Unquote.

Members may deliberate

8. AUTOMATIC UNDER FREQUENCY LOAD SHEDDING (AUFLS) SCHEME

In the 2nd meeting of NPC, it was decided to implement the following AUFLS scheme with 4 stages of frequency viz. 49.2, 49.0, 48.8 & 48.6 Hz:

Frequency (Hz)	Load relief in each region (in MW)				
	NR	WR	SR	ER	NER
49.2	2160	2060	2350	820	100
49.0	2170	2070	2360	830	100
48.8	2190	2080	2390	830	100
48.6	2200	2100	2400	840	100
Total	**8720**	**8310**	**9500**	**3320**	**400**

The following had been noted in the 4th meeting of NPC held on 10th December 2015:

- NRPC had intimated that all the states except Chandigarh and J&K had implemented the above load-relief scheme. Chandigarh had implemented AUFLS scheme at 49.2 and 49.0 Hz only and J&K was yet to implement the same.
- ERPC & NERPC had informed that all the states in their respective region had implemented the scheme.

- SRPC & WRPC intimated that the scheme had been implemented in their region and it was designed to provide even higher load-relief than that required under the scheme. SRPC mentioned that the scheme in SR states had been implemented by selecting the feeders in such a fashion that average load-relief - not the peak load-relief - provided by those feeders through the UFRs was equivalent to the load-relief required to be provided under the AUFLS scheme. WRPC stated that in WR, except Goa (for about 30 MW load-relief), all states had implemented the scheme.

- NPC had expressed satisfaction that barring a few states, the revised AUFLS scheme had been implemented by the states in the country. It was decided that the RPCs would take up the matter of implementation of the scheme with the states which had not so far implemented the same and inform the progress at the next meeting.

RPCs may apprise the Committee on the follow up action taken in this regard

9. POWER SWING BLOCKING (PSB) SETTING IN DISTANCE RELAYS

The following had been noted in the 4th Meeting of NPC:

- ✓ NRPC had constituted a group to make recommendations on the Power Swing Blocking (PSB) feature in the distance relays. The group recommended that PSB should be applied in all zones of distance relay and Out of Step (OOS) relaying should be employed on all inter-regional lines at both ends. NRPC had requested that the matter be deliberated at NPC forum for uniform implementation of the recommendations of the expert group.
- ✓ The two options have been proposed by Ramakrishna Task Force in regard to protection from Power Swing:
  - Option 1: Block all Zones except Zone-I - Applies blocking signal to the higher impedance zones of distance relay and allow Zone-I to trip if the swing enters its operating characteristic.
  - Option 2: Block all Zones and Trip with Out of Step (OOS) Function - applies a blocking signal to all zones of distance relay and order tripping if the power swing is unstable using the OOS function.
- ✓ It was noted that all RPCs except NRPC had adopted option 1 above. Explaining the ground for adopting option 2, NRPC stated that adopting Option 1 used to lead to frequent trippings of transmission lines. However, with Option 2, the trippings had been contained.
- ✓ PGCIL had informed that both the options were being used by them in their various transmission lines. OOS relay was installed at all inter-regional lines of Northern region. However, adoption of Option 2 requires proper system study to identify feeders where OOS relay could be deployed.
- ✓ NPC while agreeing to NRPC's opinion to have a uniform PSB setting across all regions, decided to maintain status quo in different regions and wait for the report of the Consultant appointed for implementation of the recommendations of the 'Task Force for Power System Analysis under contingencies' before further deliberations in the matter.

POSOCO may apprise the status of Consultant (A) report.

10. REVIEW OF df/dt RELAYS

The following had been noted in the 4th Meeting of NPC:

- The Committee had opined that in the event of a sudden loss of generation or any grid disturbance, the rate of fall of frequency would vary from one location to another, and it would also vary from one point of time to another at a particular location depending upon the distance from the location of the fault. Therefore, there could be no uniform setting of df/dt relays in different regions. In view of this, NPC had decided that settings would be determined by each RPC separately after detailed study of load and generation balance in different areas of the region and communicate the same to the Committee for ratification. NRPC was of the view that Consultant may be appointed to analyse the location of df/dt relays.
- It was decided that POSOCO would examine the possibility to include the study regarding settings / location of df/dt relays under emergency measures (in the event of sudden loss of generation or any grid disturbance) by the international consultant had been appointed by POWERGRID / POSOCO to review power transfer capability, operational planning etc.

POSOCO/PGCIL may apprise the Committee.

11. REVIEW OF AUTOMATIC UNDER-FREQUENCY RELAY BASED LOAD-SHEDDING SCHEME (AUFLS)

In the 4th Meeting, NPC had decided to maintain status quo in respect of AUFLS. It was also agreed by the RPCs to initiate the process of mapping of feeders covered under AUFLS scheme like SRPC with a view to ensuring proper implementation of the scheme and also have a real time assessment of load-relief likely to be available under the scheme if it operated.

RPCs may like to update the status of mapping of feeders.

12. POWER SYSTEM STABILIZERS (PSS) TUNING

The Enquiry Committee constituted by GoI to enquire into grid disturbances of July 2012 had recommended proper tuning of electronic devices and PSS of generators. Accordingly, NRPC submitted their recommended procedure to NPC for comments / adoption by other RPCs so as to bring uniformity across all the regions.

In the 4th Meeting of NPC, it was agreed that other RPCs would examine the proposal of NRPC and would revert back in the next NPC meeting.

RPCs are requested to forward their observations.

13. SCHEME FOR STORAGE AND MANAGEMENT OF PROTECTION SYSTEM DATA BASE

Ramakrishan Task Force Report on Power System Analysis Under Contingencies has recommended for creation of data base for relay settings

Quote: "There is also a need for creating and maintaining data base of relay settings. Data regarding settings of relays in their network should be compiled by the CTU and

STUs and furnished to the RLDC and SLDC respectively and a copy should also be submitted to RPC for maintaining the data base."

ERPC has prepared scheme for above purpose for funding from PSDF. The scheme has been approved by MoP. SRPC has also submitted the scheme for similar purpose. Other RPCs are also requested to initiate the preparation of above scheme to implement the recommendations of the Ramakrishna task Force. It is informed that the Ramakrishna task Force report has been accepted by MoP and all its recommendations are to be implemented.

Members may like to deliberate.

14. TARGET FIXED FOR LOAD RELIEF FROM OPERATION OF DEFENSE MECHANISM

This item proposed by NRPC was not discussed in the 4th meeting of NPC due to paucity of time. In view of the difficulty expressed by Punjab that load relief from UFRs will be much less than target fixed for them, NRPC has desired deliberation by NPC to decide the criteria for fixing target for UFR based load shedding for individual state. The issue submitted by NRPC is at **Annexure-III.**

The committee may like to deliberate.

15. ANY OTHER ISSUE WITH PERMISSION OF CHAIR

16. DATE AND VENUE OF NEXT NPC MEETING

****

ANNEXURE-I

Methodology for Settlement of Accounts for the Period of Grid Disturbance for Bilateral Short Term and Collective Transactions

Working Group-NPC

New Delhi,
March, 2016

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Methodology for Settlement of Accounts for the Period of Grid Disturbance for Bilateral Short Term and Collective Transactions

1. Introduction

Central Electricity Regulatory Commission (Indian Electricity Grid Code) (Second Amendment) Regulations, 2014, 6.5.17 stipulates as follows:

'.....

For Bilateral short term and collective transactions, the methodology of settlement of accounts for the period of Grid Disturbance shall be formulated by National Power Committee(NPC) and same shall be put up to the Commission for approval. The methodology shall cover all possible scenarios with illustrative examples to cover the instances where the Grid disturbance is either partial or it affects only one region.'

This issue was deliberated in the 4th Meeting of NPC, wherein it was decided that a Working Group be constituted to examine & discuss possible options for treatment of bilateral short term and collective transactions in case of grid disturbances and submit its recommendations within two months for consideration of NPC in its next meeting.

Accordingly, a Working Group comprising representatives from CEA, Secretariat of RPCs/NPC and NLDC was constituted to finalize Methodology of settlement of accounts for bilateral short term and collective transactions for the period of Grid Disturbance.

The Working Group met on 16th February 2016 at NRPC, New Delhi to finalise the modalities.

2. Objective

As per "Central *Electricity Regulatory Commission (Indian Electricity Grid Code) (Second Amendment) Regulations, 2014: Regulation 6.5.17*

"In case of any grid disturbance, scheduled generation of all the ISGSs supplying power under long term / medium term/short term shall be deemed to have been revised to be equal to their actual generation and the scheduled drawals of the beneficiaries/buyers shall be deemed to have been revised accordingly for all the time blocks affected by the grid disturbance. Certification of grid disturbance and its duration shall be done by the RLDC.

The declaration of disturbance shall be done by the concerned RLDC at the earliest. A notice to this effect shall be posted at its website by the RLDC of the region in which the

disturbance occurred. Issue of the notice at RLDC web site shall be considered as declaration of the disturbance by RLDC. All regional entities shall take note of the disturbance and take appropriate action their end.

.....“

It could be inferred that for the period of grid disturbance, ISGS (a central generating station or other generating station, in which two or more states have shares) is not liable for any deviation from the dispatch schedule and the commercial settlement is based on actual injection at the applicable energy charges of the ISGS. But the beneficiaries are liable for the deviations on account of the revised schedule of ISGS for the period of grid disturbance also.

It was observed that the methodology as in the case of ISGSs supplying power under long term / medium term/short term could not be adopted for ISGSs / IPPs/Sellers supplying power under collective transactions, since one to one correlation between buyers and sellers could not be established for collective transactions. For such cases, a methodology without revising collective transaction schedules of beneficiaries / buyers needed to be evolved.

3. Definitions

<u>As per Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 and</u> (Deviation Settlement Mechanism and related matters) Regulations, 2014.

- “Beneficiary” means a person who has a share in an ISGS;
- “Bilateral Transaction” means a transaction for exchange of energy (MWh) between a specified buyer and a specified seller, directly or through a trading licensee or discovered at Power Exchange through anonymous bidding, from a specified point of injection to a specified point of drawal for a fixed or varying quantum of power (MW) for any time period during a month;
- “Buyer” means a person, including beneficiary, purchasing electricity through a transaction scheduled in accordance with the regulations applicable for short-term open access, medium-term open access and long-term access;
- “Collective Transaction” means a set of transactions discovered in power exchange through anonymous, simultaneous competitive bidding by buyers and sellers;
- “Control Area” means -an electrical system bounded by interconnections (tie lines), metering and telemetry which controls its generation and/or load to maintain its interchange schedule with other control areas whenever required to do so and contributes to frequency regulation of the synchronously operating system;
- “Despatch Schedule” means the ex-power plant net MW and MWh output of a generating station, scheduled to be exported to the Grid from time to time;

- "Drawal Schedule" means the summation of the station-wise ex-power plant drawal schedules from all ISGS and drawal from/injection to regional grid consequent to other long term access, medium term and short term open access transactions;
- "Independent Power Producer (IPP)" means -a generating company not owned/ controlled by the Central/State Government;
- "Inter-State Generating Station (ISGS)" means -a Central generating station or other generating station, in which two or more states have Shares;
- "Long –term Access (LToA)" means- the right to use the inter-State transmission system for a period exceeding 12 years but not exceeding 25 years;
- "Medium-term Open Access (MToA)" means -the right to use the inter- State transmission system for a period exceeding 3 months but not exceeding 3 years;
- "Power Exchange (PX)" means the power exchange which has been granted registration in accordance with CERC(Power Market Regulations), 2010 as amended from time to time;
- "Protection Coordination Sub-Committee" means a sub-committee of RPC with members from all the regional entities which decides on the protection aspects of the Regional Grid;
- "Regional Entity" means - such persons who are in the RLDC control area and whose metering and energy accounting is done at the regional level;
- "Regional Load Despatch Centre (RLDC) " means -the Centre established under sub-section (1) of Section 27 of the Act;
- "Seller" means a person, including a generating station, supplying electricity through a transaction scheduled in accordance with the regulations applicable for short-term open access, medium-term open access and long-term access;
- "Share" means percentage share of a beneficiary in an ISGS either notified by Government of India or agreed through contracts and implemented through long term access;
- "State Load Despatch Centre (SLDC)" means - the Centre established under subsection (1) of Section 31 of the Act;
- "State Transmission Utility (STU)" means- the Board or the government Company specified as such by the State Government under sub-section (1) of Section 39 of the Act.
- "Short-term Open Access (SToA)" -means open access for a period up to one (1) month at one time;

The Central Electricity Regulatory Commission in its Statement of Objects and Reasons in the matter of (Indian Electricity Grid Code) Regulations, 2010, it is clarified that the classification of the grid disturbances shall as per CEA (Grid Standards) Regulations.

It was observed that definition of "Grid Disturbance" needed to be inserted in the CERC (Deviation Settlement Mechanism and related matters) Regulation for the purpose of settlement of accounts for the period of grid disturbance. The proposed definition is as follows:

"Grid Disturbance"- means - tripping of one or more power system elements of the grid like a generator, transmission line, transformer, shunt reactor, series capacitor and Static VAR Compensator, resulting in total failure of supply at a sub-station or loss of integrity of the grid, at the level of transmission system at 220 kV and above (132 kV and above in the case of North-Eastern Region);

4. Scope

The procedure shall be applicable to regional entity affected by grid disturbance. RLDC shall certify the duration (indicating start date/ time block and end date/ time block) of grid disturbance and provide list of ISGS/IPPs/Sellers affected by the grid disturbance to RPC.

"*Provided that in case of state embedded ISGS/IPPs/Sellers,* supplying power to interstate/ inter regional buyers under LToA/MTOA/SToA/PX affected by grid disturbance *shall be certified by SLDC & RLDC jointly or the Protection Sub Committee of RPC for revision of schedules of such generators for the period of grid disturbance.*"

It was observed that there are enormous number of sellers/IPPs embedded in many states and it won't be feasible for RLDC to accommodate them for contributing to grid disturbances so ISGS / IPPs/Sellers embedded in STU system are not covered under this methodology since the deviation settlement of ISGS / embedded generators are being carried out by concerned SLDCs, as per the guidelines in vogue in the state. However, if the state embedded ISGS / IPPs/Sellers to be considered under this methodology, SLDC & RLDC jointly or the Protection Sub Committee of RPC shall certify the affected state embedded ISGS/IPPs/Sellers by the grid disturbance. The concerned SLDC shall communicate the revised schedule of such ISGS/IPPS/Sellers to RLDC who in turn forward the same to respective RPC for computation of revised schedule of concerned regional entity for preparation of accounts accordingly.

In case of ISGS / IPPs/Sellers embedded in STU System, under the control area of SLDC, supplying power to interstate/ inter regional buyers under LToA/MTOA/SToA/PX, role of RLDC shall be limited to incorporate the schedules furnished by SLDCs.

5. Methodology

5.1 <u>Pricing of Power during grid Disturbance:</u> It was observed that in case of grid disturbance, there could be multiple frequencies in the affected region/area resulting in different price vectors in different regions during the grid disturbances. Further, some of the entity may be forced to overdraw because of disturbances while some may not be able to draw power from grid. It is, therefore, proposed that to tackle different price vectors rate is required to be notified by Hon'ble CERC (could be based on average

purchase cost of power) for the purpose of deviation settlement of the affected regional entities by grid disturbance. Further, the deviation settlements of all generators affected during the particular grid disturbance is proposed to be delinked from frequency during the period of grid disturbances.

5.2 Revision of Schedule:

5.2.1 Priority in revision of schedules of LToA/MToA/SToA shall be as per the procedure approved by Hon'ble CERC for curtailment of power in real time congestion/curtailment.

5.2.2 Despatch Schedule of all the ISGSs/IPPs/Sellers (under the control area of RLDC) affected by grid disturbance shall be revised to be equal to their actual injection for the duration as certified by RLDC.

5.2.3 The excess injection by IPPS/Sellers above the dispatch schedule shall be settled at the rate applicable for the period of grid disturbance as notified by Hon'ble CERC.

5.2.4 PX schedules of beneficiaries/buyers shall not be revised since one to one correlation between buyers and sellers could not be established for collective transactions. The LToA/MToA/SToA schedules of beneficiaries /buyers shall be revised according to the revised schedules of ISGS/IPPs/Sellers.

5.2.5 In case of revision in PX schedules of ISGS/ IPPs/Sellers to match schedule with actual injection, then PX schedule of the ISGS/ IPPs/Sellers shall be revised without revising PX schedules of the beneficiaries/buyers. The excess payment received by the ISGS/ IPPs/Sellers shall be reimbursed to DSM Pool account by the ISGS/IPPs/Sellers. The concerned power exchange who facilitated the transaction would certify the excess (i.e the difference between PX schedule and actual injection) payment made to the generator which needs to be reimbursed. In case of multiple bids by the ISGS in one or more exchanges, the highest bids would be paid back.

5.3 Accounting:

5.3.1 Based on the revised LToA/MToA/SToA schedules of the ISGS / IPPS/Sellers, schedules of beneficiaries/buyers shall be computed. The deviation shall be settled as per the rate notified by CERC applicable for grid disturbance for the beneficiaries/ buyers in the affected area and for the beneficiaries/buyers in other region (not

affected by grid disturbance) at prevailing rates based on frequency without applying additional charges/capping.

5.3.2 Based on the data/inputs received from RLDCs, revisions of schedules for the period of grid disturbance shall be carried out by the Secretariat of RPCs under the provision of postfacto revision of schedules. In case of more than one region's schedules revision is involved, Secretariat of RPCs jointly shall finalize the interregional schedules of ISGS/IPPs/sellers/beneficiaries /buyers and prepare accounts accordingly.

6. Algorithm

I. RLDC shall furnish the list of ISGS / IPPs/Sellers and the control area affected by the grid disturbance to the respective RPC.

II. If ISGS injection with LToA transaction is more than dispatch Schedule during the period of grid disturbance, the LToA transaction shall be increased by RLDC in proportion to the quantum of excess injection.

III. If ISGS injection less than dispatch Schedule during the period of grid disturbance, the transactions other than collective transaction shall be revised by RLDC by reducing in proportion to the under injection as per the priority of access.

IV. For IPPs/Sellers, if the actual injection is more than dispatch Schedule, the excess generation shall be settled at the rates notified by Hon'ble CERC applicable for the period of grid disturbance.

V. For ISGS / IPPS/Sellers with collective transaction schedules, if the actual injection is less than dispatch schedule but more than PX schedule, then other schedules shall be reduced proportionality as per the priority of access. Starting with SToA then MToA then LToA, till the revised schedules equal to the actual injection.

VI. For ISGS / IPPS / Sellers with collective transaction schedules, if the actual injection is less than PX schedule, PX schedules shall be revised equal to the actual injection. If the schedules are from multiple Exchanges, the schedule transaction from the exchange where bid rates were higher would be considered for reimbursement first.

VII. The deviation by ISGS/IPPS/Sellers from PX schedule (difference in dispatch and revised PX schedule) shall be informed to the respective PX. PX intern communicate to

RPCs the amount to be recovered from the ISGS / IPPs/Sellers based on the market clearing price for the bid area.

VIII. Based on the revised LToA/MToA/SToA schedules of ISGS/ IPPS/Sellers, revised schedule of beneficiaries /buyers shall be computed without altering PX schedule.

IX. The ISGS/ IPPS/Sellers injected less than PX schedules shall reimburse the excess amount received from PX to the DSM Pool.

X. Deviation from revised schedule by the beneficiaries/ buyers with in the affected area would be settled at the rate applicable for grid disturbance period as notified by Hon'ble CERC without applying additional charges or capping.

XI. Deviation of the beneficiaries/ buyers (with respect to the computed revised schedules) outside the affected area shall be settled at deviation settlement rate (frequency based rate) without applying additional charges or capping.

7. Illustrative Examples

7.1 ISGS – with LToA/MToA/SToA schedules – Over Injection

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up	Remarks
ISGS	1000 MW	LToA - 500 MW MToA - 300 MW SToA - 200 MW	1100 MW	1100 MW	LToA - 600 MW MToA - 300 MW SToA - 200 MW	In line with IEGC Regulation 6.5.17

7.2 ISGS – with MToA/SToA schedules– Over Injection

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up	Remarks
ISGS	1000 MW	LToA - 0 MW MToA - 800 MW SToA - 200 MW	1100 MW	1100 MW	LToA - 100 MW MToA - 800 MW SToA - 200 MW	In line with IEGC Regulation 6.5.17 (Excess injection to be booked to beneficiaries with share)

Note: The excess injection shall not be booked to the beneficiary under power regulation

7.3 ISGS – with MToA/SToA schedules and without LToA– over Injection

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up	Remarks
ISGS	1000 MW	LToA - No Buyer MToA - 800 MW SToA - 200 MW	1100 MW	1100 MW	At Ancillary Rate - 100 MW MToA - 800 MW SToA - 200 MW	(Excess injection to be booked to Pool At Ancillary Rates)

7.4 ISGS – with LToA/MToA/SToA schedules - under Injection

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up	Remarks
ISGS	1000 MW	LToA - 500 MW	900 MW	900 MW	LToA - 500 MW	In line with IEGC Regulation 6.5.17
		MToA - 300 MW			MToA - 300 MW	
		SToA - 200 MW			**SToA - 100 MW**	

7.5 ISGS -with LToA/MToA/SToA/PX schedules - Over Injection

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up
ISGS	1000 MW	350 MW-LToA	1100 MW	1100 MW	**450 MW-LToA**
		300 MW-MToA			300 MW-MToA
		200 MW-SToA			200 MW-SToA
		100 MW-PX1			100 MW-PX1
		50 MW-PX2			50 MW-PX2

7.6 IPP/Seller -with LToA/MToA/SToA/PX schedules - Over Injection

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up	Remarks
IPP/seller	1000 MW	350 MW-LToA	1100 MW	1100 MW	350 MW-LToA	**100 MW Excess injection shall be settled at Hon'ble CERC Rate notified for GD**
		300 MW-MToA			300 MW-MToA	
		200 MW-SToA			200 MW-SToA	
		100 MW-PX1			100 MW-PX1	
		50 MW-PX2			50 MW-PX2	

7.7 ISGS/IPP/Seller -with LToA/MToA/SToA/PX schedules - under Injection (Case-I)

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up
ISGS/IPP/ Seller	1000 MW	350 MW-LToA	900 MW	900 MW	350 MW-LToA
		300 MW-MToA			300 MW-MToA
		200 MW-SToA			**100 MW-SToA**
		100 MW-PX1			100 MW-PX1
		50 MW-PX2			50 MW-PX2

7.8 ISGS/IPP/Seller-with LToA/MToA/SToA/PX schedules – under injection (Case-II)

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up
ISGS/IPP/ Seller	1000 MW	350 MW-LToA	700 MW	700 MW	350 MW-LToA
		300 MW-MToA			**200 MW-MToA**
		200 MW-SToA			**000 MW-SToA**
		100 MW-PX1			100 MW-PX1
		50 MW-PX2			50 MW-PX2

7.9 ISGS/IPP/Seller - with LToA/MToA/SToA/PX schedules– under injection (Case-III)

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up

ISGS/IPP/ Seller	1000 MW	350 MW-LToA	400 MW	400 MW	250 MW-LToA
		300 MW-MToA			000 MW-MToA
		200 MW-SToA			000 MW-SToA
		100 MW-PX1			100 MW-PX1
		50 MW-PX2			50 MW-PX2

7.10 ISGS/IPP/Seller -with LToA/MToA/SToA/PX schedules- under injection (Case-IV)

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up
ISGS/IPP/ Seller	1000 MW	350 MW-LToA	75 MW	75 MW	000 MW-LToA
		300 MW-MToA			000 MW-MToA
		200 MW-SToA			000 MW-SToA
		100 MW-PX1			25 MW-PX1
		50 MW-PX2			50 MW-PX2

- **Assuming that Market Clearing Price (MCP) of bid rates of PX1 was higher than PX2.**
- **An amount equal to (100-25)*MCP OF PX1 to be reimbursed by ISGS/IPP to DSM Pool Account.**

7.11 ISGS/IPP/Seller- with LToA/MToA/SToA/PX schedules- under injection (Case-V)

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up
ISGS/IPP/ Seller	1000 MW	350 MW-LToA	10 MW	10 MW	000 MW-LToA
		300 MW-MToA			000 MW-MToA
		200 MW-SToA			000 MW-SToA
		100 MW-PX1			00 MW-PX1
		50 MW-PX2			10 MW-PX2

- **Assuming that Market clearing price of bid rates of PX1 was higher than PX2.**
- **An amount equal to (100-0)*MCP OF PX1 to be reimbursed by ISGS/IPP to DSM Pool Account.**
- **An amount equal to (50-10)*MCP OF PX2 to be reimbursed by ISGS/IPP to DSM Pool Account.**

7.12 ISGS/IPP/seller -with LToA/MToA/SToA/PX schedules – Drawn from Grid (Case-VI)

	Despatch Schedule	Break Up	Actual Injection	Revised Schedule	Revised Break Up
ISGS/IPP/ Seller	1000 MW	350 MW-LToA	-10 MW	-10 MW	000 MW-LToA
		300 MW-MToA			000 MW-MToA
		200 MW-SToA			000 MW-SToA
		100 MW-PX1			00 MW-PX1
		50 MW-PX2			00 MW-PX2

- **ISGS/IPP to Pay to DSM pool account as per the rate decided by Hon'ble CERC for 10 MW drawal from Grid.**
- **An amount equal to PX schedules to be reimbursed by ISGS/IPP to DSM Pool Account**

7.13 Beneficiaries/ buyers (outside grid disturbance affected area) Case-I.

	Scheduled Drawal	Actual Drawal	Revised Schedule	Deviation	Remarks
Beneficiary /Buyer	1000 MW	900 MW	800 MW	+100	+100 (Payable at DSM Rate without Additional Charges)

7.14 Beneficiaries/buyers (outside grid disturbance affected area) Case-II

	Scheduled Drawal	Actual Drawal	Revised Schedule	Deviation	Remarks
Beneficiary /Buyer	800 MW	900 MW	1000 MW	-100	-100 (Receivable at DSM Rate without capping)

7.15 Beneficiaries / buyers (inside grid disturbance affected area) Case-I.

	Scheduled Drawal	Actual Drawal	Revised Schedule	Deviation	Remarks
Beneficiary /Buyer	1000 MW	900 MW	800 MW	+100	+100 (Payable at Hon'ble CERC notified Rate for GD)

7.16 Beneficiaries/buyers (inside grid disturbance affected area) Case-II

	Scheduled Drawal	Actual Drawal	Revised Schedule	Deviation	Remarks
Beneficiary /Buyer	800 MW	900 MW	1000 MW	-100	-100 (Receivable at at Hon'ble CERC notified Rate for GD)

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ANNEXURE-II

Central Electricity Authority
Grid Management Division
Sewa Bhawan (N),6th Floor, New Delhi 110066

Subject: Issues proposed to be included in NPC agenda.

Following issues may please be included in the agenda for the next meeting of NPC:

1. Special Invitee/Membership of Regional Power Committee: -

   M/s. PTC vide its letter No. PTC/RPC/15703 dated 19.01.2016 has requested for special Invitee/Membership Status in all RPCs (copy enclosed). This may be discussed in next NPC meeting.

2. Standardization of data in regards to allocation Orders: -

   M/s. Manikaran Power Limited vide its letter No. MPL/16-17/CEA/15022016 dated 15.02.2016 (copy enclosed) has requested for standardization in the data format for allocation orders on RPCs' Websites. This may also be discussed in the next NPC meeting.

This issues with the approval of Member (GO&D).

Encl.: As above

8/3/16

(Dinesh Chandra)
Chief Engineer

Chief Engineer (NPC), Katwaria Sarai, New Delhi-110016

No. 1/AI/COR/GM-16/418 Date: 08.03.2016

50Hertz®
Creating Balance

MPL/16-17/CEA/15022016 Dated: 15th February, 2016

To

The Chief Engineer

(Grid Management Div.,CEA)

(Member Secretary of NPC)

Central Electricity Authority,

Sewa Bhawan, R.K. Puram,

Sector – 1, New Delhi – 110066

Subject: Request to standardize the data in a common format for all the five Regional Power Committees (ERPC, SRPC, NRPC, WRPC and NERPC) across India.

Respected Sir,

It has been observed that data like **Allocation Order (Share Allocation of States)** present on websites of all five regional power committees is not in a standard format. The data format is found to be varying from one Regional power committee to another Regional power committee.

We suggest that such data **(i.e., Allocation Order)** at regional level should be uniform and same format should be followed by each of the Regional power committees.

It would be very much helpful if all Regional power committees follow the uniform, common and standard format nationally.

We would be grateful to you for fulfilling this request.

Thanking You,

Yours Truly

For Manikaran Power Limited

(Authorized Signatory)

MANIKARAN POWER LTD. 110075 N. DELHI

G.M. Division
Dy. No.........
Date 19/2/16
C.E.A.

Sh Anshuman for n.a. pl
22/2

Sh Abhi
Pl send it to NPC with covering letter in hand
Dir (VM)

PTC India

Ref: PTC/RPC/ 15703

Dated: 19.01.2016

Member (Grid Operation& Distribution)
Central Electricity Authority
Room No: 601 (North), Sewa Bhawan,
Sector -1, R.K. Puram
New 110 066

O/o MEMBER (GO&D)
Dy. No. 170
Dated 22/1/16

Sub: Special Invitee/Membership of Regional Power Committees.

Dear Sir,

With reference to above, it is to submit that:

1. PTC India Limited (Formerly known as Power Trading Corporation of India Limited) was established in the year 1999 as a Government of India initiated Public-Private Partnership, whose primary focus is to develop a commercially vibrant power market in the country.

2. The company has been promoted by NTPC Ltd., Power Grid Corporation of India Ltd, Power Finance Corporation India ltd. and NHPC Ltd which all are Govt. of India Under taking. LIC which is also government company has major share holding of 11% in the company.

3. Board of PTC India is having wider representation and one Director each is nominated from above promoters companies, one director is nominated by Ministry of Power and one another from LIC.

4. PTC India Limited has been nominated by Government of India as Nodal agency for cross border trade with Bhutan, Nepal and Myanmar. PTC is supplying 1020 MW from Tala Hydro Project, 336 MW power from Chukha Hydro Project and 60 MW power from

CE (GM)

① We are dof as per MoP resolution ② Presently PTC is a private company

PTC India

Kurichu Hydro Project to beneficiary states of Eastern and Northern Region on long term basis.

5. PTC India has been granted category I trading licensee by Central Electricity Regulatory Commission which is a highest category of license with no trading limit on volume

6. Since its inception PTC India Limited has been maintaining as Number 1 trading license position in terms of percentage of volume traded by any trading licensee. The percentage market share of PTC India Limited for last three financial years is given below:

S.No.	Financial Year	% Market share
1	2012-13	29.64
2	2013-14	31.68
3	2014-15	33.12

7. Presently, PTC India Limited is having following long term agreements which are in operation or about to get operationalise in all regions of the country:

S.No.	Supplier	Buyer	Quantum(MW)
1.	JK SPDCL Baghlihar	WBSEDCL	100
2.	Lanco Amarkantak Unit-I (C.G.)	Madhya Pradesh	273
3.	Torrent Power Limited Sugen (Gujrat)	Madhya Pradesh	100
4.	Lanco Amarkantak Unit-II(C.G.)	Haryana	259
5.	GMR- Kamlanga (Odisha)	Haryana	300
6.	Adhunik Power and Natural Resources limited (Jharkhand)	WBSEDCL	100
7.	Adhunik Power and Natural Resources limited (Jharkhand)	Tamilnadu	100
8.	Everest Power Pvt Limited (Malana-II) Himachal Pradesh	Punjab	100
9.	Himachal Baspa Power Company Limited (Karcham Wangtoo HEP)	Haryana	200
10.	Himachal Baspa Power Company	Uttar Pradesh	200

	Limited (Karcham Wangtoo HEP)		
11.	Himachal Baspa Power Company Limited (Karcham Wangtoo HEP)	Rajasthan	104
12.	M.B. Power (Madhya Pradesh) Ltd.	Uttar Pradesh	361
13.	Maruti Clean Coal and Power Limited (C.G.)	Rajasthan	250
Total			**2447**

8. PTC also has in its portfolio long term Power Purchase Agreements with the Generators for cumulative capacity of about 11,586 MW for further sale of power to Discoms which includes cross border trade also. It may also be noted that the financial closure of most of these projects have been done based on their PPA with PTC.

9. PTC is also managing the power portfolio of Government of Himachal Pradesh, Madhya Pradesh, Jharkhand, J&K, Tripura, WBSEDCL,NDMC etc .

10. Since its inception, PTC India Limited has played a vital role in overall power market development in the country by participating in different forums. PTC Financial Services Limited which is a subsidiary of PTC India Limited is one of the promoters of Indian Energy Exchange and PTC has played a vital role in establishing the IEX.

11. Further, market share of top power traders for last three financial years is given below:

S.No.	Financial Year	Name of Trader	Percentage Share
1	2012-13	PTC India Limited	29.64
		NVVNL	11.67
		Tata Power Trading Company Ltd.	11.29
		JSW Power Trading Company Ltd.	10.38
		National Energy Trading & Services Ltd.	7.44
		Adani Enterprises Ltd.	6.99
2	2013-14	PTC India Limited	31.68
		JSW Power Trading Company Ltd	12.40
		Tata Power Trading Company Ltd.	11.04
		Reliance Energy Trading Company Limited	7.12
		NVVNL	6.13

		Adani Enterprises Ltd.	5.02
3	2014-15	PTC India Limited	33.12
		Tata Power Trading Company Ltd.	9.56
		Mittal Processor (P) Ltd	9.53
		JSW Power Trading Company Ltd	8.47
		GMR Energy Trading Limited	6.03
		Adani Enterprises Ltd.	5.65
		NVVNL	5.26

Source: CERC Reports on Short Term Market in India

From the above, it is to say that market share of PTC is increasing and has majority share in the market.

PTC is presently a member of ERPC and NERPC and has been playing an active role in discussing various issues in these forums.

It is requested that PTC may be admitted as a special invitee/member in other Regional Power Committees like NRPC, WRPC and SRPC also and it will be able to contribute on wider scale to develop the power market.

Thanking you and looking forward to an early reply from your end.

Yours Faithfully,

19/1/2016

(Bimal Dhar)
Executive Director (Commercial)

CC: 1. **Member (Power System)**
Central Electricity Authority
Sewa Bhawan,
Sector – 1, R.K,Puram
New Delhi 110 066

PTC India Limited
(Formerly known as Power Trading Corporation of India Limited)
CIN : L40105DL1999PLC099328
2nd Floor, NBCC Tower, 15 Bhikaji Cama Place New Delhi - 110 066 Tel: 011- 41659500.41595100, 46484200, Fax: 011-41659144
E-mail: info@ptcindia.com Website: www.ptcindia

PTC India

2. **Shri Dinesh Chandra**

Chief Engineer (Grid Management),
Central Electricity Authority
6th Floor(North), Sewa Bhawan,
Sector – 1, R.K,Puram
New Delhi 110 066

2) If PSS has been tuned or Step Response Test has been carried out during last 12 months, the generating company should submit to NRPC, NRLDC and CTU, the results of the Step Response Test within one month.
3) If results of Step Response Test indicate sufficient damping, generating company would performed next Step Test after three year or at the time of major overhauling of the machine, whichever will be earlier.
4) Generating Companies would arrange for re-tuning of PSS, if Step Response Test indicates insufficient damping or oscillations.
5) All new units with capacity over 50 MW must carry out PSS tuning before declaration of Date of Commercial Operation (COD). A report along with model parameters shall be submitted to CTU, RLDC/SLDC and NRPC for taking the correct modeling in the system study software (s).
6) NRLDC will observe and analyze the changing grid conditions based on the output of PMUs and will inform the generating Company concerned if oscillations are observed. On receipt of the information, the generating company would arrange for re-tuning of PSS at the earliest.
7) In some of the generating units it may not be feasible to tune PSS. Generating Companies would furnish details of such units (Year of Commercial operation, capacity, OEM, reason as to why PSS cannot be tuned etc), which in their opinion are not amenable to PSS tuning. These would then be discussed in the OCC and TCC/NRPC. In cases where there is general agreement that it may not be feasible to carry out PSS tuning, the matter may be taken to CERC for seeking exemption.

Status of implementation of these recommendations is being monitored at NRPC forum.

The recommendations may be deliberated by the NPC for consistency in all the regions.

(iii) Target fixed for Load Relief from operation of Defense Mechanism

NPC, in its 2nd meeting held on 16.07.2013, had agreed for the four stage UFR based automatic load shedding scheme. A combined reading of agenda and minutes of the 2nd meeting of NPC reveals targets were fixed based on peak loads with the assumption that average load will be of the order of 60-70% of peak loads.

Further, the regional load shedding target for each stage was allocated to each state of Northern Region pro-rata to their peak demands.

In recently held OCC meeting of NRPC, Punjab has submitted following details of various automatic load shedding required to be carried out in Punjab:

Annexure-III

Page (1 of 2)

Sr. No.	Type of Defense Mechanism	Target Load Relief (Available at NRPC website)	
1.	df/dt (Stage-1 49.9 Hz & 0.1 Hz/sec)	430	1410
2.	df/dt (Stage-2 49.9 Hz & 0.2 Hz/sec)	490	
3.	df/dt (Stage-3 49.9 Hz & 0.3 Hz/sec)	490	
4.	UFR (49.2 Hz)	400	
5.	UFR (49.0 Hz)	402	1616
6.	UFR (48.8 Hz)	406	
7.	UFR (48.6 Hz)	408	
8.	SPS (Group-A)	35	
9.	SPS (Group-C)	71	496
10.	SPS (Group-D)	90	
11.	SPS (Group-E)	100	
12.	SPS (Group-F)	100	
13.	SPS (Group-G)	100	
Total Load Relief		**3522**	

Punjab has further submitted details of maximum and minimum load recorded in Punjab during 2014-15. The maximum load was 10155 MW in June 2014 whereas minimum load was 1236 MW in March 2014. Average load for FY 2014-15 was 5444 MW. Also some of the loads such as defence establishments, Hospitals, courts and continuous process industries are uninterruptible. Further, IEGC also requires that there should be no overlapping of feeders between various load shedding schemes.

In view of this, Punjab had expressed difficulty that load relief from UFRs will be much less than target fixed for them. This difficulty may be faced by other states also which have high ratio of maximum to minimum load.

NPC may deliberate so as to decide on the criteria for fixing target for UFR based load shedding for individual states.

07-12-2015

(Ajay Talegaonkar)
SE(O)

Chief Engineer, NPC Division, CEA
No NRPC/119/01/2015/1154 Dated 07/08.12.2015