Procedures for Scheduling, Despatch, Energy Accounting, UI Accounting and Settlement System of Open Access Transactions

1.0 State Load Despatch Centre:

The procedures for scheduling, despatch, energy accounting & settlement system of Open access transactions is being made by State Load Despatch Centre of U.P. situated at 5th floor, Shakti Bhawan, 14-Ashok Marg, Lucknow. This Centre is being operated by U.P. Power Transmission Corporation Ltd., the State Transmission Utility notified as such by the Govt. of U.P. under the Electricity Act, 2003.

These procedures have been framed in accordance with Order dated 12.09.2011 passed by the U.P. Electricity Regulatory Commission in petition No.659/2010, M/s. Jaiprakash Associates Ltd. v/s U.P. Power Corporation Ltd. and four others.

2.0 Definitions:- In this procedure, unless the context otherwise requires-

1) "Act" means the Electricity Act, 2003 as amended from time to time;
2) 'actual drawal' in a time-block means electricity drawn by a drawing entity, as the case may be, measured by the interface meters;
3) **'**actual injection' in a time-block means electricity generated or supplied by the generating station or injecting entity, as the case may be, measured by the interface meters;
4) "banking of power" means the process under which a generating plant supplies power to the grid not with the intention of selling it to either a third party or to a licensee, but with the intention of exercising his eligibility to draw back this power from the grid;
5) "beneficiary" means Licensee or any person who has purchased the capacity from a generating station;

6) “bilateral transaction” means a transaction for exchange of energy (MWh) between a specified buyer and 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 drawl for a fixed or variable quantum of power (MW) for any time period during a month; *(as define under CERC {Open Access in Inter-state transmission} Regulation-2008).*

7) “collective transaction” means a set of transactions discovered in power exchange through anonymous, simultaneous competitive bidding by sellers; (as define under CERC {Open Access in Inter-state transmission} Regulation-2008).

8) “distribution licensee” means a Licensee authorized to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;

9) "drawl schedule" means the, ex-power plant or ex-injecting entity, MW that a drawing entity is scheduled to receive from a SSGS/ISGS, including bilateral exchanges from time to time;

10) "entitlement" means share of a drawing entity (in MW or MVA) in the installed capacity/output capability of an SSGS/ISGS;

11) "ex-power plant" means MW/MWh Net MW/MWh output of a generating station, after deducting auxiliary consumption and transformation losses;

12) "forced outage" means an outage of a Generating Unit or a transmission facility due to a fault or other reasons that has not been planned;

13) ‘generating station’ means a generating station whose tariff is determined by the Commission under clause (a) of sub-section (1) of Section 62 of the Act;

14) "grid code" means the Uttar Pradesh Electricity Grid Code, 2007 notified by the Commission under section 86(1)(h) of Electricity Act' 2003;

15) "Indian Electricity Grid Code (IEGC)" means a document describing the philosophy and the responsibilities for planning and operation of Indian power system specified by CERC in accordance with sub section 1(h) of Section 79 of the Act;

16) 'interface meters' means interface meters as defined by the Central Electricity Authority under the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time;

17) "intra-State entity" means a person whose metering and energy accounting is done by the State Load Despatch Centre or by any other authorized State utility;
[As per CERC (Open access in interstate transmission) Regulations-2008]

18) "inter State generating station (ISGS)" means a Central/other generating station in which two or more states have shares and whose scheduling is to be coordinated by the RLDC;

19) "licensee" means a person who has been granted a licence under Section 14 of the Electricity Act, 2003;

20) "long-term open access customer" means a long-term open access customer as defined under UPERC (Terms and Condition for Open Access) Regulations as amended from time to time;

21) "long –term access" means the right to use the inter-State transmission system for a period exceeding 12 years but not exceeding 25 years;

[As per CERC Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009]

22) “medium-term open access” means the right to use the inter- State transmission system for a period exceeding 3 months but not exceeding 3 years;

[As per CERC Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009]

23) “open access” means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;

24) “open access customer” means a beneficiary or any other person using or intending to use the transmission system and/or distribution system of any licensee in the State for transmission or wheeling of electricity;

[As per UPERC order dated 24/25.09.2007 passed in the matter of suo-moto proceedings on preparation and implementation of ABT]

25) "net drawl schedule" means the drawl schedule after deducting the apportioned transmission losses (estimated);

26) "Non-Conventional Energy Sources (NCES)" means generating plants based on non-conventional energy sources e.g. solar, wind, bagasse, bio-mass, bio-gas, industrial waste, municipal waste and small hydro generating Stations;

27) "operation" means a scheduled or planned action relating to the operation of a System;

28) "operating range" means the operating range of frequency and voltage as specified under the operating code of UPEGC or IEGC.

29) “Power Exchange” means the power exchange which has been granted registration in accordance with CERC (Power Market) Regulations, 2010 as amended from time to time;

30) “Regional entity” means a person whose metering and energy accounting is done at the regional level; [As per CERC (Open access in interstate transmission) Regulations-2008]

31) "Regional/State Energy Account" means a Regional/State energy account, for the billing and settlement of ‘Capacity Charge’, ‘Energy Charge’, ‘UI Charge’ and ‘Reactive Charge’;

32) "Regional grid" means the entire synchronously connected electric power network of the concerned Region, comprising of STS, ISGS and Intra-State systems;

33) "Regional Load Despatch Centre (RLDC)" means the Centre established under sub-section (1) of Section 27 of the Act;

34) `scheduled drawl’ at any time or for any period or time block means schedule of despatch in MW or MWh ex-bus;

35) `scheduled generation’ at any time or for any period or time block means schedule of generation in MW or MWh ex-bus;

36) "share" means percentage share of a beneficiary or drawing entity in an SSGS/ISGS notified by Government of India/ Government of U.P. or as agreed to in the agreement between SSGS/ISGS and its beneficiaries or drawing entity;

37) "short term open access customer" means a short-term open access customer as defined under UPERC (Terms and Condition for Open Access) Regulations as amended from time to time;

38) “short-term open access” means open access for a period up to one (1) month at one time;

[As per CERC (Open Access in inter-State Transmission) Regulations, 2008]

39) "State Load Despatch Centre (SLDC)" means a Centre established by the State Government under subsection (1) of Section 31 of the Act;

40) "State Transmission Utility (STU)" means the Government Company specified as such by the State Government under sub section (1) of Section 39 of the Act;

41) "State Sector Generating Station (SSGS)" means generating stations connected with the State Transmission System including IPP, Captive Generating Plant, Co-Gen and NCES;

42) "State Power Committee (SPC)" means a Committee constituted under the provisions of section 2.14, of UPEGC;

43) “State utility” means a State Transmission Utility, or a State Electricity Board, or Electricity Department of the State, or a State Government organization authorized to sell or purchase electricity on behalf of the State;
[As per CERC (Open access in interstate transmission) Regulations-2008]

44) "time block" means a block of 15 minutes each for which special energy meters record specified electrical parameters and quantities with first time block starting from 00:00 Hrs.;

45) “Unscheduled Interchange (UI)” in a time block for a generating station or an injecting entity means its total actual generation or injection minus its total scheduled generation or injection and for a drawing entity means its total actual drawl minus its total scheduled drawl;

46) "UPERC" means the Uttar Pradesh Electricity Regulatory Commission.

2.1 Any other words and expressions used here under, but not defined above, shall carry the same meaning as assigned to them in regulations, codes and orders made or passed by CERC or UPERC from time to time.

3.0 Participation in Scheduling:

The following shall participate in scheduling –

3.1 With UI implications -

(1) All generating stations (except Obra 'A' & Harduaganj) of UPRVUNL i.e. Anpara-A, Anpara-B, Panki, Parichha and Parichha Extn, and Obra 'B'

(2) Rihand-Hydel, Obra-Hydel, Matatila, Khara generating stations of UPJVNL.

(3) Madhyanchal Vidyut Vitran Nigam Ltd. (MVVNL), Purvanchal Vidyut Vitran Nigam Ltd (PuVVNL), Pashimanchal Vidyut Vitran Nigam Ltd (PVVNL.); Dakshiranchal Vidyut Vitran Nigam Ltd. (DVVNL) and Kanpur Electric Supply Company (KESCO);

(4) Noida Power Company Ltd. (NPCL);

(5) Any short term open access customers;

(6) Co-gen. plants including all other non-conventional sources of energy;

(7) Captive plants;

(8) Any other transaction between a distribution licensee, generating company or any other licensee.

3.2 Without UI implications

(1) Obra & Harduaganj generating stations of UPRVUNL till further order of the Commission.

(2) Co-generation plants including all other non-conventional sources of energy based plants supplying electricity at preferential tariff only to distribution.

4.0 Procedure of Scheduling:

This procedure shall apply to all long term/medium term and short term open access transactions whether engaged in intra-state and/or inter-state.

The communication of 'declaration of capability'(DC), 'generation or injection schedule' and 'drawl schedule' to SLDC shall be the primary responsibility of the generating station or beneficiary/licensee and open access customer, as the case may be.

Broad principles of scheduling would be –

(a) Declaration of "Declared capacity - DC" by 'generating stations and injecting entities' in MW and MWh in 96 time blocks of 15 minutes intervals for each day;

(b) Based on such DC, 'drawing entities' shall submit their ex-bus plant or injection point "drawl schedule (SD)" in MW which shall not be more than MW declared in DC;

(c) After receipt of drawl schedule, 'despatch schedule' for 'generating stations and injecting entities' shall be prepared which will comprise of MW as per 'drawl schedule' and MWh derived by apportioning MWh in DC in the ratio of 'MW in DC' and that declared in the 'drawl schedule'.

(d) 'Net drawl schedule' of 'drawing entities' in MW and MWh shall be prepared from 'despatch schedule' by deducting transmission losses.

(e) After the above day ahead scheduling procedure is complete, 'implemented schedule' of 'generating stations and injecting entities' and 'drawing entities' shall be prepared with due incorporation of revisions in schedules taken place during the day of operation.

Time blocks

a) For the purposes of scheduling and despatch and energy accounting; declaration of capability (DC), schedule generation or injection of power (SG) and schedule drawl (SD), shall be in 96 time blocks of 15 minutes intervals for each day starting from 00.00 hours to 24.00 hours.

Declaration of Capability (DC)

(ii) Declaration of capability shall be made **by 9.00 AM** every day.

Note: In case of ISGS declaration is to be made by 8 A.M. every day vide clause-6.5(3) of UPERC (Indian Electricity Grid Code) Regulations, 2010.

(iii) Declaration of capability (as foreseen for each time block of the next day i.e. from 00.00 hours to 24.00 hours of the following day) shall be made by each following who are situated in State of Uttar Pradesh and participating in intra-state or inter-state transactions:

(1) Generating stations of UPRVUNL - Anpara-A, Anpara-B, Obra-B, Panki, Parichha and Parichha Extn, Obra-A & Harduaganj and any other generating plant commissioned from time to time.

(2) Generating stations of UPJVNL- Rihand-Hydel, Obra-Hydel, Matatila, Khara and any other generating plant commissioned from time to time.

(3) Rosa power supply company, Vishnu Prayag, Anpara-C and any other generating plant commissioned from time to time.

(4) Captive generating plants connected with the grid.

(5) Co-generation plants connected with the grid.

(6) All other non-conventional sources of energy based plants connected with the grid.

(7) Generating station of any other generating company connected with the grid.

(8) Any other similar person (also "intra-State entity" within the meaning of CERC Regulations) who intends to inject electricity for transmission of power outside and/or within the State.

(9) Any distribution company supplying banked energy to a captive or co-generation or any other non conventional energy source based plant.

(10) Any distribution licensee who intends to inject electricity for transmission of power within the State to any person including that for the purpose of startup or backup power to generating station.

The above, as mentioned from (1) to (10), are collectively called **'generating stations and injecting entities**', the expression which include generating stations of all generating companies and distribution licensees which intends to supply electricity to any person including banked energy to any captive, co-generation and All other non-conventional sources of energy based plants connected with the grid.

Note:(1) Any generating plant owned by the beneficiary (i.e. a distribution licensee) itself and Captive Plants or NCES based plants which are connected to the distribution system of the concerned beneficiary shall not be required to participate in the process of scheduling because the effect of such generation is embedded into the distribution system and the same shall duly be accounted for while making the drawl schedule.

(2) Injecting entity' means a distribution licensee.

(3) For supply of startup or backup power to 'generating station', the generating station should enter into a contract with distribution licensee for supply of a quantified startup or back up power. According to the contract, the distribution licensee shall submit a standing injection schedule with SLDC for supply of such power to the generating station. Implemented schedule shall be made for the power drawn by the generating station by grossing up the power at the periphery of the distribution licensee with due accounting of transmission losses.

(iv)Declaration of capability shall be –

(1) in ex-power plant MW and MWh capability as foreseen by each of generating station mentioned under sub para(iii) above. In case its beneficiaries are more than one, ex-power plant MW and MWh capability in respect to each of such beneficiaries shall be declared separately.

Note –1. Banking by captive or co-generation or any other non conventional energy source based plant with the

distribution licensee (with whom a power purchase agreement exits) of their area shall also be subject to DC or SG.

They shall declare the schedule of banking on monthly basis as per their agreement with the distribution licensee which shall also be indicated in the daily schedule during the month unless revised for the next month.

2. Captive plant supplying electricity to its user/member(s) as well as any other person, declaration shall be made for each of them.

(2) in MW for an 'injecting entity' who is not a generating station i.e. who may be a distribution licensee. The corresponding energy in MWh shall be calculated on the basis of MW and time for each time block. In case drawing entity are more than one, MW and MWh capability in respect to each of such drawing entity shall be declared separately.

Note - (1) This provision shall also apply in case of withdrawal of banked energy by captive or co-generation or any other non conventional energy source based plant from distribution licensee of their area with whom a power purchase agreement exits.

The load declared by the plants for withdrawl of banked energy may be treated as standing schedule of the distribution licensee for supply of banked energy to such plants which shall be

indicated in the schedule of the distribution licensee and considered in the energy accounting.

(2) 'injecting entity' has immense capability to supply power from the pool available with it as such Declared Capability "DC" would mean its injecting capability corresponding to the schedule.

(3) (a) An "intra-state entity" (i.e. a seller within the State), whose power is to be scheduled *(from within the State to outside the State)* by a Regional Load Despatch Center (RLDC) for any interstate transaction i.e. bilateral transaction or collective transaction (duly consented by SLDC) shall ensure to convey declaration of capability in MW and MWh to SLDC at the same time when it is communicated to RLDC.

In case such "intra-state entity" supplies electricity within as well as outside the State, declaration shall be made for both in MW and MWh shown distinctly.

(b) An "intra-state entity" (i.e. a buyer within the State), whose power is to be scheduled *(from other state to within the state)* by a Regional Load Despatch Center (RLDC) for receiving electricity from any interstate transaction i.e. bilateral transaction or collective transaction (duly consented by SLDC) shall ensure to convey declaration of capability in MW and MWh by its seller at regional periphery of the regional entity to SLDC at the same time when it is communicated to RLDC. In case such declaration shall be made for both in MW and MWh. In case of collective transaction as communicated to SLDC by

power exchange for scheduling, Schedule of seller or buyer within the State shall be prepared in the manner described at (a) and (b) above.

(c) In case of collective transaction as communicated to SLDC by power exchange for scheduling, schedule of seller or buyer within the State shall be prepared in the manner described at (a) and (b) above.

(d) The provisions of sub-para (a), (b) and (c) shall also apply in case of intra-day transactions.

Note: The scheduling and dispatch procedure for interstate transactions shall not be consistent with IEGC and other regulations/orders of CERC.

(4) (a) The hydro electric generating stations are expected to respond to grid frequency changes and inflow fluctuations. They would, therefore, be free to deviate from the given schedule as long as they do not indulge in gaming and do not cause a grid constraint. As a result, the actual net energy supply by a hydro generating station over a day shall differ from schedule energy (ex-bus) for that day. Compensation shall then be made by the concerned load dispatch centre in the day ahead schedule for the 4th day (day plus 3).

(b) Purely run-of-river power stations

Since variation of generation in such stations may lead to spillage, these shall be treated as must run stations. The maximum available capacity, duly taking into account the over load capability, must be equal to or greater than that required to make full use of the available water.

(c) Run-of-river power station with pondage and storage type power stations

These hydro stations are designed to operate during peak hours to meet system peak demand. Maximum available capacity of the station declared for the day shall be equal to the installed capacity including overload capability, minus auxiliary consumption and transformation losses, corrected for the reservoir level. The State Load Despatch Centres shall ensure that generation schedules of such type of stations are prepared and the stations dispatched for optimum utilization of available hydro energy except in the event of specific system requirements/constraints.

(d) The schedule finalized by the concerned Load Despatch Centre for a hydroelectric generating station shall normally be such that the scheduled energy for a day equals the total energy (ex-bus) expected to be available on that day, as declared by the generating station, based on foreseen / planned water availability / release. It is also expected that the total net energy actually supplied by the generating station on that day would equal the declared total energy, in order that the water release requirement is met. While the 15-minute wise deviations from schedule would be accounted for as Unscheduled Interchange (UI), the net energy deviation for the whole day, if any, shall be additionally accounted for as shown in the illustration.

Illustration

Suppose the foreseen/expected total energy (ex-bus) for Day 1 is E1, the scheduled energy is S1, and actual net energy (metered) is A1, all in ex-bus MWh. Suppose the expected energy availability for Day 4, as declared by the generator, is E4. Then, the schedule for Day 4 shall be drawn up such that the scheduled energy for Day 4, shall be

S4 = E4 + (A1 – E1).

Similarly, S5 = E5 + (A2 – E2),

S6 = E6 + (A3 – E3),

S7 = E7 + (A4 – E4), and so on.

[(b), (c) and (d) are as per regulation 45 (xvii) to 45 (xix) of Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2009]

(v) **By 10.00 AM**, the SLDC shall also receive information from RLDC regarding MW and MWh entitlements of the State beneficiaries from Central Sector Generating stations for each 15 minute time blocks for the next day.

(vi) **By 11.00 AM**, SLDC shall compile declared capability made by 'generating stations and injecting entities' in para-4(iii) and that obtained from RLDC under para-4(iv) after taking in to account bilateral exchanges, if any, and communicate the same to all 'drawing entities' for the next day.

(Ref. para-14.0 (iv) of main ABT order of UPERC)

The following or as may be revised from time to time by SLDC, shall receive declared capability:

(1) Madhyanchal Vidyut Vitran Nigam Ltd.(MVVNL), Purvanchal Vidyut Vitran Nigam Ltd.(PuVVNL), Pashimanchal Vidyut Vitran Nigam Ltd.(PVVNL.), Dakshiranchal Vidyut Vitran Nigam Ltd.(DVVNL) and Kanpur Electric Supply Company(KESCO).

(2) Noida Power Company Ltd. (NPCL)

(3) Any other similar person or "intra-State entity" who intends to receive electricity from outside and/or within the State.

(4) Co-gen plants including all other non-conventional sources of energy if they intend to draw banked energy or purchase electricity.

(5) Captive users of captive plants and any other person (with whom captive plant has an agreement for sale of power) who is to receive power from such captive plant.

(6) Generating stations who is to receive startup or backup power from distribution licensee or any other generating station.

The above, as mentioned from (1) to (6), are collectively called **'drawing entities'**, the expression which includes beneficiaries, intrastate entity and any other open access customer intending to draw electricity from any specified generating station or point of injection.

Drawl Schedule

(vii) **By 1.00 PM,** the 'drawing entities' under para-4(vi) shall prepare the ex-power plant or injection point drawl schedule according to their foreseen load pattern and their own generating capability (if any, from generating plants such as that owned by the beneficiary itself, Captive Plants and NCES based plants connected to their distribution system), and advise the

SLDC their drawl schedule for each of the SSGS, ISGS and long term, short term bilateral trades in which they have shares.

However drawl schedule of a captive user shall be equal to Ex-Bus DC of the captive generating plant. In case, users are more than one, it will be made by multiplying DC by their percentages share in the plant..

In case a drawing entity (including user/member(s) of a captive plant) also have a contract with distribution licensee for supply of electricity, the load so contracted shall be shown in the drawl schedule.

The drawl schedule shall be made in MW for each case made under para (iv) (1), (2) & (4).

Important Note:

(a) The 'drawing entity' in case of an 'intra-state entity' (seller) at para (iv) (3) (a) shall be concerned **regional periphery** and the schedule of region (as communicated to RLDC) shall also be submitted by such intra-state entity after taking into account intra-state transmission losses. The drawl schedule shall be made both in MW and MWh.

(b) The 'drawing entity' in case of an 'intra-state entity' (buyer) at para (iv) (3) (b) shall be at **regional periphery** and the schedule from the region (as communicated to RLDC) shall also be submitted by such intra-state entity after taking into account intra-state transmission losses. The drawl schedule shall be made both in MW and MWh.

(c) In case of collective transaction as communicated to SLDC by power exchange for scheduling, schedule of seller or buyer within the State shall be prepared in the manner described at (a) and (b) above.

(d) In case a captive plant supplies electricity to its user/member(s) as well as to any other person, drawl schedule in respect of each of such drawing entity shall be made

(viii) **By 3.00 PM,** SLDC shall compile the drawl schedules received under above para -(vii) and convey the drawl schedule to–

(1) RLDC for each of ISGS;

(2) SSGS or injecting entities (mentioned under para-4 (iii) above) who has made declaration of capability; and

(3) in respect to long term and short-term bilateral interchanges;

in which the drawing entities mention under para-4(vi) have shares.

(ix) The SLDC may give standing instruction, [with reason to be recorded in writing,] to RLDC such that RLDC itself may decide the drawl schedules for the State.

[Reasons are to be recorded for giving such instruction as SLDC is not to indulge in any activity or process of trade in electricity.]

Despatch/Generation or injection schedule (SG)

(x) **By 6.00 PM**, The summation of 'ex-power plant or injection point drawl schedules' (SG) shall constitute the ex-power plant or injection point wise despatch schedule in MW and MWh for the next day. The MWh despatch schedule shall be derived by apportioning DC in MWh in the ratio of 'MW in drawl schedule' and 'MW in DC' in each case.

Important Note:

Generation or injection schedule of an "intra-state entity" (i.e. a seller within the State), whose power is to be scheduled *(from within the State to outside*

the State) by a Regional Load Despatch Center (RLDC) for any interstate transaction shall be as declared in MW and MWh under para (iv) (3) (a).

In case such "intra-state entity" supplies electricity within as well as outside the State, declaration shall be made for both in MW and MWh shown distinctly.

(xi) **By 6.00 PM**, each day the SLDC shall receive from RLDC the "net drawl schedule" for the State in MW for each 15 minute time block for the next day.

(xii) **By 6.00 PM**, SLDC shall also apportion the net drawl schedule for the State received from RLDC among the beneficiaries based on their entitlements approved by Government of UP (GOUP) in the ISGS and bilateral trades and convey the same to RLDC and respective beneficiaries or as the case may be.

(xiii) **By 6.00 PM,** if necessary, SLDC shall also revise the 'despatch schedule' of each of the SSGS in the light of net drawl schedule communicated by RLDC. SLDC shall convey each day the following:

(a) The ex-power plant or injection point "despatch schedule" to each 'generating station or injecting entity' in MW and MWh for each 15-minute time block, for the next day. The MWh in despatch schedule shall be derived by apportioning MWh in DC in the ratio of 'MW in drawl scheduled' and 'MW in DC' in each case.

(b) The "net drawl schedule" from ISGS and bilateral trades to each of the beneficiary in MW for each 15-minute time block, for the next day.

(xiv) While finalizing the drawl and despatch schedules as above, the SLDC shall ensure that the same are operationally reasonable, particularly in terms

of ramping up and ramping down rates and ratio between minimum and maximum generation.

SLDC shall also check that the resulting power flows do not give rise to any transmission constraints. In case of any foreseen generation/transmission constraints, the SLDC shall moderate the schedules to the required extent, under intimation to the concerned beneficiaries/SSGS.

Bilateral and Collective transactions

(xv) (1) Bilateral transactions: All bilateral transactions shall be scheduled as per the procedure prescribed in CERC Regulations, 2008.

(2) Collective transactions:

(i) Based on the application for scheduling of Collective Transaction submitted by the Power Exchange(s), NLDC shall send the details (Scheduling Request of Collective Transaction) to different RLDCs for final checking and incorporating them in their schedules. After getting confirmation from RLDCs, NLDC shall convey the acceptance of scheduling of collective transaction to Power Exchange(s).

RLDCs shall schedule the collective Transaction at the respective periphery of the Regional Entities at **6.00 PM,** of each day.

RLDC shall be incorporating all buyers with in a state (clubbed together as one group) and all sellers with in a state (clubbed together as one group) in schedule of collective transactions

(ii) The individual transactions for State Utilities/intra-State Entities shall be scheduled by the respective SLDCs. Power Exchange(s) shall

send the detailed break up of each point of injection and each point of drawl within the State to respective SLDCs **by 6.00 PM,** after receipt of acceptance from NLDC. Power Exchange(s) shall ensure necessary coordination with SLDCs for scheduling of the transactions.

Net drawl schedule of drawing entities (NSD)

(xvi) The summation of the station-wise ex-power plant and ex-injection point schedules in respect to each 'generating stations and injecting entities' and ISGS, along with bilateral exchanges, if any, after deducting the apportioned transmission losses shall constitute the net drawl schedule of the 'drawing entities'.

Important Note:

The net drawl schedule of a 'drawing entity' who is an 'intra-state entity' (buyer) at para (iv) (3) (b) shall be scheduled at regional periphery less intra-State transmission losses. The drawl schedule shall be made both in MW and MWh.

Change in despatch and drawl schedule

(xvii) **By 9.00 PM**, the 'generating stations and injecting entities' and 'drawing entities' may inform SLDC about any modification/changes to be made in the drawl schedule and bilateral inter changes/foreseen despatch capabilities, if any, to SLDC.

Important Note:

There shall not be any change in day-ahead-scheduling in respect to –

(a) 'intra-state entity' engaged in bilateral interstate transaction as seller, and

(b) 'intra-state entity' engaged in bilateral interstate transaction as buyer,

because regulation-14 of CERC Open Access Regulation, 2008 says that the short term open access schedules accepted by the nodal agency *(RLDC in case of bilateral transaction or NLDC in case of collective transaction)* in advance or on first come first served basis may be cancelled or revised downwards on an application to that effect made to the nodal agency by such customer but such cancellation or downward revision of schedule shall not be effected before expiry of a minimum period of two days.

The day on which notice for cancellation or downward revision of schedule is served on the nodal agency and the day from which such cancellation or downward revision is to be implemented shall be excluded for computing the period of two days.

(xviii) **By 10.00 PM,** the SLDC shall inform any modification / changes to be made in the station wise drawl schedule of ISGS and bilateral interchanges, if any, to RLDC.

(xix) **By 11.00 PM**, the SLDC shall receive from RLDC the final 'drawl schedule' against Central allocation along with bilateral exchanges of power, if any.

(xx) The SLDC shall review and revise the despatch schedules of the 'generating stations and injecting entities' and drawl schedules of 'drawing entities' in the light of final drawl schedule received from RLDC and convey by 11.30 PM:

(a) The final ex-power plant or ex-injection point "despatch schedule" to each 'generating stations and injecting entities' for each 15-minute time block, for the next day.

(b) The final "net drawl schedule" from ISGS, SSGS and bilateral trades to each of and 'drawing entities' for each15-minute time block, for the next day.

Revision in 'Generation or injection Schedule' and 'Drawl Schedule' during the day of operation

(xxi) In case of forced outage of a unit of a generating station or due to any reason attributable to injecting entity, SLDC shall revise the schedules of generation or injection and drawl on the basis of revised declared capability (in MW and MWh) by the generating station or injection entity, as the case may be**.** The revised declared capability and revised schedules shall become effective from the 4th time block, counting the time block in which the revision is advised by the generating station to be the first one.

In case of forced outage of an ISGS unit, SLDC shall receive revised schedule from RLDC drawn on the basis of revised declared capability by the ISGS**.** The revised declared capability and revised schedules shall become effective from the4th time block, counting the time block in which the revision is advised by the ISGS to be the first one.

Important Note:

There shall not be any revision in schedule during the day of operation in respect to –

(a) 'intra-state entity' engaged in bilateral interstate transaction as seller, and

(b) 'intra-state entity' engaged in bilateral interstate transaction as buyer,

because regulation-14 of CERC Open Access Regulation, 2008 says that the short term open access schedules accepted by the nodal agency *(RLDC in case of bilateral transaction or NLDC in case of collective transaction)* in advance or on first come first served basis may be cancelled or revised downwards on an application to that effect made to the nodal agency by such customer but such cancellation or downward revision of schedule shall not be effected before expiry of a minimum period of two days.

The day on which notice for cancellation or downward revision of schedule is served on the nodal agency and the day from which such cancellation or downward revision is to be implemented shall be excluded for computing the period of two days.

(xxii) In the event of bottleneck in evacuation of power due to any constraint, outage, failure or limitation in the intra- State Transmission System, associated switchyard and sub- stations owned by the State Transmission Utility or any other transmission licensee involved in intrastate transmission (as certified by the SLDC) necessitating reduction in generation, the SLDC shall revise the schedules which shall become effective from the 4th time block, counting the time block in which the bottleneck in evacuation of power has taken place to be the first one. Also, during the first, second and third time blocks of such an event, the scheduled generation of the 'generating stations and injecting entities' shall be deemed to have been revised to be equal to actual generation, and the scheduled drawls of the 'drawl entities' shall be deemed to have been revised to be equal to their actual drawls.

In the event of bottleneck in evacuation of power due to any constraint, outage, failure or limitation in the Inter- State Transmission System, necessitating reduction in generation of ISGS, the SLDC shall receive revised schedules from RLDC which shall become effective from the 4th time block, counting the time block in which the bottleneck in evacuation of power has taken place to be the first one.

(xxiii) In case of any grid disturbance, scheduled generation of all 'generating stations or injecting entities' and scheduled drawl of all the 'drawing entities' shall be deemed to have been revised to be equal to their actual generation or injection and drawl for all the time blocks affected by the grid disturbance. Certification of grid disturbance and its duration shall be done by the SLDC.

(xxiv) Revision of declared capability by the 'generating stations or injecting entities' and requisition by the 'drawing entities' during any time block shall also be permitted with advance notice. Revised schedules/declared capability in such cases shall become effective from the 6th time block, counting the time block in which the request for revision has been received in the SLDC to be the first one.

In case of revision of declared capability by the ISGS and requisition by beneficiary (ies) during any time block shall also be permitted on intimation from RLDC. Revised schedules/declared capability in such cases shall become effective from the 6th time block, counting the time block in which the request for revision has been received in the RLDC to be the first one. SLDC shall in inmate all the State beneficiaries about such modifications in

the drawl/ despatch schedules and advise them to effect Corresponding change in their drawl schedules.

(xxv) If, at any point of time, the SLDC observes that there is need for revision of the schedules in the interest of better system operation, it may do so on its own, and in such cases, the revised schedules shall become effective from the 4th time block, counting the time block in which the revised schedule is issued by the SLDC to be the first one.

If, at any point of time, the RLDC observes that there is need for revision of the schedules in the interest of better system operation, it may do so on its own, and in such cases, the revised schedules shall become effective from the 4th time block, counting the time block in which the revised schedule is issued by the RLDC to be the first one. On intimation of such revision by RLDC, SLDC shall intimate all the State beneficiaries about such modifications in the drawl/ despatch schedules and advise them to effect corresponding change in their drawl schedules.

(xxvi) To discourage frivolous revisions, the SLDC may, at its sole discretion, refuse to accept schedule/capability revision.

The schedule of thermal generating stations indicating fuel shortage, while intimating the declared capacity to RLDC, shall not be revised except in case of forced outage of generating units.

Provided that in case of gas based ISGS, for optimum utilization of gas, this shall be permitted, i.e. in case of tripping of unit, this gas may be diverted to another unit using the same gas.

(xxvii) After the operating day is over at 24.00 hours, the schedules finally implemented during the day (taking into account all before-the-fact changes in despatch schedule of generating stations and drawl schedule of the Users) shall be issued by SLDC. These schedules shall be the datum for commercial accounting. The average ex-bus capability for each of the generating stations shall also be worked out based on all before-the-fact advice to SLDC.

The SLDC shall issue final implemented schedules -

(a) for all the 'generating stations or injecting entities', and

(b) 'drawing entities'

after taking into account all the revisions in schedules.

The procedure for scheduling and the final implemented schedules issued by SLDC shall be open to all concerned for any checking/ verification, for a period of five days. In case any mistake/omission is detected, SLDC shall forthwith make a complete check and rectify the same.

Clarification note on revision of schedule:

(1) The primary responsibility for declaration of capability and revision thereon lies with generating station and for that purpose it should equip itself with efficient voice and data communication and system recording facilities as specified in CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007, UPEGC 2007 and UPERC (Grant of Connectivity to intra-State Transmission System) Regulations, 2010. Back up communication system must also be established by generating stations and drawee entities forthwith so that any situation of communication failure does not arise at all.

In light of situation of provisions made under ABT order dated 24/25 Sept, 2007, the Commission observed that:

(a) 'generation schedules' for 'generating stations' and 'net drawals schedules' for 'drawing entities' issued/revised by SLDC shall become effective from designated time block irrespective of communication success vide para 13.0(xiii) of ABT order dated 24/25 Sept, 2007. As such there will be no revision in implemented schedule and certification thereof.

(b) Bottleneck in evacuation of power through the transmission system is dealt under para 13.0(ix) and para 14.0(xvii) of ABT order dated 24/25 Sept, 2007 according to which, revisions and certifications shall be made by SLDC on occurrence of the events covered there under. A dedicated transmission line of a generating station is not a part of the transmission system of STU or a transmission licensee.

(2) The word 'grid failure' is not used in the Grid Codes made by CERC or UPERC. Revision in the schedule is admissible in case of 'grid disturbance', the word defined by CEA under sub-clause (i) of clause (1) of Regulation 2 of CEA (Grid Standards) Regulations, 2010, as follows:

"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)."

Therefore, grid disturbance, as mentioned under para-13.0(x) and para-14.0(xviii) of ABT order dated 24/25 Sept, 2007, shall mean 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 132 kV and above. A generating station shall be entitled to revision in schedule provided it trips with the tripping of one or more elements like 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 132 kV and above. For this purpose a dedicated transmission line shall be considered as an integral part of the concerned generating station.

(3) Generating station (in case of under or no injection at high frequency regime) and drawee entity (in case of under or no drawl at low frequency regime) are required to revise their schedule on tripping of a generating unit or generating station as a whole due to some fault in such generating station/unit or due to tripping of a transmission line. Such generating station or drawee entity may intentionally not revise their schedules due to perceived commercial advantages because normal billing is based on scheduled energy.

SLDC shall indentify such repeated deliberate attempts or any other action, which affects grid discipline and which may amount to

gaming, made by any person and report the same to State Power Committee for further investigation/ action.

Documentation of information and consultation

(xxviii) SLDC shall properly document all above information i.e. station wise foreseen ex-power plant capabilities advised by the generating stations, the drawl schedules advised by beneficiaries, all schedules issued by the SLDC, and all revisions/updating of the above.

(xxix) The procedure for scheduling and the final schedules issued by SLDC, shall be open to all users for any checking/verification, for a period of 5 days. In case any mistake/omission is detected, the SLDC shall forthwith make a complete check and rectify the same.

(xxx) A procedure for recording the communication regarding changes to schedules duly taking into account the time factor shall be evolved by SLDC in consultation with STU and Users.

(xxxi) Availability declaration, requisitions and schedules shall be rounded off to one if they are made in fraction.

Curtailment of transactions scheduled by RLDC

(xxxii) When for the reason of transmission constraints i.e. congestion or in the interest of grid security, it becomes necessary to curtail power flow on a transmission corridor, the transactions already scheduled may be curtailed by the Regional Load Despatch Centre.

(xxxiii) The short term customer shall be curtailed first followed by medium term customers, which shall be followed by the long term customers and

amongst the customers of a particular category, curtailment shall be carried out on pro rata basis.

(xxxiv) Collective transaction through power exchange(s) would normally be curtailed subsequent to the short term bilateral transaction(s)

(xxxv) RLDC would curtail a transaction at the periphery of the regional entity. SLDC shall further incorporate the inter-se curtailment of intra-state entities to implement the curtailment.

Curtailment of transactions scheduled by SLDC

(xxxvi) The transaction of a Long term open access customers shall be curtailed as per clause-8 of the schedule-A attached to UPERC (Terms and Conditions for Open Access) (First Amendment) Regulation, 2009.

(xxxvii) The transaction of a Long term open access customers shall be curtailed as per clause-13 of the schedule-B attached to UPERC (Terms and Conditions for Open Access) (First Amendment) Regulation, 2009.

Special dispensation for scheduling of Wind and Solar generation

(xxxviii) (i) With effect from 1.1.2011, Scheduling of wind power generation plants would have to be done for the purpose of UI where the sum of generation capacity of such plants connected at the connection point to the transmission or distribution system is 10 MW and above and connection point is 33 KV and above, and where PPA has not yet been signed. For capacity and voltage level below this, as well as for old wind farms (A wind farm is collection of wind turbine generators that are connected to a common connection point) it

could be mutually decided between the Wind Generator and the transmission or distribution utility, as the case may be, if there is no existing contractual agreement to the contrary. The schedule by wind power generating stations may be revised by giving advance notice to SLDC/RLDC, as the case may be. Such revisions by wind power generating stations shall be effective from 6th time-block, the first being the time –block in which notice was given. There may be maximum of 8 revisions for each 3 hour time slot starting from 00:00 hours during the day.

(ii) The schedule of solar generation shall be given by the generator based on availability of the generator, weather forecasting, solar insolation, season and normal solar generation curve and shall be vetted by the RLDC in which the generator is located and incorporated in the inter-state schedule. If RLDC is of the opinion that the schedule is not realistic, it may ask the solar generator to modify the schedule.

(iii) Concerned RLDC and SLDC shall maintain the record of schedule from renewable power generating stations based on type of renewable energy sources i.e. wind or solar from the point of view of grid security. While scheduling generating stations in a region, system operator shall aim at utilizing available wind and solar energy fully.

Methodology of scheduling, despatch and energy accounting of infirm power prior to date of commercial operation:

(xxxix) Infirm power shall be scheduled by the generating station and communicated to SLDC two hours ahead of synchronization of generating station. The principle of

scheduling at the point of injection and drawl shall be the same as for other cases.

The methodology of energy accounting shall be similar to other cases with the exception that on operation, actual generation of infirm power shall be deemed as the actual schedule and therefore, there shall be no UI implication on such power.

4.1 Time lines in "Procedure of schedule":

Day a head activities

(a) By 9.00 AM, declaration of capability.

(b) By 10.00 AM, receipt of entitlements from RLDC.

(c) By 11.00 AM, communication of declaration of capability and entitlements to drawing entities.

(d) By 1.00 PM, submission of ex-power plant or injection point drawl schedule by drawing entity.

(e) By 3.00 PM, compilation of drawl schedules by SLDC and its conveyance to all concerned.

(f) By 6.00 PM;

(1) receipt of net drawl schedule from RLDC and its apportionment ,

(2) revision of despatch schedule, if necessary,

(3) conveyance of despatch schedules,

(4) conveyance of net drawl schedules,

(5) receipt of schedule of collective transactions made by RLDC at regional periphery, and

(6) scheduling of each collective transactions by SLDC.

(g) By 9.00 PM, in corporation of any change in despatch and drawl schedules.

(h) By 10.00 PM, conveyance of any change in drawls schedules to RLDC.

(i) By 11.00 PM, receipt of final drawl schedules from RLDC.

(j) By 11.30 PM, dispatch and drawl schedules finalized.

(k) During the day of operation, scheduling and despatch of infirm power prior to date of commercial operation:

Infirm power shall be scheduled by the generating station and communicated to SLDC two hours ahead of synchronization of generating station.

After the operating day is over at 24.00 hours next day

SLDC to issue the final implemented schedules to-

(1) all the 'generating stations and injecting entities', and

(2) 'drawing entities'

4.2 Broad re-look at guiding factors of scheduling;

The procedure for scheduling as outline above shall be read with para 13 of the main ABT order of UPERC and due care of the following must be taken specifically-

(a) The declaration shall be made for the capability which can actually be made available by the generating stations.

(b) In case of declaration or revision of capability, the declared capability during peak hours should not be less than that made available during any hour of the day.

However, exception to this rule shall be allowed in case of tripping/re-synchronization of units as a result of forced outage of units.

(c) Schedule generation and actual generation shall be ex-bus at the generating stations.

(d) The schedules of drawl and actual net drawls of the drawing entities shall be at the point the points of drawl.

(e) The revised declared capability and the schedule, in case of forced out of a generating unit, shall became effective from 4th time block, counting the time block in which the revision made to be the first one.

(f) The revision in schedule by SLDC in event of bottle neck in evacuation of power shall become effective from 4th time block, counting the time block in which the revision made to be the first one. Also during, first, second and third block, schedules of generation or drawl shall be revised to actual generation or drawl.

(g) In case of any grid disturbance, scheduled generation of all the generating stations and scheduled drawl of all the beneficiaries shall be deemed to have been revised to be equal to their actual generation/drawl for all the time blocks affected by the grid disturbance. Certification of grid disturbance and its duration shall be done by the State Load Despatch Centre.

(h) Generator or drawing entity may revise declared capability or drawl schedules which shall become effective from 6th time block, counting the time block in which the revision made to be the first one.

(i) Generation schedules and drawl schedules issued/revised by the SLDC shall become effective from designated time block irrespective of communication success.

(j) For any revision of scheduled generation, there shall be a corresponding revision in scheduled drawls of the drawing entities.

(k) SLDC may make revision in schedules in the interest of better grid operation which shall become effective from 4^{th} time block, counting the time block in which the revision made to be the first one.

(l) The banking as well as withdrawal of banked power shall be subject to day a head scheduling.

(m) Availability declaration, requisitions and schedules shall be rounded off to one if they are made in fraction.

(n) No change in schedule in day-ahead-scheduling or revision during the day of operation shall be made in respect to interstate bilateral and collective transactions.

(o) scheduling and despatch of infirm power (prior to date of commercial operation) during the day of operation may be done by the generating station and communicated to SLDC two hours ahead of synchronization of generating station.

4.3 Reports to be generated during the process of scheduling:

(a) Installed capacity of all generating stations including a captive generating station.

(b) Declared capability in MW and MWh in respect to each generating station including that of a captive generating plant.

(c) Declared capability in MW and MWh in respect to each injecting entity which is not a generating station.

(d) Scheduled generation (in MW and MWh) of each generating station in respect to each of its drawing entity as implemented.

(e) Scheduled injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as implemented.

(f) Scheduled generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each:

(i) Bilateral transaction.

(ii) Collective transaction.

(g) Net drawl schedule (in MW and MWh) of each drawing entity in respect to each of the following:

1) State sector generating stations.

2) Central sector generating stations.

3) Bilateral transaction to buy power.

4) Collective transaction to buy power.

5) Any injecting entity within the state.

(h) Scheduled generation (in MW and MWh) of each captive plant in respect to each of its users as implemented.

(i) Net drawl schedule (in MW and MWh) of each user of the captive plant.

(j) Any power contracted by a drawing entity with distribution licensee of its area.

5.0 Energy Accounting:

Section 32 of the Act states that the SLDC shall, inter alia, keep accounts of the quantity of electricity transmitted through the State grid. Therefore, in view of the said provision, all points where the electricity injected or drawn (whether at

regional periphery or at any point within the State) must be pre-identified and metered by special energy meters or interface meters (Main, check and standby meters) prescribed for ABT metering by State Transmission Utility (STU).

Note: STU shall ensure to abide by CEA (Installation and Operation of Meters) Regulations, 2006 (as amended and revised from time to time) in respect of special energy meters or interface meters (Main, check and standby meters) to be installed by it at interface points.

5.1 Metering details:

Each interface meter (Main, check and standby meters) installed at the point of injection or drawl shall be identified by its make, unique meter number, point of installation (whether generator transformer or any feeder or line as might be prescribed by STU at the time of installation of meters), name of 'generating station or injecting entity' and substation in respect to a 'drawing entity'.

Such meters shall be grouped in respect of each 'generating station or injecting entity' and 'drawing entity'. Ex-bus sent out in case of a 'generating station or injecting entity' and ex-bus drawl in case of a 'drawing entity' shall be vector sum of all such meters as grouped for each of the 'generating station or injecting entity' and 'drawing entity'.

Note: STU shall ensure to abide by CEA (Installation and Operation of Meters) Regulations, 2006 (as amended and revised from time to time) in respect of special energy meters or interface meters (Main, check and standby meters) to be installed by it at interface points.

5.2 Transmission Losses:

Weekly transmission losses shall be calculated which would be a difference between the total energy input into the transmission system and total drawl of energy from the transmission system.

The difference between the energy input into the transmission system and that drawn from it over a week shall be derived from the reading of meters identified under para 5.1 and shall be expressed as percentage of the total input energy to be known as the transmission loss for the particular week . The weekly transmission loss, so calculated, shall be used for the purpose of making drawl schedules for the next week. In this manner, the transmission loss for each week shall be calculated which shall be utilized in making drawl schedule for the subsequent week. The transmission losses should be posted on website of the SLDC.

5.3 Basis of energy Account:

(a) The provision made under para 14.0 (xxii) of main ABT order of UPERC is as below:

"After the operating day is over at 2400 hours, the schedule finally implemented during the day (taking into account all before-the-fact changes in despatch schedule of generating stations and drawl schedule of the Users) shall be issued by SLDC. These schedules shall be the datum for commercial accounting. The average ex-bus capability for each of the generating stations shall also be worked out based on all before-the-fact advice to SLDC."

(b) **Energy accounting of infirm power (scheduled during the day of operation prior to date of commercial operation of generating station):**

(i) Infirm power shall be scheduled by the generating station and communicated to SLDC two hours ahead of synchronization of generating station. The principle of scheduling at the point of injection and drawl shall be the same as for other cases.

(ii) The methodology of energy accounting shall be similar to other cases with the exception that on operation, actual generation of infirm power shall be deemed as the actual schedule and therefore, there shall be no UI implication on such power.

5.4 Essentials for Energy Accounting and UI accounting:

a) Installed capacity of all generating stations including a captive generating station.

b) Declared capability in MW and MWh in respect to each generating station.

c) Declared capability in MW and MWh in respect to each injecting entity which is not a generating station.

d) Scheduled generation (in MW and MWh) of each generating station in respect to each of its drawing entity as implemented.

e) Scheduled injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as implemented.

f) Scheduled generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each:

(i) Bilateral transaction.

(ii) Collective transaction.

g) Net drawl schedule (in MW and MWh) of each drawing entity in respect to each of the following:

- State sector generating stations.
- Central sector generating stations.
- Bilateral transaction to buy power.
- Collective transaction to buy power.
- Any injecting entity within the state.

h) Actual generation (in MW and MWh) of each generating station in respect to each of its drawing entity as obtained from ABT meters.

i) Actual injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as obtained from ABT meters.

j) Actual generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each as obtained from ABT meters:

(i) Bilateral transaction.

(ii) Collective transaction.

k) Actual drawl (in MW and MWh) of each drawing entity in respect to each of the following as obtained from ABT meters:

- State sector generating stations.
- Central sector generating stations.
- Bilateral transaction to buy power.
- Collective transaction to buy power.
- Any injecting entity within the state.

l) Scheduled generation (in MW and MWh) of each captive plant in respect to each of its users as implemented.

m) Net drawl schedule (in MW and MWh) of each user of the captive plant.

n) Actual generation (in MW and MWh) of each captive plant in respect to each of its user as obtained from ABT meters.

o) Actual drawl schedule (in MW and MWh) of each user of the captive plant.

p) Any power contracted by a drawing entity with distribution licensee of its area.

5.5 Inputs from meter reading and derivatives:

(a) Frequency, MW, MWh and MVARh for each time block in a day shall be obtained from all the ABT Meters (Main meters) as grouped under 5.1 in respect of each 'generating station or injecting entity' and drawing entity.

(b) MW, MWh and MVARh corresponding to each time block of the day of all meters attributable (as grouped under 5.1 above) to each 'generating station or injecting entity' shall be added to calculate total MW, MWh and MVARh injected into the transmission system by such 'generating station or injecting entity'.

Total MW and MWh as calculated above for each time block shall represent the actual generation or injection of the 'generating stations or injecting entity' in the corresponding time block.

Total MW as calculated above for the 'generating stations shall be used for calculation of availability as per the formula specified by the Commission.

Total MWh as calculated above for the 'generating stations or injecting entity' shall be apportioned to each of it's drawing entity in proportion to MWh indicated in the implemented schedule of such 'generating stations or injecting entity'

(c) MW, MWh and MVARh corresponding to each time block of the day of all meters attributable (as grouped under 5.1 above) to each drawing entity shall be added to calculate total MW, MWh and MVARh drawn from the Transmission System by such drawing entity.

Total MW and MWh as calculated above for each time block shall represent the actual drawl of the 'drawing entity' in the corresponding time block.

Total MWh as calculated above for the 'drawing entity' shall be apportioned to each of it's 'generating stations and injecting entity' in proportion to MWh indicated in the implemented schedule of such 'drawing entity'.

Part-I
Energy and UI Accounting (up to 02.05.2010)

5.6 Regulation of electricity through the grid and treatment thereof :

(a) Para-15.0 (2) of main ABT order of UPERC is as below:

"(2) State & bilateral Inter -state Generating Stations:

(i) Any generation up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall not be construed as gaming, and the generator shall be entitled to UI charges for such excess generation above the scheduled generation (SG).

(ii) For any generation beyond the prescribed limits, the State Load Despatch Centre shall investigate so as to ensure that there is no gaming, and if gaming is found by the State Load Despatch Centre, the corresponding UI charges due to the generating station on account of such extra generation shall be reduced to zero and the amount shall be adjusted in UI account of beneficiaries in the ratio of their capacity share in the generating station.

(iii) On operation, actual generation of co-generation, solar, municipal waste, industrial wastes including solid, semi solid, liquid and gaseous wastes and bio-gas generating plant referred to as (NCES) shall be deemed as the actual schedule."

The regulations -24 (2) and 42(2) of the Utter Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2009 state as reproduced below

"24 (2) *(i) Any generation up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall not be construed as gaming, and the generator shall be entitled to UI charges for such excess generation above the scheduled generation (SG).*

(ii) For any generation beyond the prescribed limits, the State Load Despatch Centre shall investigate so as to ensure that there is no gaming, and if gaming is found by the State Load Despatch Centre, the corresponding UI charges due to the generating station on account of such extra generation shall be reduced to zero and the amount shall be adjusted in UI account of beneficiaries in the ratio of their capacity share in the generating station.

(iii)This provision shall be applicable with effect from the date specified by the Commission for implementation of ABT in the State."

"42 (2) (i) The hydro-electric generating stations are expected to respond to grid frequency changes and inflow fluctuations. They would, therefore, be free to deviate from the given schedule, as long as they do not indulge in gaming, and do not cause a grid constraint. As a result, the actual net energy supplied by a hydro-electric generating station over a day may differ from the Scheduled Energy (ex-bus) for that day. A compensation shall then be made by the concerned Load Despatch Centre in the schedule for the (Day + 3), as described in clause (xix) of Regulation 45.

(ii) The concerned Load Despatch Centre shall periodically check that the generating station is declaring the capacity and energy

sincerely, and is not manipulating the declaration with the intent of making undue money through UI.

(iii) This provision shall be applicable with effect from the date specified by the Commission for implementation of ABT in the State."

Chapter-3 of UPERC (Terms and Conditions for Supply of Power and Fixation of Tariff for sale of power from Captive Generating Plants, Co-generation, Renewable Sources of Energy and Other Non-Conventional Sources of Energy based Plants to a Distribution Licensee) Regulations, 2005, deals with generation from co-generation, renewable energy source of energy and other non-conventional energy sources supplying electricity to the distribution licensee where such plants are located. The regulation 22 (4) specified under Chapter-3 of the said Regulations states as reproduced below:

"On implementation of Availability Based Tariff in the State, the generating plants shall be subject to day ahead scheduling with the exception that on operation, actual generation shall be deemed as the actual schedule."

(b) CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 provides under regulation-6 as below:

"6. Declaration, scheduling and elimination of gaming

(1) The provisions of the Grid Code and the Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations 2008, as amended from time to time, shall be applicable for declaration of capacity, scheduling and elimination of gaming.

(2) The generating station, as far as possible, shall generate electricity as per the day-ahead generation schedule finalized by the Regional Load Despatch Centre in accordance with Grid Code.

Provided that the revision in generation schedule on the day of operation shall be permitted in accordance with the procedure specified under the Grid Code.

***(3)** Any generation from the generating stations other than hydro generating stations up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall not be considered as gaming, and the generating station shall be entitled to UI charges for such excess generation above the scheduled generation.*

(4) For any generation from the generating stations other than hydro generating stations beyond the specified limits, the Regional Load Despatch Centre shall investigate so as to ensure that there is no gaming. Generating stations shall be entitled to recover the Unscheduled Interchange charges only if the investigation establishes that there is no gaming. If gaming is found by the Regional Load Despatch Centre, the corresponding Unscheduled Interchange charges payable to the generating station on account of such extra generation shall be reduced to zero and the amount shall be adjusted in UI pool account of the beneficiaries in the ratio of their capacity share in the generating station.

(5) The hydro generating stations are expected to respond to grid frequency changes and inflow fluctuations. The hydro generating stations shall be free to deviate from the given schedule, without indulging in gaming and causing grid constraint, and a compensation for difference between the actual net energy supply by a hydro generating station and the scheduled energy (ex-bus) over a day shall be made by the concerned Regional Load Despatch Centre in the day-ahead schedule for the 4th day (day plus 3). If the gaming is found by the Regional Load Despatch Centre, the corresponding Unscheduled Interchange charges payable to the generating station on account of such extra generation shall be reduced to zero and the amount shall be adjusted in UI pool account of the beneficiaries in the ratio of their capacity share in the generating station."

(c) In light of above provisions made by UPERC and CERC, it is clarified that:

(i) In case of all thermal generating stations, any generation up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall not be construed as gaming, and the generator shall be entitled to UI charges for such excess generation above the scheduled generation.

(ii) Hydro generating stations shall be free to deviate from the given schedule, as long as they do not indulge in gaming, and do not cause a grid constraint. As a result, the actual net energy supplied by a hydro-electric generating station over a day may differ from the Scheduled

Energy (ex-bus) for that day. A compensation shall then be made by the concerned Load Despatch Centre in the schedule for the (Day + 3).

(iii) Where any co-generation, renewable energy source of energy and other non-conventional energy sources based plants supplies electricity only to the distribution licensee where such plant is located, then on implementation of Availability Based Tariff in the State, such generating plant shall be subject to day ahead scheduling with the exception that on operation, actual generation shall deemed as the actual schedule.

(iv) In case any co-generation, renewable energy source of energy and other non-conventional energy sources based plants does not supplies electricity to the distribution licensee of it's area, then under ABT actual generation shall not be deemed as the actual schedule and normal provisions of a energy accounting and UI accounting shall apply. This will also hold good in case such generating plant supplies electricity to more than one person including the distribution licensee of the area where such plant is located.

(d) Regulation-7 of CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 deals with consequences of crossing the limits of injection or drawl with respect to specified frequency. The said regulation is reproduced below:

"7. Limits on UI volume and consequences of crossing limits

(1) The over-drawal of electricity from the schedule by any beneficiary or a buyer during a time-block shall not exceed 12% of its scheduled drawal or 150 MW(whichever is lower) when

frequency is below 49.5 Hz, and 3% on a daily aggregate basis for all the time blocks when the frequency is below 49.5 Hz.

(2) The under-injection of electricity from the schedule by a generating station or by a seller during a time-block shall not exceed 12% of the scheduled injection of such generating station or seller when frequency is below 49.5 Hz and 3% on daily aggregate basis for all the time blocks when the frequency is below 49.5 Hz.

(3) In addition to UI Rate corresponding to frequency of 49.2 Hz, as stipulated under regulation 5, an Additional Unscheduled Interchange Charge at the rate equivalent to 40% of the UI Rate corresponding to frequency below 49.22 Hz shall be applicable for over-drawal or under-injection of electricity for each time-block when grid frequency is below 49.2 Hz.

Provided that for under-injection of electricity during the time-block when grid frequency is below 49.2 Hz for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel, Additional Unscheduled Interchange Charge shall be equivalent to 40% of the UI Cap Rate.

***Note:** The Additional Unscheduled Interchange Charge shall be reviewed by the Commission on six-monthly basis or earlier, and revised, if necessary through separate orders from time to time*

(4) Payment of Unscheduled Interchange Charges under regulation 5 and the Additional Unscheduled Interchange Charge under Regulation 7(3) above, shall be without prejudice to any action that

may be considered appropriate under section142 and section 149 of the Act for contravention of the over-drawal and under generation limit specified in these regulations, for a time block when frequency is below 49.5 Hz.

(5) The Commission may from time to time, if considered necessary, prescribe the Additional Unscheduled Interchange Charge for over-drawal or under-injection of electricity during the time-block when grid frequency is below 49.5 Hz and up to 49.2Hz.

(6) Any over-drawal and under-injection of electricity shall be computed in accordance with the methodology used for preparation of 'Regional Energy Accounts'.

Provided that the Regional Load Despatch Centre shall prepare and publish on its website the records, on monthly basis, of the UI Accounts, specifying the quantum of over-drawal/under-generation and corresponding amount of UI paid/received for each beneficiary or buyer and generating station or seller for the time-blocks when grid frequency was below 49.2 Hz and between 49.5-49.2 Hz separately."

(e) The availability is defined and formula of it's calculation is provided under Regulation 14 (vi) of UPERC (Terms and conditions of generation tariff) Regulations, 2009 which is as below:

"(vi) ***'Availability'*** *in relation to a thermal generating station for any period means the average of the daily average declared capacities (DCs) for all the days during that*

period expressed as a percentage of the installed capacity of the generating station minus normative auxiliary consumption in MW, and shall be computed in accordance with the following formula:

$$\textbf{Availability (\%)} = 10000 \times \sum_{i=1}^{N} DC_i \Big/ \{ N \times IC \times (100 - AUX_n) \}\%$$

where,

IC = Installed Capacity of the generating station in MW,

DC_i = Average declared capacity for the i^{th} day of the period in MW,

N = Number of days during the period, and

AUX_n = Normative Auxiliary Energy Consumption as a percentage of gross generation;"

(f) UPERC (Terms and Conditions for Open Access) (First Amendment) Regulations, 2009 has defined, under regulation 4.1, the treatment in energy accounting to be given to a customer who has contract for supply of electricity from a distribution licensee in addition to supplies through open access transactions. Regulation 4.1 is reproduced as below:

"*4.1 Open access transaction shall be carried out under the provisions of UPERC Order dated 24/25.9.2007 passed in matter of Availability Based Tariff and any other order passed from time to time, read with*

U.P. Electricity Grid Code, Indian Electricity Grid Code, UPERC (Terms and Conditions of Generation tariff) Regulations and any other relevant regulation/order/code, as the case may be, and as amended and applicable from time to time. SLDC shall make available above mentioned orders, codes, and regulations on its website.

"Provided that customer, having premises in area of a distribution licensee, contracts for supply of electricity from such distribution licensee in addition to supplies from other source; energy accounting of electricity supplied from other source shall be carried out first and electricity supplied from such distribution licensee later. In case other source is more than one, the source that comes into open access transactions first, in chronological order of dates of approval of nodal agency , shall be booked for energy accounting first and thereafter subsequent sources shall be taken up until all are exhausted and supply from distribution licensee shall be at last."

In such case, energy accounting of a generating station *(including a captive plant in case of its user/member (s))* or an injecting entity shall be under taken in the manner specified under para-5.7.1 & 5.7.2 or 5.7.1 & 5.7.3, as the case may be.

IMPORTANT NOTE: UPERC (Terms and Conditions for Open Access) (First Amendment) Regulation, 2009 has been notified on 30.04.2010. So far as applicability of Regulation 4.1 before the date of notification is concerned, the Commission has held that this remedy can be applied from 1st April, 2009 vide order dated 27.08.2010 passed in petition No.659/ 2010.

(g) The purchase of electricity by the person who establishes a captive plant is dealt under regulation 19 of the UPERC (Terms and Conditions for Supply of Power and Fixation of Tariff for sale of power from Captive Generating Plants, Co-generation, Renewable Sources of Energy and Other Non-Conventional Sources of Energy based Plants to a Distribution Licensee) Regulations. This regulation is reproducer as below:

"Any person, who establishes, maintains and operates a Captive Power Plant, may purchase electricity from a generating company or a distribution licensee in case his plant is not in a position to generate electricity to meet the requirement of his own use and consequently additional power is required:

Provided that such purchase of electricity, from a distribution licensee, shall be charged as per the tariff determined by the Commission under appropriate 'Rate Schedule of tariff under which the total load requirement of the plant shall belong to:

Provided also that in case of purchase of power though a trader or a generating company or a distribution licensee other than a distribution licensee of the area in which the plant is located, the rate shall be as mutually agreed however, surcharge and additional surcharge besides other charges shall be payable as determined by the Commission under open access regulations.

Provided further that the tariff payable by a captive plant to a distribution licensee, in case of banking of energy, shall be as per

Regulation 39(B) if that plant has an arrangement of banking of energy with such distribution licensee."

5.7 Procedure for energy accounting

5.7.1 Scheduled Energy of a 'generating station or injecting entity' :

Summation of energy in MWh for all 96 time block in a day, as obtained from implemented schedule of a 'generating station or injecting entity', shall be the scheduled energy for the day in MWh.

Cumulative total of above scheduled energy, over the days in a month, shall be the scheduled energy for the month.

GENERATING STATION

5.7.2 Calculation of excess or under injection in case of a generating station :

Deviations from schedule shall be calculated as per para-5.7.2.2 and -

(1) Energy sent out of a 'generating station' in MWh of each time block as obtained from Joint Meter Reading (JMR) of ABT meter shall be compared with its MWh schedule (as indicated in the implemented schedule) and the difference between the two shall be recorded separately as –

(a) energy in excess of the schedule,

(b) less injection of energy than the schedule, and

(c) less injection of energy when the frequency was below 49.5 Hz.

5.7.2.1 Check for excess energy above 105% for a generating station

(1) The excess energy in MWh (as calculated under 5.7.2 (1) (a) above) shall be checked if it was not more than 105% of the energy that could

have been generated from MW declared in 'DC' in the corresponding time block.

In case it is more than 105% in any of the time block, it shall be reduced and contained at 105%.

(2) Energy in MWh of all time blocks (where excess injection noticed) shall be added.

(3) The average declared capacity in MW over a day shall be calculated which would be summation of MW of all time blocks divided by 96.

(4) The sum of MWh obtained under (2) shall be checked if it was not more than 101% of the energy that could be generated from average declared capacity in MW (calculated under (3)).

In case it is more than 101%, the excess energy shall be calculated and energy in MWh of each time blocks (where excess injection noticed) shall be reduced to bring down excess energy to 101% over a day. The above reduction shall be carried out by the principle of apportionment.

(5) Excess energy calculated under (4) shall qualify a 'generating station' to receive UI charge at applicable rate from the drawing entity.

Note: This provision shall apply to generating stations other than Hydro generating station.

5.7.2.2 Deviation from Schedule by a generating station under para 5.7.2 :

(1) Deviation from schedule under para 5.7.2 shall be calculated in consideration of the following –

(a) scheduled energy of the generating station from implemented schedule,

(b) the actual energy generation from JMR.

(2) The excess energy than the schedule (5.7.2.2(1) (b) minus 5.7.2.2(1) (a)) shall be recorded as positive unscheduled inter change to be paid by the drawee entity to the generating station concerned at UI rate as applicable.

(3) The less energy than the schedule (5.7.2.2(1) (b) minus 5.7.2.2(1) (a)) shall be recorded as negative unscheduled inter change to be paid by the generating station to drawing entity concerned at UI rate as applicable.

(4) The unscheduled inter change (UI) with respect to schedule shall be used for calculation of UI charges at frequency linked rates as might be specified by the CERC.

5.7.2.3 Under injection at frequency below 49.5 Hz by a generating station

5.7.2.3.1 Under injection below 49.5 Hz by a generating station :

(1) The under injection for all time blocks at frequency below 49.5 Hz shall be separated from the under injections identified under 5.7.2 (b) and injection of such time blocks is aggregated.

(2) The injection/generation for all time blocks when frequency is below 49.5 Hz shall be added and its 3% calculated.

(3) The under injection in MWh (as separated under (1) above) for all time blocks shall be checked if it was not less than 88% of the scheduled energy/injection.

In case it is less than 88% in any of the time block, the short fall shall be derived. All such short falls below 88% for all such time blocks shall be added which should not be more than 3% of the daily injection/generation calculated under (2) above.

(4) In case if under injection at (3) is more than 3%, the generating station shall pay an additional UI charge at the rate equivalent to 40% of the UI rate corresponding to frequency below 49.22 Hz for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate corresponding to 49.2 Hz.

For under injection of electricity during the time block when grid frequency is below 49.2 Hz for the generating stations using coal or gas or lignite supplied in the APM as fuel, additional UI charge shall be equivalent to 40% of the UI cap rate.

The above payment of additional UI shall be without prejudice to any action taken by the Commission against such 'generating station or injecting entity'.

(5) In case of under injection at (4) is not more than 3%, normal UI rates for under injection shall be payable.

Note: (1) The UI cap rate is applicable in case of generating station (whose tariff is determined by UPERC) using coal or lignite or gas supplied under Administrative Price Mechanism (APM) as the fuel.

(2) The injection of electricity without DC or SG shall mean no implemented schedule on the day of operation as such transaction might not at all be taken for the purpose of energy accounting.

The excess energy so available but not included in the energy accounting will finally settle through lowering of the transmission losses in the grid.

(3) In case, the generating station draws electricity from the grid, the same should be considered as the electricity supplied by the distribution licensee of the area where such generating station is located. Such drawl might be charged at UI rate in absence of any contract for supply of power to such generating station by any person or distribution licensee of that area.

5.7.2.4 Energy accounting of infirm power (schedule during the day of operation for injection prior to date of commercial operation):

(a) Infirm power shall be scheduled by the generating station and communicated to SLDC two hours ahead of synchronization of generating station. The principle of scheduling at the point of injection and drawl shall be the same as for other cases.

(b) The methodology of energy accounting shall be similar to other cases with the exception that on operation, actual generation of infirm power shall be deemed as the actual schedule and therefore, there shall be no UI implication on such power.

INJECTING ENTITY

5.7.3 Calculation of excess or under injection in case of a 'injecting entity':

Deviations from schedule shall be calculated as per para-5.7.3 and -

(1) Energy sent out of a 'injecting entity' in MWh of each time block as obtained from Joint Meter Reading (JMR) of ABT meter shall be compared

with its MWh schedule (as indicated in the implemented schedule) and the difference between the two shall be recorded separately as –

(a) energy in excess of the schedule,

(b) less injection of energy than the schedule, and

(c) less injection of energy when the frequency was below 49.5 Hz.

5.7.3.1 Deviation from Schedule by an 'injecting entity' under para 5.7.3:

(1) Deviation from schedule shall be calculated in consideration of the following –

(a) scheduled energy of the 'injecting entity' from implemented schedule,

(b) the actual injection as per JMR.

(2) The excess energy than the schedule (5.7.3.1(1) (b) minus 5.7.3.1(1) (a)) shall be recorded as positive unscheduled inter change to be paid by the drawing entity to the 'injecting entity' concerned at UI rate as applicable.

(3) The less energy than the schedule (5.7.3.1(1) (b) minus 5.7.3.1(1) (a)) shall be recorded as negative unscheduled inter change to be paid by the injecting entity to the drawing entity concerned at UI rate as applicable.

(4) The unscheduled inter change (UI) with respect to schedule shall be used for calculation of UI charges at frequency linked rates as might be specified by the CERC.

5.7.3.2 Under injection at frequency below 49.5 Hz by a 'injecting entity'

5.7.3.2.1 Under injection below 49.5 Hz by a 'injecting entity'

(1) The under injection for all time blocks at frequency below 49.5 Hz shall be separated from the under injections identified under 5.7.3 (b) and injection of such time blocks is aggregated.

(2) The injection for all time blocks when frequency is below 49.5 Hz shall be added and its 3% calculated.

(3) The under injection in MWh (as separated under (1) above) for all time blocks shall be checked if it was not less than 88% of the scheduled energy/injection.

In case it is less than 88% in any of the time block, the short fall shall be derived. All such short falls below 88% for all such time blocks shall be added which should not be more than 3% of the daily injection calculated under (2) above.

(4) In case if under injection at (3) is more than 3%, the injecting entity shall pay an additional UI charge at the rate equivalent to 40% of the UI rate corresponding to frequency below 49.22 Hz for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate corresponding to 49.2 Hz.

The above payment shall be without prejudice to any action taken by the Commission against such 'injecting entity'.

(5) In case of under injection at (4) is not more than 3%, normal UI rates for under injection shall be payable.

5.7.3.3 Check for excess injection by a injecting entity:

(1) The excess energy in MWh (as calculated under 5.7.3 (1) (a) above) shall be checked if it was not more than 105% of the energy that could

have been injected at MW declared in 'DC' in the corresponding time block.

In case it is more than 105% in any of the time block, it shall be reduced and contained at 105%.

(2) Energy in MWh of all time blocks (where excess injection noticed) shall be added.

(3) The average declared capacity in MW over a day shall be calculated which would be summation of MW of all time blocks divided by 96.

(4) The sum of MWh obtained under (2) shall be checked if it was not more than 101% of the energy that could be injected from average declared capacity in MW (calculated under (3)).

In case it is more than 101%, the excess energy shall be calculated and energy in MWh of each time blocks (where excess injection noticed) shall be reduced to bring down excess energy to 101% over a day. The above reduction shall be carried out by the principle of apportionment.

(5) Excess energy calculated under (4) shall qualify a 'injecting entity' to receive UI charge at applicable rate from the drawing entity.

Note: The injecting entity (who is not a generating station) may be a distribution licensee supplying electricity to any other distribution licensee or an open access customer situated in the area of another distribution licensee. The control on injection of such an injecting entity has been conceived similar to that exercised in case of a generating station.

DRAWING ENTITY

5.7.4 Scheduled Energy of a 'drawing entity' :

Summation of energy in MWh for all 96 time block in a day, as obtained from implemented schedule of a 'drawing entity' shall be the scheduled energy for the day in MWh.

Cumulative total of above scheduled energy, over the days in a month, shall be the scheduled energy for the month.

5.7.4.1Calculation of over or under drawl:

Deviation from schedule shall be calculated as per para-5.7.4.2 and -

(1)Energy drawl of a 'drawing entity' in MWh of each time block as obtained from Joint Meter Reading (JMR) of ABT meter shall be compared with its MWh schedule (as indicated in the implemented schedule) and the difference between the two shall be recorded separately as –

(a) energy drawal in excess of the schedule,

(b) energy drawal less than the schedule, and

(c) over drawl when the frequency was below 49.5 Hz.

5.7.4.2 Deviation from Schedule by a 'drawing entity' under para 5.7.4.1:

(1) Deviation from schedule shall be calculated in consideration of the following –

(a) scheduled drawal energy of the 'drawing entity' from implemented schedule,

(b) the actual energy drawl as per JMR .

(2) The excess energy than the schedule (5.7.4.2(1)(b) minus 5.7.4.2(1) (a)) shall be recorded as positive unscheduled inter change to be paid by the drawing entity at UI rate as may be applicable.

(3) The less energy than the schedule (5.7.4.2(1) (b) minus 5.7.4.2(1) (a)) shall be recorded as negative unscheduled inter change to be received by the drawing entity concerned at UI rate as applicable.

(4) The unscheduled inter change (UI) with respect to schedule shall be used for calculation of UI charged at frequency linked rates as might be specified by the CERC.

5.7.4.3 Over drawl at frequency below 49.5 Hz by a 'drawing entity'

5.7.4.3.1 Over drawl below 49.5 Hz

(1) The over drawl for all time blocks at frequency below 49.5 Hz shall be separated from the over drawl identified under 5.7.4.1 (1) and over drawl of such time blocks is aggregated.

(2) The scheduled drawl for all time blocks at frequency below 49.5 Hz shall be added and its 3% calculated.

(3) The over drawl in MWh (as separated under (1) above) for all time blocks shall be checked if it was not more than 12% of the scheduled drawl or 150 MW (whichever is lower).

In case it is more than 12% or 150 MW in any of the time block, the over drawl shall be derived. All such over drawl for all such time blocks shall be added which should not be more than 3% of the daily drawl calculated under (2) above.

(4) In case if over drawl at (3) is more than 3%, the drawing entity shall pay an additional UI charge at the rate equivalent to 40% of the UI rate corresponding to frequency below 49.22 Hz for over drawl of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate corresponding to 49.2 Hz.

The above payment of additional UI shall be without prejudice to any action taken by the Commission against such 'drawing entity'.

(5) In case of over drawl at (4) is not more than 3%, normal UI rates for over drawl shall be payable

Note: In case of drawing entity (as captive user connected or not connected with grid or consumer) not having contracted power from distribution licensee of its area besides electricity received through open access, the following provisions shall apply:

(a) Such drawing entity receiving electricity from captive generating plant or any other generating station shall ensure to draw power as per schedule during each 15-minute time block. The drawl more than schedule shall be considered as 'back up supply' ('back up charges' shall be constituted accordingly) to such drawing entity from distribution licensee of his area. Such over drawal shall be charged at frequency linked rate 25% higher than UI rate specified by CERC from time to time.

(b) Above charges shall be without prejudice to penalty which may be imposed by the Commission, for non compliance of the provision of the Act, Regulation or Code or Order made there under, on recommendation of SLDC.

(c) The billing of the backup charges, under sub-para (a) above, shall be carried out with the billing of UI charges and paid within ten days.

DRAWING ENTITY HAVING CONTRACTED POWER FROM DISTRIBUTION LICENSEE OF ITS AREA BESIDES ELECTRICITY RECEIVED THROUGH OPEN ACCESS

5.7.5 A drawing entity may have agreement to receive electricity from more than one source through open access as well as a contract with the distribution company of its area to receive electricity at the drawl point as backup supply.

5.7.5.1 In such case, energy accounting of a generating station *(including a captive plant in case of its user/member (s))* or an injecting entity shall be under taken in the manner specified under para-5.7.2 or 5.7.3, as the case may be.

5.7.5.2 The energy accounting at drawl end of such drawing entity *(including user/member (s) of a captive plant)* shall be done in the following manner:

(a) The actual generation or injection in MW and MWh shall be recorded at the injection point for each time block.

(b) Net drawl at the drawl point shall be calculated after deduction of transmission losses from MW and MWh recorded at (a). This shall be treated as the electricity received by the drawing entity at the drawl point through open access from specified generating station or injecting entity.

(c) Record *(from MRI of ABT meter installed at the drawl point of the drawing entity)* total MW and MWh drawn at the drawl point by drawing entity for each time block.

(d) The difference of (c) – (b) in terms of MW and MWh shall be recorded. Such difference may be –

(i) Positive, which means that the distribution licensee has supplied electricity to such drawing entity in addition to electricity received through open access.

(ii) Zero, which means that the distribution licensee has not supplied electricity to such drawing entity in addition to electricity received through open access.

(iii) Negative, which means that the drawing entity has not consumed full electricity received by it through open access but supplied such amount of electricity to distribution licensee.

5.7.5.3 The MWh recorded as positive difference shall be billed by the distribution licensee at applicable retail tariff.

5.7.5.4 The maximum MW recorded at (d) (i) during a month shall be the maximum demand posed by the drawing entity on the system of the distribution licensee which shall be charged according to the provisions of retail tariff.

5.7.5.5 The negative difference under (d) shall be adjusted with the energy supplied by the distribution licensee at 5.7.5.3

5.7.5.6 SLDC in such case shall issue energy account only. The billing of electricity supplied or adjustment in energy (if any) by distribution licensee shall be under taken by distribution licensee.

IMPORTANT NOTE:–This provision shall be applicable from 1st April, 2009 as directed by the Commission in order dated 27.08.10 and order dated 12.09.2011 passed in Petition No.659/2010.

Note: After all weekly energy accounts for the relevant month had been issued by the SLDC, distribution licensee shall prepare, on the basis of such energy accounts, bill for energy, demand charge and the protective load charge (wherever applicable) on the drawing entity in accordance with the terms and conditions and rates specified by the Commission from time to time in the retail tariff order.

AVAILABILITY OF CAPACITY

5.7.6 Calculation of availability:

Calculation of availability shall be done in respect to the generating stations and injecting entities.

5.7.6.1 The availability shall be calculated on the basis of average capability declared in MW by the 'generating station or injecting entity'.

5.7.6.2 The formula for calculation of availability shall be as specified in UPERC (Terms and conditions of Generation tariff) Regulations, 2009.

The installed capacity (IC) *(unless revised by the Commission by an order or otherwise on account of de-ration, exclusion of capacity due to ongoing R & M, up-rating after R & M and addition of new unit)* and auxiliary consumption (AUX) (*unless revised as per Regulations on account of re-commissioning after R & M*) of the plant shall be as specified for a generating station in the said Regulations or a Power

Purchase Agreement, as may be relevant to any 'generating station or injecting entity' not covered by the said Regulations.

5.7.6.3 The availability shall be calculated up to second place of the decimal.

Reports generation for UI calculation

5.7.7 The process of energy accounting must generate following reports for UI Calculation:

(i) Scheduled generation (in MW and MWh) of each generating station in respect to each of its drawing entity as implemented.

(ii) Scheduled injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as implemented.

(iii) Scheduled generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each:

(a) Bilateral transaction.

(b) Collective transaction.

(iv) Net drawl schedule (in MW and MWh) of each drawing entity in respect to each of the following:

(a) State sector generating stations.

(b) Central sector generating stations.

(c) Bilateral transaction to buy power.

(d) Collective transaction to buy power.

(e) Any injecting entity within the state.

(v) Actual generation (in MW and MWh) of each generating station in respect to each of its drawing entity as obtained from ABT meters.

(vi) Actual injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as obtained from ABT meters.

(vii) Actual generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each as obtained from ABT meters:

(a) Bilateral transaction.

(b) Collective transaction.

(viii) Actual drawl (in MW and MWh) of each drawing entity in respect to each of the following as obtained from ABT meters:

(a) State sector generating stations.

(b) Central sector generating stations.

(c) Bilateral transaction to buy power.

(d) Collective transaction to buy power.

(e) Any injecting entity within the state.

(ix) Scheduled generation (in MW and MWh) of each captive plant in respect to each of its users as implemented.

(x) Net drawl schedule (in MW and MWh) of each user of the captive plant.

(xi) Actual generation (in MW and MWh) of each captive plant in respect to each of its user as obtained from ABT meters.

(xii) Actual drawl schedule (in MW and MWh) of each user of the captive plant.

(xiii) Any power contracted by a drawing entity with distribution licensee of its area.

(xiv) No unscheduled interchange due to energy accounting of infirm power (scheduled during the day of operation for injection prior to date of commercial operation).

5.8 Procedure for Unscheduled Interchange (UI) accounting

(a) UPERC, in ABT order dated 24/25 September, 2007, has directed that UI rates shall be as revised from time to time by CERC. As per regulation-24 and 42 of the UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009, the charges for all UI transactions shall be based on average frequency of the time block as notified by CERC from time to time. In view of the aforesaid provisions, the following regulations made by CERC in respect to unscheduled inter change charges shall apply for the purpose of ABT in the State:

(i) CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009, effective from 01.04.09 to 02.05.10.

(ii) CERC (Unscheduled Interchange Charges and related matters) Regulations, 2010, effective from 03.05.10.

(b) As per UI Regulations of CERC cap rate is applicable on the generating stations whose tariff is determined by CERC under Section-62 of the Act vide regulation (2) (f) read with regulation-5.

(c) The broad principles of Unscheduled Interchange accounting shall be as below:

(i) The less drawl by a generating station or injecting entity directly affects the drawing entity for which the electricity was schedule for supply. As such for

less drawls, a generating station or injecting entity shall be paying UI charges to the concerned drawing entity (s).

(ii) The excess generation or injection would mean electricity injected into the grid after meeting the scheduled dispatches. Since all scheduled requirements have been met, therefore excess generation or injection over and above the schedule shall be allocated among all those who have drawn electricity more than scheduled drawls. Such allocations among drawing entities would be made in consideration of their total drawl schedules by the principle of apportionment.

(iii) Excess generation or injection by one or more than one generating station or injecting entity in any time block would correspond to one frequency and linked UI rate. Since the UI linked rate of electricity is uniform in respect to each for any time block, generating stations or injecting entities shall be picked up in alphabetic order and excess electricity booked on drawing entities. Drawing entities shall be paying UI to generating stations or injecting entities from where they have received excess electricity.

(iv) After the excess generation is booked on drawing entities, any excess drawl still left with any drawing entity shall mean that he has drawn electricity from one who has drawn less.

(v) The less drawl by drawing entities shall be compensated by the entities that are still left with excess drawl under (iv) above and such less drawing entities shall receive UI charges from excess drawing entities. Since frequency linked UI rates are uniform for all drawing entities, therefore less drawl shall also be compensated by the principle of apportionment.

UI due to less generation by a generating station

5.8.1 The generating station shall pay UI for less generation under the following two conditions :

(i) at normal UI rates when frequency varies from below 50.3 Hz to 49.22 Hz and below;

(ii) additional UI of 40% when frequency is below 49.2 Hz subject to certain conditions specified under regulation – 7 of CERC UI Regulations, 2009.

5.8.1.1 Less energy injection than the schedule by a generating station (calculated under para – 5.7.2 (1) (b)) shall be apportioned in the ratio of 'schedule of generation' in respect to its drawing entities. UI charges at applicable rate (i.e. normal rates) shall be calculated and the generating station shall pay UI charges to the concerned drawing entities.

Provided that the UI rate for generating stations supplied fuel under Administered Price Mechanism (APM) shall be capped at 408 paisa per KWh as per CERC Regulations as amended from time to time by the Central Commission. The UI cap is applicable on generating stations using coal or lignite or gas whose tariff is determined by UPERC.

5.8.1.2 As specified under regulation–7 of CERC UI Regulations, 2009, UI charges payable by a generating station for under injection below 49.5 Hz by a generating station and calculated under para 5.7.2.3.1 shall be additional by 40% for under injection below 49.2 HZ. The additional UI shall be shown separately in addition to UI charges calculated under 5.8.1.1.

Provided that the additional UI rate for generating stations supplied fuel under Administered Price Mechanism (APM) shall be 40% of the capped rate of 408 paisa per KWh as per CERC Regulations as amended from time to time by the Central Commission. The UI cap is applicable on generating stations whose tariff is determined by UPERC.

UI due to excess generation by a generating station

(1) Excess generation up to 105%

5.8.2 Excess generation calculated under 5.7.2.1 from all generating stations (arranged in alphabetic order) shall be listed.

5.8.2.1 All drawing entities who have over drawn shall be listed with their total scheduled energy at drawl end and quantum of energy over drawn by them from para 5.7.4.1.

5.8.2.2 The excess energy injection of a generating station first in alphabetic order shall be apportioned among drawing entities in the ratio of their scheduled energy at drawal end.

5.8.2.3 If any drawing entity does not receive the excess power either due to less drawl or drawl as per schedule, then such balance of power shall be apportioned among the remaining drawing entities.

5.8.2.4 The process under 5.8.2.3 shall be repeated unless excess energy of that particular generating station is exhausted.

5.8.2.5 UI charges at applicable rate shall be calculated at applicable rate and the generating station shall receive UI charges from the concerned drawing entity.

Provided that the UI rate for generating stations supplied fuel under Administered Price Mechanism (APM) shall be capped at 408 paisa per KWh as per CERC Regulations or that amended from time to time by the Central Commission. The UI cap is applicable on generating stations using coal or lignite or gas whose tariff is determined by UPERC.

5.8.2.6 The process under para – 5.8.2.2 to 5.8.2.5 shall be repeated for the generating station next in alphabetic order.

5.8.2.7 The process under para – 5.8.2.2 to 5.8.2.6 shall continue untill all generating stations in the alphabetic order have exhausted their excess energy.

5.8.2.8 The drawing entities still left with excess drawl shall be listed separately and attributed to have over drawn from the excess generation made by the generating stations above 105%.

(2) Excess generation above 105%

5.8.3 The drawing entity still left with excess drawl under para 5.8.2.8 shall receive energy from the excess generation made by the generating stations above 105%

5.8.3.1 Excess generation above 105% is calculated under para – 5.7.2.1 shall be allocated to drawing entities in the same manner as described under para – 5.8.2 above and UI charges shall be payable by the drawing entities at applicable rates to the general pool of SLDC because generating stations are not entitled for payment UI charges when generation exceeds 105% in a time block and 101% on overall day basis.

Provided that the UI rate for generating stations supplied fuel under Administered Price Mechanism (APM) shall be capped at 408 paisa per KWh as per CERC Regulations or that amended from time to time by the Central Commission. The UI cap is applicable on generating stations whose tariff is determined by UPERC.

5.8.3.2 The drawing entity still left with excess drawl shall be listed separately and attributed to have over drawn from the excess injection by injecting entities.

UI due to under or less injection by an injecting entity :

5.8.4 An injecting entity, which is not a generating station, is obliged to supply electricity in MWh corresponding to MW schedule and duration of time. Any under injection due to any reason, shall entitle a drawing entity to UI charges at applicable rate specified by CERC from time to time.

5.8.4.1 The injecting entity shall pay UI for less generation under the following two conditions :

(i) at normal UI rates when frequency varies from below 50.3 Hz to 49.22 Hz and below;

(ii) additional UI of 40% when frequency is below 49.2 Hz subject to certain conditions specified under regulation – 7 of CERC UI Regulations, 2009.

5.8.4.2 Less energy injection than the schedule by a injecting entity (calculated under para – 5.7.3 (1) (b)) shall be apportioned in the ratio of 'schedule of injection' in respect to its drawing entities. UI charges at applicable rate shall be calculated at applicable rate and the injecting entity shall pay UI charges to the concerned drawing entities.

5.8.4.3 As specified under regulation – 7 of CERC UI Regulations, 2009, UI charges payable by a injecting entity for under injection below 49.5 Hz by a injecting entity and calculated under para 5.7.3.2.1 shall be additional by 40% for under injection below 49.2 HZ. The additional UI shall be shown separately in addition to UI charges calculated under 5.8.4.2.

UI due to excess injection by an injecting entity :

5.8.5 Excess injection calculated under 5.7.3.1 (2) from all injecting entity shall be listed in alphabetic order.

5.8.5.1 All drawing entities listed to have left with excess drawl under para 5.8.3.2 shall receive power from such excess injection.

5.8.5.2 The excess energy injection of an injecting entity first in alphabetic order shall be apportioned among drawing entities in the ratio of their scheduled energy at drawl end.

5.8.5.3 If any drawing entity does not receive the excess power either due to less drawl or drawl as per schedule, then such balance of power shall be apportioned among the remaining drawing entities.

5.8.5.4 The process under 5.8.5.3 shall be repeated unless excess energy of that particular injecting entity is exhausted.

5.8.5.5 UI charges at applicable rate shall be calculated at applicable rate and the injecting entity shall receive UI charges from the concerned drawing entity.

5.8.5.6 The process under para – 5.8.5.2 to 5.8.5.5 shall be repeated for the injecting entity next in alphabetic order.

5.8.5.7 The process under para – 5.8.5.2 to 5.8.5.6 shall continue until all injecting entity in the alphabetic order to have exhausted their excess energy.

5.8.5.8 The drawing entity still left with excess drawl shall be listed separately and attributed to have over drawn from the share of entities that have drawn less.

Under drawl by a drawing entity

5.8.6 Under drawl by drawing entities as calculated under para 5.7.4.1 shall be listed with their total scheduled energy at drawl end and quantum of energy drawn less by them.

5.8.6.1 The less energy injection apportioned to drawing entities under para 5.8.1.1 (due to less generation by generating stations) and para 5.8.4 (due to less injection by injecting entities) shall be added to quantum of energy drawn less by them to know the amount of less drawl still left and which has not been compensated by unscheduled inter change charges as yet by the entities who are left with excess drawn under para 5.8.5.8.

5.8.6.2 The over drawl of drawing entity left still with highest over drawl under para 5.8.5.8 shall be apportioned among the entities drawing less in the ratio of their scheduled drawl and added to less drawl still left under para 5.8.6.1 to know the amount of less drawl still left and which has not been compensated by unscheduled inter change charges as yet by the entities who are left with excess drawn under para 5.8.5.8. The less drawing entities shall receive UI charges from such excess drawing entities on the quantum of energy apportioned to them.

5.8.6.3 The over drawl of drawing entity of next in highest over drawl order under para 5.8.5.8 shall be apportioned among the entities drawing less in the ratio of their scheduled drawl and added to less drawl still left under para 5.8.6.2

to know the amount of less drawl still left and which has not been compensated by unscheduled inter change charges as yet by the entities who are left with excess drawn under para 5.8.5.8.

5.8.6.4 The process of para 5.8.6.3 shall be repeated to exhaust the over drawl of drawing entity of next to next in highest over drawl order under para 5.8.5.8 until all over drawls have been exhausted to compensate less drawls.

UI ACCOUNTING OF DRAWING ENTITY HAVING CONTRACTED POWER FROM DISTRIBUTION LICENSEE OF ITS AREA BESIDES ELECTRICITY RECEIVED THROUGH OPEN ACCESS

5.8.7 AT THE POINT OF INJECTION

In such case, UI accounting of a generating station *(including a captive plant in case of its user/member (s))* or an injecting entity shall be under taken in the manner specified under para - 5.8.1, 5.8.2 and 5.8.3 in case of a generating station and para - 5.8.4 and 5.8.5 in case of an injecting entity.

5.8.8 AT THE POINT OF DRAWL

Accounting at all points shall be made in accordance with para – 5.7.5.

UI Rates (up to 2.5.2010)

5.9 UPERC, in ABT order dated 24/25 September, 2007, has directed that UI rates shall be as revised from time to time by CERC.

5.9.1 UI rates up to 02.05.10 shall be as specified in CERC (Unscheduled Inter change charges and related matters) Regulations, 2009 which came into effect on 01.04.09.

UI rates are specified under regulation-5. UI cap rate is specified under proviso to this regulation which will be applicable on generating stations using coal or lignite or gas as fuel supplied under APM. Regulation-

2 (f) defines 'generating station' as a generating station whose tariff is determined by the Commission under Section-62 of the Act. Therefore the cap rate is applicable on generating stations whose tariff is determined by UPERC.

The above fact is affirmed by the Statement of Objects and Reasons dated 08.06.09 concerned with CERC (Unscheduled Inter change charges and related matters) Regulations, 2009 in its paragraph 7.7 and 8.2 which states that UI price cap is imposed on the generating stations which are regulated by the Commission and this cap shall not be applicable to RLNG/LNG/non-APM gas fired generating stations, hydro power stations, merchant plants, merchant capacity and other generating stations for which its fixed cost is not being reimbursed through capacity charge.

Therefore;

(a) Frequency linked UI rates as specified under regulation-5 shall apply in all cases covered under intra-state ABT.

(b) UI rates as specified under regulation-5 shall also apply on :

(i) 'intra-state entities' (as defined under regulation-2 (h) of CERC Open Access Regulations, 2008) engaged in interstate transactions; and

(ii) seller and buyer (as defined under CERC UI Regulations, 2009) who are engaged in interstate transactions.

(c) Cap rate of 408 paisa per unit (as specified under proviso to regulation-5) shall apply in case of generating station using coal or Iignite or gas supplied under APM as fuel and whose tariff is determined by CERC, such as Tanda TPS.

5.9.2 Limits for over drawl and under injection have been specified under regulation-7 of the said CERC Regulations.

(i) If over drawl or under injection is beyond such limits, additional UI of 40% of the UI rate corresponding to frequency below 49.22 Hz shall be applicable for over drawl or under injection of electricity for each time block when frequency is below 49.2 Hz.

Additional UI rates shall be calculated at UI rates specified under regulation-5 of CERC UI Regulation, 2009 in cases of para-5.8.9.1 (a) and (b).

(ii) For under injection of electricity during the time block when frequency is below 49.2 Hz for the generating stations (whose tariff is determined by CERC) and using fuel supplied under APM, additional UI shall be equivalent to 40% of UI cap rate (408 paisa per KWh).

5.9.3 UI charges for all transactions for intra-state entities scheduled by RLDC (for bilateral transactions) or NLDC (for collective transactions), whose energy accounting or UI accounting is to be done by SLDC, shall be 105% (for over drawls or under generation/injection) and 95% (for under drawls or over generation/injection) of UI rate (as specified under regulation-5 of CERC UI Regulations, 2009) at the periphery of regional entity, unless specified by the State Commission otherwise, vide regulation-20 of CERC (Open Access in inter State Transmission), Regulations, 2008 dated 25.01.08 as amended by Amendment Regulations, 2009 dated 25.05.09.

PART-II

ENERGY AND UI ACCOUNTING (W.E.F. 03.05.2010)

6.0 Regulation of electricity through the grid and treatment thereof :

(a) Para-15.0 (2) of main ABT order of UPERC is as below:

"(2) State & bilateral Inter -state Generating Stations:

(i) Any generation up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall not be construed as gaming, and the generator shall be entitled to UI charges for such excess generation above the scheduled generation (SG).

(ii) For any generation beyond the prescribed limits, the State Load Despatch Centre shall investigate so as to ensure that there is no gaming, and if gaming is found by the State Load Despatch Centre, the corresponding UI charges due to the generating station on account of such extra generation shall be reduced to zero and the amount shall be adjusted in UI account of beneficiaries in the ratio of their capacity share in the generating station.

(iii) On operation, actual generation of co-generation, solar, municipal waste, industrial wastes including solid, semi solid, liquid and gaseous wastes and bio-gas generating plant referred to as (NCES) shall be deemed as the actual schedule."

The regulations -24 (2) and 42(2) of the Utter Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2009 state as reproduced below

"24 (2) *(i) Any generation up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall not be construed as gaming, and the generator shall be entitled to UI charges for such excess generation above the scheduled generation (SG).*

(ii) For any generation beyond the prescribed limits, the State Load Despatch Centre shall investigate so as to ensure that there is no gaming, and if gaming is found by the State Load Despatch Centre, the corresponding UI charges due to the generating station on account of such extra generation shall be reduced to zero and the amount shall be adjusted in UI account of beneficiaries in the ratio of their capacity share in the generating station.

(iii)This provision shall be applicable with effect from the date specified by the Commission for implementation of ABT in the State."

"42 (2) (i) The hydro-electric generating stations are expected to respond to grid frequency changes and inflow fluctuations. They would, therefore, be free to deviate from the given schedule, as long as they do not indulge in gaming, and do not cause a grid constraint. As a result, the actual net energy supplied by a hydro-electric generating station over a day may differ from the Scheduled Energy (ex-bus) for that day. A compensation shall then be made by the concerned Load Despatch Centre in the

schedule for the (Day + 3), as described in clause (xix) of Regulation 45.

(ii) The concerned Load Despatch Centre shall periodically check that the generating station is declaring the capacity and energy sincerely, and is not manipulating the declaration with the intent of making undue money through UI.

(iii) This provision shall be applicable with effect from the date specified by the Commission for implementation of ABT in the State."

Chapter-3 of UPERC (Terms and Conditions for Supply of Power and Fixation of Tariff for sale of power from Captive Generating Plants, Co-generation, Renewable Sources of Energy and Other Non-Conventional Sources of Energy based Plants to a Distribution Licensee) Regulations, 2005, deals with generation from co-generation, renewable energy source of energy and other non-conventional energy sources supplying electricity to the distribution licensee where such plants are located. The regulation 22 (4) specified under Chapter-3 of the said Regulations states as reproduced below:

"On implementation of Availability Based Tariff in the State, the generating plants shall be subject to day ahead scheduling with the exception that on operation, actual generation shall be deemed as the actual schedule."

(b) CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 as amended on 28.04.2010 provides under regulation-5 (1), 5 (3), 5 (4), 5 (5), 5 (6) and 6.0 as below:

"5. Unscheduled inter change (UI) charges:

"(1) The charges for the Unscheduled Interchanges for all the time-blocks shall be payable for over drawl by the buyer or the beneficiary and under injection by the generating station or the seller and receivable for under drawl by the buyer or the beneficiary and over-injection by the generating station or the seller and shall be worked out on the average frequency of a time-block at the rates specified in the Schedule A of these regulations as per the methodology specified in clause(2) of this regulation.

Provided that the charges for the Unscheduled Interchange for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel, when actual generation is higher or lower than the scheduled generation, shall not exceed the Cap Rate as specified in the Schedule A of these regulations as per the methodology specified in clause (3) of this regulation,

Provided further that the Charges for the Unscheduled Interchange for the injection by a generating station other than the hydro generating station in excess of 105% of the Declared Capacity of the station in a time block or in excess of 101% of the average Declared Capacity over a day shall not exceed the charges for the Unscheduled Interchange corresponding to grid frequency interval of 'below 50.02 Hz and not below 50.0 Hz'.

Provided also that the charges for the Unscheduled Interchange for the under drawls by the buyer or the beneficiaries in a time block in excess of 10% of the schedule or 250 MW whichever is less, shall not exceed the Cap Rate as specified in the Schedule A of these regulations as per the methodology specified in clause (4) of this regulation.

Provided also that the charges for the Unscheduled Interchange for the injection by the seller in excess of 120% of the schedule subject to a limit of ex-bus generation corresponding to 105% of the Installed Capacity of the station in a time block or 101% of the Installed Capacity over a day shall not exceed the Cap Rate as specified in the Schedule A of these regulations as per the methodology specified in clause (5) of this regulation.

Provided also that the Charges for the Unscheduled Interchange for the injection by the seller in excess of ex-bus generation corresponding to 105% of the Installed Capacity of the station in a time block or 101% of the Installed Capacity over a day shall not exceed the charges for the Unscheduled Interchange corresponding to grid frequency interval of 'below 50.02 Hz and not below 50.0 Hz'.

(2).....

(3) The Cap rate for the charges for the Unscheduled Interchange for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be the same

as the charges for the Unscheduled Interchange corresponding to grid frequency interval of 'below 49.70 Hz and not below 49.68 Hz' as specified in Schedule "A" of these Regulations.

(4) The Cap Rate for the Unscheduled Interchange for the under drawls by the buyer or the beneficiaries in excess of 10% of the schedule or 250 MW whichever is less shall be the same as the charges for the Unscheduled Interchange corresponding to grid frequency interval of 'below 49.70 Hz and not below 49.68 Hz' as specified in Schedule "A" of these Regulations.

(5) The Cap Rate for the Unscheduled Interchange for the injection by the seller in excess of 120% of the schedule subject to a limit of ex-bus generation corresponding to 105% of the Installed Capacity of the station in a time block or 101% of the Installed Capacity over a day shall be the same as the charges for the Unscheduled Interchange corresponding to grid frequency interval of 'below 49.70 Hz and not below 49.68 Hz' as specified in Schedule "A" of these Regulations.

(6) The Charge for Unscheduled Interchange at grid frequency of '49.5 Hz and below', at grid frequency interval of 'below 50.02 Hz and not below 50.0 Hz' and at grid frequency interval of 'below 49.70 Hz and not below 49.68Hz' shall be re-notified every six months based on the relevant escalation indices notified by the Commission under the Competitive bidding guidelines of Government of India and Schedule "A" of these regulations shall be re notified accordingly."

"6. Declaration, scheduling and elimination of gaming

(1) The provisions of the Grid Code and the Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations 2008, as amended from time to time, shall be applicable for declaration of capacity, scheduling and elimination of gaming.

(2) The generating station, as far as possible, shall generate electricity as per the day-ahead generation schedule finalized by the Regional Load Despatch Centre in accordance with Grid Code.

Provided that the revision in generation schedule on the day of operation shall be permitted in accordance with the procedure specified under the Grid Code and Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2008, as the case may be.

(3) Omitted by amendment dated 28.04.2010.

(4) Omitted by amendment dated 28.04.2010.

(5) In response to changes in grid frequency and inflow fluctuations, the hydro generating stations shall be free to deviate from the given schedule, without causing grid constraint, and compensation for the difference between the actual net energy supplied and the scheduled energy (ex-bus) over a day shall be made by the concerned Regional Load Despatch Centre in the day-ahead schedule for the 4th day (day plus 3).]

(6)The Commission may, either suo motu or on a petition made by RLDC, initiate proceedings against any generating company or seller on charges of gaming and if required, may order an inquiry in such manner as decided by the Commission. When the charge of gaming is established in the above inquiry, the Commission may, without prejudice to any other action under the Act or regulations there under, disallow any Unscheduled Interchange charges received by such generating company or the seller during the period of such gaming"

(c) In light of above provisions made by UPERC and CERC, it is clarified that:

(i) In case of all thermal generating stations, any generation up to 105% of the declared capacity in any time block of 15 minutes and averaging up to 101% of the average declared capacity over a day shall entitle a generator to UI charges for such excess generation above the scheduled generation at the normal rate.

Provided that the charges for the Unscheduled Interchange for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel, when actual generation is higher or lower than the scheduled generation, shall not exceed the Cap Rate of 403 paisa per unit. This cap rate is applicable on generation stations whose tariff is determined by CERC and UPERC.

However generation in excess of 105% of DC or in excess of 101% of average DC over a day shall also entitle a generating station (in all

cases) to UI charge which shall not exceed UI rate corresponding to frequency 'below 50.02 Hz. and not below 50.0 Hz.'.

(ii) UI charge on the excess generation up to 105% of DC and 101% over a day has been allowed by UPERC in respect to State and bilateral interstate generating stations in ABT order dated 24/25 September, 2007. UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 in regulation-24 and 42 also specify such condition on generating stations covered by it. CERC has allowed sellers (who are generating stations other than those whose tariff is determined by CERC) in Amendment UI Regulations, 2010 to generate electricity up to 120% of the schedule subject to a limit of 105% of the installed capacity or 101% of the installed capacity over a day at normal UI rates. While UI rate for generation in excess of above limit is caped at 403 paisa per KWh which is further capped at 155 paisa per KWh for injection in excess of 105% of the installed capacity over a day or 101% of the installed capacity over a day. Since there is a difference in approach between UPERC and CERC in respect to volume of excess generation, the said UPERC order and Generation Tariff Regulation, 2009 may be considered as a limiting factor and provision of excess generation as specified in the said ABT order may be applied in respect to CERC provisions made under 4th and 5th provisos to regulation-5 (1) of the Amendment UI Regulations, 2010 dated 28.04.10.

(iii) Hydro generating stations shall be free to deviate from the given schedule, as long as they do not indulge in gaming, and do not cause a

grid constraint. As a result, the actual net energy supplied by a hydro-electric generating station over a day may differ from the Scheduled Energy (ex-bus) for that day. A compensation shall then be made by the concerned Load Despatch Centre in the schedule for the (Day + 3).

(iv) Where any co-generation, renewable energy source of energy and other non-conventional energy sources based plants supplies electricity only to the distribution licensee where such plant is located, then on implementation of Availability Based Tariff in the State, such generating plant shall be subject to day ahead scheduling with the exception that on operation, actual generation shall deemed as the actual schedule.

(v) In case any co-generation, renewable energy source of energy and other non-conventional energy sources based plants does not supplies electricity to the distribution licensee of it's area, then under ABT actual generation shall not be deemed as the actual schedule and normal provisions of a energy accounting and UI accounting shall apply. This will also hold good in case such generating plant supplies electricity to more than one person including the distribution licensee of the area where such plant is located.

(vi) CERC or UPERC Regulations and orders do not deal with an injecting entity which is not a generating station i.e. who is a distribution licensee. In case where a injecting entity supplies electricity to any customer (in the area of other distribution licensee or other State), treatment similar to generating station is envisaged in energy and UI accounting.

(d) Regulation-7 of CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 as amended by amendment dated 28.04.2010 deals with consequences of crossing the limits of injection or drawl with respect to specified frequency. The said regulation is reproduced below:

"7. Limits on UI volume and consequences of crossing limits

(1) The over-drawl of electricity by any beneficiary or a buyer during a time block shall not exceed 12% of its scheduled drawl or 150 MW, whichever is lower, when frequency is below 49.7 Hz and 3% on a daily aggregate basis for all the time blocks when the frequency is below 49.7 Hz.

***Explanation**: The limits specified in this clause shall apply to the sum total of over drawl by all the intra-State entities in the State including the distribution companies and other intra-State buyers, and shall be applicable at the inter-State boundary of the respective State.*

(2) The under-injection of electricity by a generating station or a seller during a time-block shall not exceed 12% of the scheduled injection of such generating station or seller when frequency is below 49.7 Hz and 3% on daily aggregate basis for all the time blocks when the frequency is below 49.7 Hz

(3) In addition to Unscheduled Interchange Charges corresponding to frequency of 49.5 Hz as stipulated under Regulation 5 of these regulations, Additional Unscheduled Interchange Charge shall be applicable for over-drawl or under injection of electricity for each

time block when grid frequency is below 49.5 Hz at the rates specified in the schedule A of these regulations in accordance with the methodology specified in clause (3a) of this regulation.

Provided further that Additional Unscheduled Interchange Charge for under-injection of electricity, during the time-block when grid frequency is below 49.5 Hz, by the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be at the rates specified in the schedule A of these regulations in accordance with the methodology specified in clause (3b) of this regulation.

Explanation: *Additional Unscheduled Interchange Charges shall not be applicable for net over drawls by a region as a whole from other regions when grid frequency is below 49.5 Hz.*

(3a) The additional Unscheduled Interchange charge for over-drawls and under injection of electricity for each time block when grid frequency is below 49.5 Hz shall be as specified by the Commission as a percentage of the charges for the Unscheduled Interchange in grid frequency 'below 49.5 Hz' with due consideration to the behavior of the buyer and beneficiaries and sellers and the generating stations towards grid discipline.

Provided that the Commission may specify different additional Unscheduled Interchange charges for over drawls and under injections and at different frequencies below 49.5 Hz.

(3b) The additional Unscheduled Interchange charge for under-injection of electricity during the time-block when grid frequency is below 49.5 Hz, by the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be as specified by the Commission as a percentage of the Cap Rate, with due consideration to the behavior of the generating stations towards grid discipline.

Provided that the Commission may specify different additional Unscheduled Interchange charges for under injections at different frequencies below 49.5 Hz.

(4) Payment of Unscheduled Interchange Charges under Regulation 5 and the Additional Unscheduled Interchange Charge under Regulation 7(3) above, shall be levied without prejudice to any action that may be considered appropriate under Section 142 of the Act for contravention of the limits of over-drawl or under generation as specified in these regulations, for each time block when frequency is below 49.7 Hz.

(5) The Commission may, if considered necessary, prescribe from time to time Additional Unscheduled Interchange Charge for over-drawl or under-injection of electricity during each time-block when grid frequency is below 49.7 Hz and up to 49.5 Hz.

(6) The charges for over-drawl / under-injection and under-drawl/ over injection of electricity shall be computed by the secretariat of

the respective Regional Power Committee in accordance with the methodology used for preparation of 'Regional Energy Accounts'.

(7) The Regional Load Despatch Centre shall prepare and publish on its website the records, on monthly basis, of the UI Accounts, specifying the quantum of over drawl/ under-generation and corresponding amount of UI charges paid for each beneficiary or buyer and received for each generating station or seller for the time blocks when grid frequency was below 49.5 Hz and between 49.7-49.5 Hz separately.]"

Clause-3 to Schedule-A of the Amendment UI Regulation, 2010 is as below:

"3. Additional Unscheduled Interchange Charges

(a) In terms of clause (3a) of Regulation 7 , the Additional Unscheduled Interchange Charge for over-drawl of electricity for each time-block when grid frequency is below 49.5 Hz and up to 49.2 Hz shall be equivalent to 40% of the Unscheduled Interchange Charge 873.0 Paisa/kWh corresponding to the grid frequency of below 49.5 Hz. The Additional Unscheduled Interchange Charge for under-injection of electricity for each time-block when grid frequency is below 49.5 Hz and up to 49.2 Hz shall be equivalent to 20% of the Unscheduled Interchange Charge of 873.0 Paisa/kWh corresponding to the grid frequency of below 49.5 Hz.

Provided that the Additional Unscheduled Interchange Charge for over-drawl of electricity for each time-block when grid frequency is below 49.2 Hz shall be equivalent to 100% of the Unscheduled Interchange Charge 873.0 Paisa/kWh corresponding to the grid frequency of below 49.5 Hz. The Additional Unscheduled Interchange Charge for under-injection of electricity for each time-block when grid frequency is below 49.2 Hz shall be equivalent to 40% of the Unscheduled Interchange Charge of 873.0 Paisa/kWh corresponding to the grid frequency of below 49.5 Hz.

(b) In terms of clause (3b) of Regulation 7, the Additional Unscheduled Interchange Charge for under-injection of electricity during the time-block when grid frequency is below 49.5 Hz and up to 49.2 Hz for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be equivalent to 20% of the UI Cap Rate of 403.0 Paisa/kWh.

Provided that the Additional Unscheduled Interchange Charge for under injection of electricity during the time-block when grid frequency is below 49.2 Hz for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be equivalent to 40% of the UI Cap Rate of 403.0 Paisa/kWh.]"

(e) The availability is defined and formula of its calculation is provided under Regulation 14 (vi) of UPERC (Terms and conditions of generation tariff) Regulations, 2009 which is as below:

"(vi) ***'Availability'*** *in relation to a thermal generating station for any period means the average of the daily average declared capacities (DCs) for all the days during that period expressed as a percentage of the installed capacity of the generating station minus normative auxiliary consumption in MW, and shall be computed in accordance with the following formula:*

$$\text{Availability (\%)} = 10000 \times \sum_{i=1}^{N} DC_i \Big/ \{ N \times IC \times (100 - AUX_n) \}\%$$

where,

IC = Installed Capacity of the generating station in MW,

DC_i *= Average declared capacity for the* i^{th} *day of the period in MW,*

N = Number of days during the period, and

AUX_n *= Normative Auxiliary Energy Consumption as a percentage of gross generation;"*

(f) UPERC has made UPERC (Terms and Conditions for Open Access) (First Amendment) Regulations, 2009 and in regulation 4.1, it has defined the

treatment to be given in energy accounting to a customer who has contract for supply of electricity from a distribution licensee in addition to supplies to be received through open access transactions. Regulation 4.1 is reproduced as below:

"*4.1 Open access transaction shall be carried out under the provisions of UPERC Order dated 24/25.9.2007 passed in matter of Availability Based Tariff and any other order passed from time to time, read with U.P. Electricity Grid Code, Indian Electricity Grid Code, UPERC (Terms and Conditions of Generation tariff) Regulations and any other relevant regulation/order/code, as the case may be, and as amended and applicable from time to time. SLDC shall make available above mentioned orders, codes, and regulations on its website.*

"Provided that customer, having premises in area of a distribution licensee, contracts for supply of electricity from such distribution licensee in addition to supplies from other source; energy accounting of electricity supplied from other source shall be carried out first and electricity supplied from such distribution licensee later. In case other source is more than one, the source that comes into open access transactions first, in chronological order of dates of approval of nodal agency , shall be booked for energy accounting first and thereafter subsequent sources shall be taken up until all are exhausted and supply from distribution licensee shall be at last."

In such case, energy accounting of a generating station *(including a captive plant in case of its user/member (s))* or an injecting entity shall be under taken in the manner specified under para-6.1.1 & 6.1.2 or 6.1.1 and 6.1.3, as the case may be.

In case open access customer does not have any contract with distribution licensee for supply of electricity, unscheduled inter change of electricity with the grid would then be at normal UI rates.

IMPORTANT NOTE: UPERC (Terms and Conditions for Open Access) (First Amendment) Regulation, 2009 has been notified on 30.04.2010. So far as applicability of Regulation 4.1 before the date of notification is concerned, the Commission has held that this remedy can be applied from 1st April, 2009 vide order dated 27.08.2010 passed in petition No.659/ 2010.

(g) The purchase of electricity by the person who establishes a captive plant is dealt under regulation 19 of the UPERC (Terms and Conditions for Supply of Power and Fixation of Tariff for sale of power from Captive Generating Plants, Co-generation, Renewable Sources of Energy and Other Non-Conventional Sources of Energy based Plants to a Distribution Licensee) Regulations. This regulation is reproducer as below:

"Any person, who establishes, maintains and operates a Captive Power Plant, may purchase electricity from a generating company or a distribution licensee in case his plant is not in a position to generate electricity to meet the requirement of his own use and consequently additional power is required:

Provided that such purchase of electricity, from a distribution licensee, shall be charged as per the tariff determined by the Commission under appropriate 'Rate Schedule of tariff under which the total load requirement of the plant shall belong to:

Provided also that in case of purchase of power though a trader or a generating company or a distribution licensee other than a distribution licensee of the area in which the plant is located, the rate shall be as mutually agreed however, surcharge and additional surcharge besides other charges shall be payable as determined by the Commission under open access regulations.

Provided further that the tariff payable by a captive plant to a distribution licensee, in case of banking of energy, shall be as per Regulation 39(B) if that plant has an arrangement of banking of energy with such distribution licensee."

6.1 Procedure for energy accounting

6.1.1 Scheduled Energy of a 'generating station or injecting entity' :

Summation of energy in MWh for all 96 time block in a day, as obtained from implemented schedule of a 'generating station or injecting entity', shall be the scheduled energy for the day in MWh.

Cumulative total of above scheduled energy, over the days in a month, shall be the scheduled energy for the month.

GENERATING STATION

6.1.2 Calculation of excess or under injection in case of a generating station :

Deviations from schedule shall be calculated as per para-6.1.2.2 and -

(1) Energy sent out of a 'generating station' in MWh of each time block as obtained from Joint Meter Reading (JMR) of ABT meter shall be compared with its MWh schedule (as indicated in the implemented schedule) and the difference between the two shall be recorded separately as –

(a) energy in excess of the schedule over the day,

(b) less injection of energy than the schedule over the day,

(c) less injection of energy when the frequency was below 49.7 Hz.

(d) less injection of energy when the frequency was below 49.5 Hz.

(e) less injection of energy when the frequency was below 49.2 Hz.

6.1.2.1 (A) Check for excess energy up to 105% for a generating station

(1) The excess energy in MWh (as calculated under 6.1.2 (1) (a) above) shall be checked if it was not more than 105% of the energy that could have been generated from MW declared in 'DC' in the corresponding time block.

In case it is more than 105% in any of the time block, it shall be reduced and contained at 105%.

(2) Energy in MWh of all time blocks (where excess injection noticed) shall be added.

(3) The average declared capacity in MW over a day shall be calculated which would be summation of MW of all time blocks divided by 96.

(4) The sum of MWh obtained under (2) shall be checked if it was not more than 101% of the energy that could be generated from average declared capacity in MW (calculated under (3)).

In case it is more than 101%, the excess energy shall be calculated and energy in MWh of each time blocks (where excess injection noticed) shall be reduced to bring down excess energy to 101% over a day. The above reduction shall be carried out by the principle of apportionment.

(5) The total excess generation above 105% of DC (as arrived at (1)) or 101% (as separated at (4)) over the day shall be recorded separately.

(6) Excess energy calculated under (4) shall qualify a 'generating station' to receive UI charge at applicable rate from the drawing entity.

Note: This provision shall apply to generating stations other than Hydro generating station.

(B) Generation in excess of 105% of DC or 101% over the day as recorded at 6.1.2.1 (A) (5) shall entitle a generator to receive UI at applicable rate which shall not exceed UI rate corresponding to frequency 'below 50.02 Hz. and not below 50.0 Hz'.

6.1.2.2 Deviation from Schedule by a generating station under para 6.1.2:

(1) Deviation from schedule under para 6.1.2 shall be calculated in consideration of the following –

(a) scheduled energy of the generating station from implemented schedule,

(b) the actual energy generation from JMR.

(2) The excess energy than the schedule (6.1.2.2(1) (b) minus 6.1.2.2(1) (a)) shall be recorded as positive unscheduled inter change to be paid by the drawing entity to the generating station concerned at UI rate as applicable.

(3) The less energy than the schedule (6.1.2.2(1) (b) minus 6.1.2.2(1) (a)) shall be recorded as negative unscheduled inter change to be paid by the generating station to drawing entity concerned at UI rate as applicable.

(4) The unscheduled inter change (UI) with respect to schedule shall be used for calculation of UI charges at frequency linked rates as might be specified by the CERC.

6.1.2.3 Under injection at frequency below 49.7 Hz by a generating station

6.1.2.3.1 Under injection below 49.7 Hz by a generating station:

(1) The under injection for all time blocks at frequency below 49.7 Hz as separated under 6.1.2 (c) shall be aggregated.

(2) The injection/generation for all time blocks when frequency is below 49.7 Hz shall be added and its 3% calculated.

(3) The under injection in MWh (as separated under (1) above) for all time blocks shall be checked if it was not less than 88% of the scheduled energy/injection.

In case it is less than 88% in any of the time block, the short fall shall be derived. All such short falls below 88% for all such time blocks shall be added which should not be more than 3% of the daily injection/generation calculated under (2) above.

(4) In case if under injection at (3) is more than 3%, the generating station shall pay an additional UI charge at the rate equivalent to 20% of the UI rate corresponding to frequency below 49.5 Hz for under injection of electricity for each time block when frequency is below 49.5 Hz in addition to UI rate corresponding to 49.5 Hz. In case under injection is below 49.2 Hz, UI rate shall be 40% of the UI rate corresponding to frequency below 49.5 Hz for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate corresponding to 49.5 Hz.

For under injection of electricity during the time block when grid frequency is below 49.5 Hz for the generating stations using coal or gas or lignite supplied in the APM as fuel, additional UI charge shall be equivalent to 20% of the applicable UI cap rate. In case of under injection is below 49.2 Hz, additional UI shall be 40% of the applicable UI cap rate for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI cap rate of 403 paisa per unit. Further the UI cap rate is applicable on the generating stations whose tariff is determined by CERC.

The above payment of additional UI shall be without prejudice to any action taken by the Commission against such 'generating station'.

(5) In case of under injection at (4) is not more than 3%, normal UI rates for under injection shall be payable

Note: (1) The injection of electricity without DC or SG shall mean no implemented schedule on the day of operation as such transaction might not at all be taken for the propose of energy accounting.

The excess energy so available but not included in the energy accounting will finally settle through lowering of the transmission losses in the grid.

(2) In case, the generating station draws electricity from the grid, the same should be considered as the electricity supplied by the distribution licensee of the area where such generating station is located. Such drawl might be charged at UI rate in absence of any contract for supply of power to such generating station by any person or distribution licensee of that area.

6.1.2.4 Energy accounting of infirm power (schedule during the day of operation for injection prior to date of commercial operation):

(a) Infirm power shall be scheduled by the generating station and communicated to SLDC two hours ahead of synchronization of generating station. The principle of scheduling at the point of injection and drawl shall be the same as for other cases.

(b) The methodology of energy accounting shall be similar to other cases with the exception that on operation, actual generation of infirm power shall be deemed as the actual schedule and therefore, there shall be no UI implication on such power.

Note: The UI cap rate are applicable in case of a generating station whose tariff is determined by CERC vide regulation (2) (f) of CERC (Unscheduled Interchange charges and related matters) Regulations,

2009 which came into force on 01.04.2009 and its amendment which came into effect from 03.05.2010

INJECTING ENTITY

6.1.3 Calculation of excess or under injection in case of a 'injecting entity':

Deviations from schedule shall be calculated as per para-6.1.3.1 and -

(1) Energy sent out of a 'injecting entity' in MWh of each time block as obtained from Joint Meter Reading (JMR) of ABT meter shall be compared with its MWh schedule (as indicated in the implemented schedule) and the difference between the two shall be recorded separately as –

(a) energy in excess of the schedule over the day,

(b) less injection of energy than the schedule over the day,

(c) less injection of energy below 49.7 Hz,

(d) less injection of energy below 49.5 Hz,

(e) less injection of energy below 49.2 Hz

6.1.3.1 Deviation from Schedule by an 'injecting entity' under para 6.1.3:

(1) Deviation from schedule shall be calculated in consideration of the following –

(a) scheduled energy of the 'injecting entity' from implemented schedule,

(b) the actual injection as per JMR.

(2) The excess energy than the schedule (6.1.3.1(1) (b) minus 6.1.3.1(1) (a)) shall be recorded as positive unscheduled inter change to be paid

by the drawing entity to the 'injecting entity' concerned at UI rate as applicable.

(3) The less energy than the schedule (6.1.3.1(1) (b) minus 6.1.3.1(1) (a)) shall be recorded as negative unscheduled inter change to be paid by the injecting entity to the drawing entity concerned at UI rate as applicable.

(4) The unscheduled inter change (UI) with respect to schedule shall be used for calculation of UI charges at frequency linked rates as might be specified by the CERC.

6.1.3.2 Under injection at frequency below 49.7 Hz by a 'injecting entity'

6.1.3.2.1 Under injection below 49.7 Hz by a 'injecting entity'

(1) The under injection for all time blocks at frequency below 49.7 Hz as separated under 6.1.3 (b) shall be aggregated.

(2) The injection for all time blocks when frequency is below 49.7 Hz shall be added and its 3% calculated.

(3) The under injection in MWh (as separated under (1) above) for all time blocks shall be checked if it was not less than 88% of the scheduled energy/injection.

In case it is less than 88% in any of the time block, the short fall shall be derived. All such short falls below 88% for all such time blocks shall be added which should not be more than 3% of the daily injection calculated under (2) above.

(4) In case if under injection at (3) is more than 3%, the injecting entity shall pay an additional UI charge at the rate equivalent to 20% of the

UI rate corresponding to frequency below 49.5 Hz for under injection of electricity for each time block when frequency is below 49.5 Hz in addition to UI rate corresponding to 49.5 Hz.

Further for injection below frequency 49.2 Hz, additional UI rate shall be 40% of the UI rate corresponding to frequency below 49.5 Hz for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate corresponding to 49.5 Hz.

The above payment shall be without prejudice to any action taken by the Commission against such 'injecting entity'.

(5) In case of under injection at (4) is not more than 3%, normal UI rates for under injection shall be payable.

6.1.3.3 (A) Check for excess injection by a injecting entity:

(1) The excess energy in MWh (as calculated under 6.1.3 (1) (a) above) shall be checked if it was not more than 105% of the energy that could have been injected at MW declared in 'DC' in the corresponding time block.

In case it is more than 105% in any of the time block, it shall be reduced and contained at 105%.

(2) Energy in MWh of all time blocks (where excess injection noticed) shall be added.

(3) The average declared capacity in MW over a day shall be calculated which would be summation of MW of all time blocks divided by 96.

(4) The sum of MWh obtained under (2) shall be checked if it was not more than 101% of the energy that could be injected from average declared capacity in MW (calculated under (3)).

In case it is more than 101%, the excess energy shall be calculated and energy in MWh of each time blocks (where excess injection noticed) shall be reduced to bring down excess energy to 101% over a day. The above reduction shall be carried out by the principle of apportionment.

(5) The total excess injection above 105% of DC (as arrived at(1)) or 101% (as separated at(4)) over the day shall be recorded separately.

(6) Excess energy calculated under (4) shall qualify an 'injecting entity' to receive UI charge at applicable rate from the drawing entity.

(B) Injection in excess of 105% of DC or 101% over the day as recorded at 6.1.3.3 (A) (5) shall entitle a injecting entity to receive UI at applicable rate not exceeding UI rate corresponding to frequency 'below 50.02 Hz. and not below 50.0 Hz'.

Note: The injecting entity (who is not a generating station) may be a distribution licensee supplying electricity to any other distribution licensee or an open access customer situated in the area of another distribution licensee. The control on injection of such an injecting entity has been conceived similar to that exercised in case of a generating station.

DRAWING ENTITY

6.1.4 Scheduled Energy of a 'drawing entity':

Summation of energy in MWh for all 96 time block in a day, as obtained from implemented schedule of a 'drawing entity' shall be the scheduled energy for the day in MWh.

Cumulative total of above scheduled energy, over the days in a month, shall be the scheduled energy for the month.

6.1.4.1Calculation of over or under drawl:

Deviation from schedule shall be calculated as per para-6.1.4.2 and -

(1)Energy drawl of a 'drawing entity' in MWh of each time block as obtained from Joint Meter Reading (JMR) of ABT meter shall be compared with its MWh schedule (as indicated in the implemented schedule) and the difference between the two shall be recorded separately as –

(a) energy drawl in excess of the schedule over the day,

(b) energy drawl in excess of the schedule when frequency is below 49.7 Hz,

(c) energy drawl in excess of the schedule when frequency is below 49.2 Hz

(d) energy drawl less than the schedule,

6.1.4.2 Deviation from Schedule by a 'drawing entity' under para 6.1.4.1:

(1) Deviation from schedule shall be calculated in consideration of the following –

(a) scheduled drawl energy of the 'drawing entity' from implemented schedule,

(b) the actual energy drawl as per JMR.

(2) The excess energy than the schedule (6.1.4.2(1)(b) minus 6.1.4.2(1)(a)) shall be recorded as positive unscheduled inter change to be paid by the drawing entity at UI rate as may be applicable.

(3) The less energy than the schedule (6.1.4.2(1) (b) minus 6.1.4.2(1) (a)) shall be recorded as negative unscheduled inter change to be received by the drawing entity concerned at UI rate as applicable.

(4) The unscheduled inter change (UI) with respect to schedule shall be used for calculation of UI charged at frequency linked rates as might be specified by the CERC.

6.1.4.3 Over drawl at frequency below 49.7 Hz by a 'drawing entity'

6.1.4.3.1 Over drawl below 49.7 Hz

(1) The over drawl for all time blocks at frequency below 49.7 Hz as separated under 6.1.4.1 (1) (b) shall be aggregated.

(2) The scheduled drawl for all time blocks at frequency below 49.7 Hz shall be added and its 3% calculated.

(3) The over drawl in MWh (as separated under (1) above) for all time blocks shall be checked if it was not more than 12% of the scheduled drawl or energy derived at 150 MW (whichever is lower).

In case it is more than 12% or 150 MW in any of the time block, the over drawl shall be derived. All such over drawl for all such time blocks shall be added which should not be more than 3% of the daily drawl calculated under (2) above.

(4) In case if over drawl at (3) is more than 3%, the drawing entity shall pay an additional UI charge at the rate equivalent to 40% of the UI rate

corresponding to frequency below 49.5 Hz for over drawl of electricity for each time block when frequency is below 49.5 Hz and upto 49.2 Hz in addition to UI rate corresponding to 49.5 Hz. Further in case of over drawl below 49.2 Hz, additional UI shall be 100% of UI rate corresponding to frequency below 49.5 Hz in addition to UI rate corresponding to 49.5 Hz.

(5) The above payment of additional UI shall be without prejudice to any action taken by the Commission against such 'drawing entity'.

(6) In case of over drawl at (4) is not more than 3%, normal UI rates for over drawl shall be payable.

Note: In case of drawing entity (as captive user connected or not connected with grid or consumer) not having contracted power from distribution licensee of its area besides electricity received through open access, the following provisions shall apply:

(a)Such drawing entity receiving electricity from captive generating plant or any other generating station shall ensure to draw power as per schedule during each 15-minute time block. The drawl more than schedule shall be considered as 'back up supply' ('back up charges' shall be constituted accordingly) to such drawing entity from distribution licensee of his area. Such over drawal shall be charged at frequency linked rate 25% higher than UI rate specified by CERC from time to time.

(b)Above charges shall be without prejudice to penalty which may be imposed by the Commission, for non compliance of the provision of the Act, Regulation or Code or Order made there under, on recommendation of SLDC.

(c) The billing of the backup charges, under sub-para (a) above, shall be carried out with the billing of UI charges and paid within ten days.

6.1.4.4 Under drawl by 'drawing entity':

(1) The under drawl for each time block under 6.1.4.1(1)(d) shall be checked if it was not in excess of 10% of the schedule.

(2) The excess under drawl, for all time blocks in which under drawl is in excess of 10% is noticed shall be recorded separately.

(3) Calculate energy corresponding to 250 MW.

(4) Derive difference of (2) and (3) above.

(5) Negative difference at (4) would mean that under drawl in excess of 10% of the scheduled drawl is less than 250 MW and hence the drawing entity shall receive UI charges for such excess under drawl at (2) at applicable UI rate not exceeding cap of 403 paisa per KWh.

(6) Zero difference at (4) would mean that under drawl in excess of 10% of the scheduled drawl is equal to 250 MW and the drawing entity shall be entitled to receive UI charges for such excess under drawl at (2) at applicable UI rate not exceeding cap of 403 paisa per KWh.

(7) Positive difference at (4) would mean that under drawl in excess of 10% of the scheduled drawl is also more than 250 MW and the drawing entity shall be entitled to receive UI charges for energy (which is corresponding to 250 MW) at (3) at applicable UI rate not exceeding cap of 403 paisa per KWh.

(8) For under drawl up to 10% of the schedule, the drawing entity shall receive UI charges at applicable rate without cap.

DRAWING ENTITY HAVING CONTRACTED POWER FROM DISTRIBUTION LICENSEE OF ITS AREA BESIDES ELECTRICITY RECEIVED THROUGH OPEN ACCESS

6.1.5 A drawing entity may have agreement to receive electricity from more than one source through open access as well as a contract with the distribution company of its area to receive electricity at the drawl point as backup supply.

6.1.5.1 In such case, energy accounting of a generating station *(including a captive plant in case of its user/member (s))* or an injecting entity shall be under taken in the manner specified under para-6.1.1 & 6.1.2 or 6.1.1 & 6.1.3, as the case may be.

6.1.5.2 The energy accounting at drawl end of such drawing entity *(including user/member (s) of a captive plant)* shall be done in the following manner:

(a) The actual generation or injection in MW and MWh shall be recorded at the injection point for each time block.

(b) Net drawl at the drawl point shall be calculated after deduction of transmission losses from MW and MWh recorded at (a). This shall be treated as the electricity received by the drawing entity at the drawl point through open access from specified generating station or injecting entity.

(c) Record *(from MRI of ABT meter installed at the drawl point of the drawing entity)* total MW and MWh drawn at the drawl point by drawing entity for each time block.

(d) The difference of (c) – (b) in terms of MW and MWh shall be recorded. Such difference may be –

(i) Positive, which means that the distribution licensee has supplied electricity to such drawing entity in addition to electricity received through open access.

(ii) Zero, which means that the distribution licensee has not supplied electricity to such drawing entity in addition to electricity received through open access.

(iii) Negative, which means that the drawing entity has not consumed full electricity received by it through open access but supplied such amount of electricity to distribution licensee.

6.1.5.3 The MWh recorded as positive difference shall be billed by the distribution licensee at applicable retail tariff.

6.1.5.4 The maximum MW recorded at (d) (i) during a month shall be the maximum demand posed by the drawing entity on the system of the distribution licensee which shall be charged according to the provisions of retail tariff.

6.1.5.5 The negative difference under (d) (iii) shall be adjusted with the energy supplied by the distribution licensee at 6.1.5.3

6.1.5.6 SLDC in such case shall issue energy account only. The billing of electricity supplied or adjustment in energy (if any) by distribution licensee shall be under taken by distribution licensee.

IMPORTANT NOTE: This provision shall be applicable from 1st April, 2009 as directed by the Commission in order dated 27.08.10 and order dated 12.09.2011 passed in Petition No.659/2010.

Note: After all weekly energy accounts for the relevant month had been issued by the SLDC, distribution licensee shall prepare, on the basis of such energy accounts, bill for energy, demand charge and the protective load charge (wherever applicable) on the drawing entity in accordance with the terms and conditions and rates specified by the Commission from time to time in the retail tariff order.

AVAILABILITY OF CAPACITY

6.1.6 Calculation of availability:

Calculation of availability shall be done in respect to the generating stations and injecting entities.

6.1.6.1 The availability shall be calculated on the basis of average capability declared in MW by the 'generating station or injecting entity'.

6.1.6.2 The formula for calculation of availability shall be as specified in UPERC (Terms and conditions of Generation tariff) Regulations, 2009.

The installed capacity (IC) *(unless revised by the Commission by an order or otherwise on account of de-ration, exclusion of capacity due to ongoing R & M, up-rating after R & M and addition of new unit)* and auxiliary consumption (AUX) (*unless revised as per Regulations on account of re-commissioning after R & M*) of the plant shall be as specified for a generating station in the said Regulations or a Power Purchase Agreement, as may be relevant to any 'generating station or injecting entity' not covered by the said Regulations.

However in relation to an injecting entity, installed capacity shall mean the capacity which has been agreed to be supplied in an

agreement or the maximum MW allowed in grant of open access by SLDC or STU, as the case may be.

6.1.6.3 The availability shall be calculated up to second place of the decimal.

Reports generation for UI calculation

6.1**.7** The process of energy accounting must generate following reports for UI Calculation:

(i) Scheduled generation (in MW and MWh) of each generating station in respect to each of its drawing entity as implemented.

(ii) Scheduled injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as implemented.

(iii) Scheduled generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each:

(a) Bilateral transaction.

(b) Collective transaction.

(iv) Net drawl schedule (in MW and MWh) of each drawing entity in respect to each of the following:

(a) State sector generating stations.

(b) Central sector generating stations.

(c) Bilateral transaction to buy power.

(d) Collective transaction to buy power.

(e) Any injecting entity within the state.

(v) Actual generation (in MW and MWh) of each generating station in respect to each of its drawing entity as obtained from ABT meters.

(vi) Actual injection (in MW and MWh) of each injecting entity in respect to each of its drawing entity as obtained from ABT meters.

(vii) Actual generation (in MW and MWh) of each intra-state entity supplying power out side the state in respect to each as obtained from ABT meters:

(a) Bilateral transaction.

(b) Collective transaction.

(viii) Actual drawl (in MW and MWh) of each drawing entity in respect to each of the following as obtained from ABT meters:

(a) State sector generating stations.

(b) Central sector generating stations.

(c) Bilateral transaction to buy power.

(d) Collective transaction to buy power.

(e) Any injecting entity within the state.

(ix) Scheduled generation (in MW and MWh) of each captive plant in respect to each of its users as implemented.

(x) Net drawl schedule (in MW and MWh) of each user of the captive plant.

(xi) Actual generation (in MW and MWh) of each captive plant in respect to each of its user as obtained from ABT meters.

(xii) Actual drawl schedule (in MW and MWh) of each user of the captive plant.

(xiii) Any power contracted by a drawing entity with distribution licensee of its area.

(xiv) No unscheduled interchange due to energy accounting of infirm power (scheduled during the day of operation for injection prior to date of commercial operation).

6.2 Procedure for Unscheduled Interchange (UI) accounting

(a) UPERC, in ABT order dated 24/25 September, 2007, has directed that UI rates shall be as revised from time to time by CERC. As per regulation-24 and 42 of the UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009, the charges for all UI transactions shall be based on average frequency of the time block as notified by CERC from time to time. In view of the aforesaid provisions, the following regulations made by CERC in respect to unscheduled interchange charges shall apply for the purpose of ABT in the State:

(i) CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 as amended vide Amendment dated 28.04.10 made effective from 03.05.10.

(b) As per UI Regulations of CERC, cap on normal UI rate is applicable on the generating stations whose tariff is determined by CERC under Section-62 of the Act vide regulation (2) (f) read with regulation-5.

(c) The broad principles of Unscheduled Interchange accounting shall be as below:

(i) The less drawl by a generating station or injecting entity directly affects the drawing entity for which the electricity was schedule for supply. As such for less drawls, a generating station or injecting entity shall be paying UI charges to the concerned drawing entity (s).

(ii) The excess generation or injection would mean electricity injected into the grid after meeting the scheduled dispatches. Since all scheduled requirements have been met, therefore excess generation or injection over and above the schedule shall be allocated among all those who have drawn electricity more than scheduled drawls. Such allocations among drawing entities would be made in consideration of their total drawl schedules by the principle of apportionment.

(iii) Excess generation or injection by one or more than one generating station or injecting entity in any time block would correspond to one frequency and linked UI rate. Since the UI linked rate of electricity is uniform in respect to each for any time block, generating stations or injecting entities shall be picked up in alphabetic order and excess electricity booked on drawing entities. Drawing entities shall be paying UI to generating stations or injecting entities from where they have received excess electricity.

(iv) After the excess generation is booked on drawing entities, any excess drawl still left with any drawing entity shall mean that he has drawn electricity from one who has drawn less.

(v) The less drawl by drawing entities shall be compensated by the entities that are still left with excess drawl under (iv) above and such less drawing entities shall receive UI charges from excess drawing entities. Since frequency linked UI rates are uniform for all drawing entities, therefore less drawl shall also be compensated by the principle of apportionment.

UI due to less generation by a generating station

6.2.1 The generating station shall pay UI for less generation under the following conditions :

(i) at normal UI rates when frequency varies from below 50.2 Hz to 49.5 Hz and below;

(ii) additional UI of 20% of UI rate corresponding to 49.5 Hz when frequency is below 49.5 Hz and up to 49.2 Hz (subject to certain conditions specified under regulation – 7 of CERC UI Regulations, 2009 as amended on 28.04.2010) in addition to UI charge corresponding to frequency 49.5 Hz.

(iii) Additional UI of 40% of UI rate corresponding to frequency 49.5 Hz when frequency is below 49.2 Hz (subject to certain conditions specified under regulation – 7 of CERC UI Regulations, 2009 as amended on 28.04.2010) in addition to UI charge corresponding to frequency 49.5 Hz.

6.2.1.1 Less energy injection than the schedule by a generating station (calculated under para – 6.1.2 (1) (b)) shall be apportioned in the ratio of 'schedule of generation' in respect to its drawing entities. UI charges at applicable rate (i.e. normal rates) shall be calculated and the generating station shall pay UI charges to the concerned drawing entities.

Provided that the UI rate for generating stations using coal or lignite or gas supplied under Administrative Price Mechanism (APM) shall be capped at 403 paisa per KWh as per CERC UI Regulations, 2009 as

amended on 28.04.2010. The UI cap is applicable on generating stations whose tariff is determined by UPERC.

6.2.1.2 As specified under regulation–7 of CERC UI Regulations, 2009 as amended on 28.04.2010, UI charges payable by a generating station for under injection below 49.7 Hz by a generating station and calculated under para 6.1.2.3.1 shall be additional by 20% for under injection below 49.5 HZ. Further if under injection is below 49.2 Hz, additional UI rate shall be 40% of the UI rate corresponding to frequency 49.5 Hz in addition to UI rate corresponding to frequency 49.5 Hz. The additional UI shall be shown separately in addition to UI charges calculated under 6.2.1.1.

Provided that the additional UI rate for generating stations using coal or lignite or gas supplied under Administrative Price Mechanism (APM) shall be 20% of the capped rate of 403 paisa per KWh as per CERC UI Regulations, 2009 as amended on 28.04.2010. Further if under injection is below 49.2 Hz, additional UI rate shall be 40% of the UI cap rate of 403 paisa per KWh. The UI cap is applicable on generating stations whose tariff is determined by UPERC.

6.2.1.3 The additional UI paid shall be retained in the UI pool account.

UI due to excess generation by a generating station

(1) Excess generation up to 105% of DC or 101% over the day

6.2.2 Excess generation calculated under 6.1.2.1 for all generating stations (arranged in alphabetic order) shall be listed.

6.2.2.1 All drawing entities who have over drawn shall be listed with their total scheduled energy at drawl end and quantum of energy over drawn by them from para 6.1.4.1.

6.2.2.2 The excess energy injection of a generating station first in alphabetic order shall be apportioned among drawing entities in the ratio of their scheduled energy at drawl end.

6.2.2.3 If any drawing entity does not receive the excess power either due to less drawl or drawl as per schedule, then such balance of power shall be apportioned among the remaining drawing entities.

6.2.2.4 The process under 6.2.2.3 shall be repeated unless excess energy of that particular generating station is exhausted.

6.2.2.5 UI charges at applicable rate shall be calculated at applicable normal rate and the generating station shall receive UI charges from the concerned drawing entity.

Provided that the UI rate for generating stations using coal or lignite or gas supplied under Administrative Price Mechanism (APM) shall be capped at 403 paisa per KWh as per CERC UI Regulations, 2009 as amended on 28.04.2010. The UI cap is applicable on generating stations whose tariff is determined by UPERC.

6.2.2.6 The process under para–6.2.2.2 to 6.2.2.5 shall be repeated for the generating station next in alphabetic order.

6.2.2.7 The process under para – 6.2.2.2 to 6.2.2.6 shall continue until all generating stations in the alphabetic order have exhausted their excess energy.

6.2.2.8 The drawing entities still left with excess drawl shall be listed separately and attributed to have over drawn from the excess generation made by the generating stations above 105%.

(2) Excess generation above 105%

6.2.3 The drawing entity still left with excess drawl under para 6.2.2.8 shall receive energy from the excess generation made by the generating stations above 105%

6.2.3.1Excess generation above 105% is calculated under para – 6.1.2.1 shall be allocated to drawing entities in the same manner as described under para – 6.2.2 above and UI charges shall be payable by the drawing entities which shall not exceed UI rate corresponding to "below 50.02 and not below 50.0 Hz".

Provided that the UI rate for generating stations supplied fuel under Approved Price Mechanism (APM) and whose tariff is determined by CERC shall not exceed UI rate corresponding to "below 50.02 and not below 50.0 Hz".

6.2.3.2 The drawing entity still left with excess drawl shall be listed separately and attributed to have over drawn from the excess injection by injecting entities.

UI due to under or less injection by an injecting entity :

6.2.4 An injecting entity, which is not a generating station, is obliged to supply electricity in MWh corresponding to MW schedule and duration of time. Any under injection due to any reason, shall entitle a drawing entity to UI charges at applicable rate specified by CERC from time to time.

6.2.4.1The injecting entity shall pay UI for less generation under the following conditions :

(i) at normal UI rates when frequency varies from below 50.2 Hz to 49.5 Hz and below;

(ii) additional UI of 20% of UI rate corresponding to frequency 49.5 Hz when frequency is below 49.5 Hz and up to 49.2 Hz (subject to certain conditions specified under regulation–7 of CERC UI Regulations, 2009 as amended on 28.04.10) in addition to UI charge corresponding to 49.5 Hz.

(iii) Additional UI of 40% of UI rate corresponding to frequency 49.5 Hz when frequency is below 49.2 Hz (subject to certain conditions specified under regulation – 7 of CERC UI Regulations, 2009 as amended on 28.04.2010) in addition to UI charge corresponding to frequency 49.5 Hz.

6.2.4.2 Less energy injection than the schedule by a injecting entity (calculated under para – 6.1.3 (1)) shall be apportioned in the ratio of 'schedule of injection' in respect to its drawing entities. UI charges at applicable rate shall be calculated at applicable rate and the injecting entity shall pay UI charges to the concerned drawing entities.

6.2.4.3 As specified under regulation – 7 of CERC UI Regulations, 2009 as amended on 28.04.2010, UI charges payable by an injecting entity for under injection below 49.7 Hz (under specified conditions) and as calculated under para 6.1.3.2.1 shall be additional by 20% of UI rate corresponding to 49.5 Hz for under injection below 49.5 HZ in addition to UI

rate corresponding to 49.5 Hz. Further if under injection is below 49.2 Hz, additional UI rate shall be 40% of the UI rate corresponding to frequency 49.5 Hz in addition to UI rate corresponding to frequency 49.5 Hz. The additional UI shall be shown separately in addition to UI charges calculated under 6.2.1.1.

UI due to excess injection by an injecting entity :

6.2.5 Excess injection calculated under 6.1.3.1 (2) from all injecting entity shall be listed in alphabetic order.

6.2.5.1 All drawing entities listed to have left with excess drawl under para 6.2.3.2 shall receive power from such excess injection.

6.2.5.2 The excess energy injection of an injecting entity first in alphabetic order shall be apportioned among drawing entities in the ratio of their scheduled energy at drawl end.

6.2.5.3 If any drawing entity does not receive the excess power either due to less drawl or drawl as per schedule, then such balance of power shall be apportioned among the remaining drawing entities.

6.2.5.4 The process under 6.2.5.3 shall be repeated unless excess energy of that particular injecting entity is exhausted.

6.2.5.5 UI charges at applicable rate shall be calculated at applicable rate and the injecting entity shall receive UI charges from the concerned drawing entity.

6.2.5.6 The process under para – 6.2.5.2 to 6.2.5.5 shall be repeated for the injecting entity next in alphabetic order.

6.2.5.7 The process under para – 6.2.5.2 to 6.2.5.6 shall continue until all injecting entity in the alphabetic order to have exhausted their excess energy.

6.2.5.8 The drawing entity still left with excess drawl shall be listed separately and attributed to have over drawn from the share of entities that have drawn less.

Under drawl by a drawing entity

6.2.6 The drawing entity shall receive UI for under drawl under the following conditions:

(i) at normal UI rate if under drawl does not exceed 10% of the schedule or 250 MW, whichever is less.

(ii) at UI rate which shall not exceed UI cap rate of 403 paisa per KWh for under drawls exceeding 10% of the schedule or 250 MW, whichever is less.

6.2.7 Under drawl by drawing entities as calculated under para 6.1.4.1 shall be listed with their total scheduled energy at drawl end and quantum of energy drawn less by them.

6.2.7.1 The less energy injection apportioned to drawing entities under para 6.2.1.1 (due to less generation by generating stations) and para 6.2.4.2 (due to less injection by injecting entities) shall be added to quantum of energy drawn less by them to know the amount of less drawl still left and which has not been compensated by unscheduled inter change charges as yet by the entities who are left with excess drawn under para 6.2.5.8.

6.2.7.2 The over drawl of drawing entity left still with highest over drawl under para 6.2.5.8 shall be apportioned among the entities drawing less in the ratio of their scheduled drawl and added to less drawl still left under para 6.2.6.1 to know the amount of less drawl still left and which has not been compensated

by unscheduled inter change charges as yet by the entities who are left with excess drawn under para 6.2.5.8. The less drawing entities shall receive UI charges from such excess drawing entities on the quantum of energy apportioned to them.

6.2.7.3 The over drawl of drawing entity of next in highest over drawl order under para 6.2.5.8 shall be apportioned among the entities drawing less in the ratio of their scheduled drawl and added to less drawl still left under para 6.2.6.2 to know the amount of less drawl still left and which has not been compensated by unscheduled inter change charges as yet by the entities who are left with excess drawn under para 6.2.5.8.

6.2.7.4 The process of para 6.2.6.3 shall be repeated to exhaust the over drawl of drawing entity of next to next in highest over drawl order under para 6.2.5.8 until all over drawls have been exhausted to compensate less drawls.

UI ACCOUNTING OF DRAWING ENTITY HAVING CONTRACTED POWER FROM DISTRIBUTION LICENSEE OF ITS AREA BESIDES ELECTRICITY RECEIVED THROUGH OPEN ACCESS

6.2.8 At the point of injection:

In such case, UI accounting of a generating station *(including a captive plant in case of its user/member (s))* or an injecting entity shall be under taken in the manner specified under para – 6.2.1, 6.2.2 and 6.2.3 in case of a generating station and para – 6.2.4 and 6.2.5 in case of an injecting entity.

6.2.9 At the point of drawl:

Accounting at all points shall be made in accordance with para – 6.1.5.

UI Rates (with effect from 3.5.2010)

6.3. UPERC in ABT order dated 24/25 September, 2007, has directed that UI rates shall be as revised from time to time by CERC. As per regulation-24 and 42 of the UPERC (Terms and Conditions of Generation Tariff) Regulations, 2009, the charges for all UI transactions shall be based on average frequency of the time block as notified by CERC from time to time.

Therefore the following regulations shall apply for the purpose of ABT in the State with effect from 03.05.10:

(i) CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 as amended vide Amendment dated 28.04.10

6.3.1 (a) UI rates (normal UI rates) are specified under regulation-5 (1) to the said Regulations.

(b) A cap on normal UI rate is specified under first proviso to this regulation which will be applicable on generating stations using coal or lignite or gas supplied under APM. Regulation-2 (f) defines 'generating station' as a generating station whose tariff is determined by the Commission under Section-62 of the Act. Therefore the cap rate imposed on normal UI rates under 1st proviso to regulation-5(1) is applicable on generating stations whose tariff is determined by CERC.'

(c) UPERC order dated 12.09.2011 passed in petition No. 659/2010 states that the UI cap rate specified by CERC for generating stations shall also apply in case of generating stations whose tariff is determined by UPERC. Therefore ;

(i) Frequency linked UI rates as specified under regulation-5 (1) shall apply in all cases covered under intra-state ABT.

(ii) UI rates as specified under regulation-5 (1) shall also apply on -

(1) 'intra-state entities' (as defined under regulation-2 (h) of CERC Open Access Regulations, 2008) engaged in interstate transactions; and

(2) seller and buyer (as defined under CERC UI Regulations, 2009 as amended by Amendment dated 28.04.2010) who are engaged in interstate transactions.

Note: UI charges for all transactions for intra-state entities scheduled by RLDC (for bilateral transactions) or NLDC (for collective transactions), whose energy accounting or UI accounting is to be done by SLDC, shall be 105% (for over drawls or under generation/injection) and 95% (for under drawls or over generation/injection) of UI rate (as specified under regulation-5 (1) of CERC UI Regulations, 2009 as amended by Amendment dated 28.04.10) at the periphery of regional entity, unless specified by the State Commission otherwise, vide regulation-20 of CERC (Open Access in inter State Transmission), Regulations, 2008 dated 25.01.08 as amended by Amendment Regulations, 2009 dated 25.05.09.

(iii) Cap rate of 403 paisa per unit (as specified under first proviso to regulation-5(1)) shall apply in case of generating station using coal or lignite or gas supplied under APN as the fuel and whose tariff is determined by CERC (such as Tanda TPS) and UPERC.

6.3.2 Excess generation or injection up to 105% of the declared capacity of the station or injecting entity in a time block shall be paid by the drawing entity at normal UI rate specified under regulation-5 (1) in cases covered under intra-state ABT, intra-state entities and sellers.

Provided UI charges in case of generation or injection is in excess of 105% of the declared capacity of the generating station or injecting entity or in excess of 101% the average declared capacity over the day shall not exceed cap rate of 155 paisa per KWh.

6.3.3 In case of generating stations whose tariff is determined by CERC, UI charges as specified under regulation-5(1) shall not exceed cap rate of 403 paisa per KWh.

Provided UI charges in case of generation is in excess of 105% of the declared capacity of the generating station or in excess of 101% the average declared capacity over the day shall not exceed cap rate of 155 paisa per KWh (UI charge corresponding to 'below 50.02 Hz and not below 50.0 Hz).

6.3.4 Under drawl by a drawing entity in a time block in excess of 10% of its schedule or 250 MW which ever is less, shall not exceed the cap rate of 403 paisa per KWh.

6.3.5 The over-drawl of electricity by a drawing entity during a time block shall not exceed 12% of its scheduled drawl or 150 MW, whichever is lower, when frequency is below 49.7 Hz and 3% on a daily aggregate basis for all the time blocks when the frequency is below 49.7 Hz.

In case over drawl exceeds above limit, drawing entity shall pay an additional UI charge at the rate equivalent to 40% of 873 paisa per KWh *(the UI rate corresponding to frequency below 49.5 Hz)* for over drawl of electricity for each time block when frequency is below 49.5 Hz in addition to UI rate of 873 paisa per KWh. Further in case of over drawl is below 49.2 Hz, additional UI shall be 100% of 873 paisa per KWh *(UI rate corresponding to frequency below 49.5 Hz)* in addition to UI rate of 873 paisa per KWh.

In case over drawl does not exceed above limit, normal UI rates shall be payable.

6.3.6 The under-injection of electricity by a generating station or injecting entity during a time-block shall not exceed 12% of the scheduled injection of such generating station or injecting entity when frequency is below 49.7 Hz and 3% on daily aggregate basis for all the time blocks when the frequency is below 49.7 Hz.

In case under-injection exceeds above limit, the generating station or injecting entity shall pay an additional UI charge at the rate equivalent to 20% of 873 paisa per KWh *(the UI rate corresponding to frequency below 49.5 Hz)* for under injection of electricity for each time block when frequency is below 49.5 Hz in addition to UI rate of 873 paisa per KWh. In case under injection is below 49.2 Hz, UI rate shall be 40% of 873 paisa per KWh *(the UI rate corresponding to frequency below 49.5 Hz)* for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate of 873 paisa per KWh.

In case under injection does not exceed above limit, normal UI rates shall be payable.

6.3.7 Also in case of generating stations whose tariff is determined by CERC, under-injection of electricity by a generating station during a time-block shall not exceed 12% of the scheduled injection of such generating station when frequency is below 49.7 Hz and 3% on daily aggregate basis for all the time blocks when the frequency is below 49.7 Hz.

In case under-injection exceeds above limit, the generating station shall pay an additional UI charge at the rate equivalent to 20% of 403 paisa per KWh *(the applicable UI cap rate)* for under injection of electricity for each time block when frequency is below 49.5 Hz in addition to UI cap rate of 403 paisa per KWh. In case under injection is below 49.2 Hz, UI rate shall be 40% of 403 paisa per KWh *(the applicable UI cap rate)* for under injection of electricity for each time block when frequency is below 49.2 Hz in addition to UI rate of 403 paisa per KWh.

UI cap rate shall be applicable in case of generating station using coal or lignite or gas supplied under APM as the fuel and whose tariff is determined by UPERC.

In case under injection does not exceed above limit, normal UI rates shall be payable.

6.4 Explanation : CERC has allowed sellers (who are generating stations other than those whose tariff is determined by CERC) in Amendment UI Regulations, 2010 to generate electricity up to 120% of the schedule subject to a limit of 105% of the installed capacity or 101% of the installed capacity over a day at

normal UI rates. UI charge on the excess generation up to 105% of DC and 101% over a day has been allowed by UPERC in respect to State and bilateral interstate generating stations in ABT order dated 24/25 September, 2007. UPERC (Terms & Conditions of Generation Tariff) Regulations, 2009 in regulation-24 and 42 also specify such condition on generating stations covered by it. As such limits on excess generation shall be as provided under the said UPERC order and Generation Tariff Regulation, 2009 and the same shall be applied in respect to CERC provisions made under 4th and 5th provisos to regulation-5 of the Amendment UI Regulations, 2010 dated 28.04.10.

SETTLEMENT SYSTEM

7.0 The schedule of payment of unscheduled interchange charges, payment security and application of fund collected through UI shall be similar to that specified by CERC under regulation- 9,10 and 11 of CERC (Unscheduled Interchange Charges and related matters) Regulations, 2009 as amended vide Amendment dated 28.04.10.

7.1 The procedure for payment of unscheduled interchange charges, payment security and application of fund collected through UI shall be as below:-

7.1.1 Unscheduled Interchange Charges Accounting

(1) A statement of Unscheduled Interchange charges including Additional Unscheduled Interchange charges levied shall be prepared by SLDC on weekly basis and shall be issued to all concerned by Tuesday, for seven day period ending on the penultimate Sunday mid-night.

(2) All payments on account of Unscheduled Interchange charges including Additional Unscheduled Interchange charges levied and interest, if any, received for late payment shall be credited to the funds called the "State Unscheduled Interchange Pool Account Fund", which shall be maintained and operated by SLDC.

Provided that the Commission may by order direct any other entity to operate and maintain "State Unscheduled Interchange Pool Account Fund":

Provided further that separate books of accounts shall be maintained for the principal component and interest component of Unscheduled Interchange charges and Additional Unscheduled Interchange charges by SLDC.

(3) All payments received in the "State Unscheduled Interchange Pool Account Fund" shall be appropriated in the following sequence:

(a) First towards any cost or expense or other charges incurred on recovery of UI charges

(b) Next towards over dues or penal interest, if applicable

(c) Next towards normal interest

(d) Lastly, towards UI and additional UI charges.

Explanation: Any additional UI charge collected from any entity shall be retained in the "State Unscheduled Interchange Pool Account Fund".

7.1.2 Schedule of Payment of Unscheduled Interchange Charges and Payment Security

(1) The payment of UI charges shall have a high priority and the concerned entity shall pay the indicated amounts within 10 (ten) days of the issue of statement of Unscheduled Interchange charges including Additional Unscheduled Interchange charges by SLDC into the "State Unscheduled Interchange Pool Account Fund".

(2) If payments against the Unscheduled Interchange charges including Additional Unscheduled Interchange charges are delayed by more than two days, i.e., beyond twelve (12) days from the date of issue of the statement by SLDC, the defaulting entity shall have to pay simple interest @ 0.04% for each day of delay.

(3) All payments to the entities entitled to receive any amount on account of UI charges shall be made within 2 working days of receipt of the payments in the "State Unscheduled Interchange Pool Account Fund".

Provided that in case of delay in the UI Payment into the State UI Pool Account Fund and interest there on, if any, beyond 12 days from the date of issue of the Statement of UI charges then the entities who have to receive UI payment or interest thereon shall be paid from the balance available if any, in the State UI Pool Account Fund. In case the balance available is not sufficient to meet the payment to the concern who are to receive it, then the payment from the State UI Pool Accounts Fund shall be made on pro rata basis from the balance available in the Fund.

Provided further that the liability to pay interest for the delay in payments to the "State UI Pool Account Fund" shall remain till interest is not paid; irrespective of the fact that the entities who have to receive payments have been paid from the "State UI pool account Fund" in part or full.

(4) All entities which had at any time during the previous financial year failed to make payment of Unscheduled Interchange charges including Additional Unscheduled Interchange charges within the time specified shall be required to open a Letter of Credit (LC) equal to 110% of its average payable weekly UI liability in the previous financial year, in favour of the SLDC within a fortnight.

Provided that if any entity fails to make payment of Unscheduled Interchange Charges including Additional Unscheduled Interchange Charges by the time, as specified, during the current financial year, it shall be required to open a Letter of Credit equal to 110% of weekly outstanding liability in favour of SLDC within a fortnight from the due date of payment.

Provided further that LC amount shall be increased to 110% of the payable weekly UI liability in any week during the year, if it exceeds the previous LC amount by more than 50%.

Illustration: If the average payable weekly UI liability of any entity during 2009-10 is Rs. 20 crore, the entity shall open LC for 22 crore in 2010-11. If the weekly payable liability during any week in 2010-11 is Rs. 35 crore which is more than 50% of the previous financial

year's average payable weekly liability, the concerned entity shall increase the LC amount to Rs. 35 Crore by adding Rs. 13 Crore.

(5) In case of failure to pay into the "State UI Pool Account Fund" within the specified time of 12 days from the date of issue of statement of UI charges, the SLDC shall be entitled to encash the LC of the concerned entity to the extent of the default and the concerned entity shall recoup the LC amount within 3 days.

7.1.3 Application of fund collected through UI

(1) The amount left in the State UI pool account fund after final settlement of claims of Unscheduled Interchange charges of the generating station or injecting entity and the drawing entity shall be transferred to a separate fund as may be specified by the Commission and shall be utilised, with the prior approval of the Commission for either or both of the following activities:

(a) Servicing of investment for transmission schemes of strategic importance, provided that UP Power Transmission Corporation Ltd. in consultation with State Power Committee and Central Electricity Authority shall identify the intra-State transmission schemes of strategic importance, not being utilised up to optimum level and seek prior approval of the Commission for servicing of capital costs during the initial years.

Provided further that when utilisation of such transmission line or transmission system included in the transmission schemes of strategic importance reaches the optimum level of utilisation, the

cost of such scheme shall be recovered from the users of the scheme in accordance with the methodology specified by the Commission

(b) Providing ancillary services including but not limited to 'load generation balancing' during low grid frequency as identified by the State Load Despatch Centre, in accordance with the procedure prepared by it, to ensure grid security and safety:

(2) The amount of fund, allocable for the purposes specified under para(1) shall be decided by the Commission from time to time".

8.0 Indemnification:

The generating companies, distribution licensees, transmission licensees, open access customers and other users shall keep SLDC indemnified at all times for anything done by it in good faith in course of discharge of its functions and duties under these procedures in connection with or resulting from or arising out of exercise of SLDC's obligations of scheduling, despatch, energy accounting, UI accounting and settlement system.

9.0 Amendments, as and when made by CERC in UI Regulations or IEGC, shall be incorporated accordingly by SLDC with suitable modifications in these procedures under intimation to the Commission. Such changes shall be discussed in State Power Committee before finalization.

Sd/-
(S.C. Rawat)
Executive Engineer(SLDC)

Sd/-
(R.K. Gupta)
Superintending Engineer(SLDC)

Sd/-
(S.K. Jain)
Chief Engineer(SLDC)