

**No. L-7/ 1(1)2009 - CERC
CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

- 1. Dr. Pramod Deo, Chairperson,**
- 2. Shri R. Krishnamoorthy, Member**
- 3. Shri. S. Jayaraman, Member**
- 4. Shri V.S. Verma, Member**

In the mater of

The Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulations, 2009.

Statement of Objects and Reasons

1. Introduction

1.1 In exercise of the powers vested under section 178 of Electricity Act, 2003 (the Act) and all other powers enabling it in this behalf, the Commission published the draft of the Central Electricity Regulatory Commission (Unscheduled Interchange and related matters) Regulations, 2009 along with explanatory memorandum seeking comments/suggestions/objections of the stakeholders, vide public notice dated 23.2.2009. Pursuant thereto, the comments and suggestions were received by the Commission from the stakeholders given at **Annexure-I**.

1.2 The regulations have been finalized after detailed analysis and due consideration of the various issues raised by the stakeholders. These are being discussed in the succeeding paragraphs.

2. Modification in the definition of Buyer, Seller and Beneficiary

2.1. PTC India Ltd. proposed to modify the definition of the terms 'buyer' and 'seller' on the ground of simplicity and its alignment with the Act. The definitions proposed by PTC are as under:

'Buyer' means a grid connected entity including the beneficiary, buying electricity through a transaction scheduled in accordance with the regulations of the Commission for short term open access, medium term open access and long term open access

'Seller' means a grid connected entity including a generating station, supplying electricity through a transaction scheduled in accordance with the regulations of the Commission for short term open access, medium term open access and long term open access)

2.2. PGCIL, NLDC and some RLDCs opined that the word 'beneficiary' may be replaced with the word 'Regional Entity' at all places in the regulations and the term '*Regional Entity*' should be defined to mean a person whose metering and energy accounting is done at regional level. It has also been suggested that definition of UI may be modified as '*For an injecting regional entity, UI means actual generation minus its scheduled injection and for a drawee regional entity, it means total actual drawal minus its total scheduled drawal*'.

2.3. It is observed that while as per the published draft the buyer specifically excluded beneficiary and seller specifically excluded generating station, the amendment proposed by the stakeholders seeks to include beneficiary in the definition of buyer and the generating station in the definition of seller. Although, most of the provisions apply equally to buyers and beneficiaries on the one hand and the sellers and generating stations on the other hand, we prefer to keep the distinct identity of beneficiary and

generating stations because these entities are involved in long-term transactions and are referred to in other regulations as well. We therefore hold that no changes are required in this regard.

3. Modification in the definition of Load Despatch Centre

3.1. A number of stakeholders such as PTC India Ltd, PGCIL and NTPC have suggested that the definition of Load Despatch Centre should also include National Load Despatch Centre.

3.2. The above suggestion has been accepted and a suitable modification has been incorporated in the final regulations.

4. Inclusion of definition of 'Person' and 'Transaction Scheduled'

4.1. It has been suggested by Chhattisgarh Power Transmission Company Ltd that definition of 'Person' should be included as it has been repeatedly used in the regulations. The stakeholder has also suggested that the period of short term and medium term open access may be defined.

4.2. Clause (2) of regulation 2 specifies that '*words and expressions used in these regulations and not defined, but defined in the Act, or the Grid Code or the Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulations, 2009 shall have the meanings assigned to them respectively in the Act or the Grid Code or the Central Electricity Regulatory Commission (Terms and conditions of Tariff) Regulations, 2009.*' In view of this we do not consider it necessary to add the definition of person and the periods of open access.

4.3. Power Company of Karnataka Limited (PCKL) suggested that the term 'Transaction Scheduled' used in the regulation may be defined.

4.4. We observe that the term 'transaction scheduled' has been used in the context of defining 'buyer' and 'seller' and it has been stated therein that 'transaction scheduled' would be in accordance with the regulations of the Commission for open access, medium term access and long term access. In view of this we do not find it necessary to define this term, which has already been covered under relevant open access regulations.

5. UI Charges and UI Vector

5.1. The draft regulations had the following provisions for UI charges:

The charges for Unscheduled Interchange shall be worked out on the average frequency of the time-block at the rates given hereunder:-

Average frequency of time block (Hz)		UI Rate
Below	Not below	(Paise per kWh)
----	50.30	0
50.30	50.28	12
50.28	50.26	24
-----	-----	-----
-----	-----	-----
50.04	50.02	168
50.02	50.00	180
50.00	49.98	192
-----	-----	-----
-----	-----	-----
49.52	49.50	480
49.50	49.48	497
49.48	49.46	514
-----	-----	-----
-----	-----	-----
49.24	49.22	718
49.22		735

(Each 0.02 Hz step is equivalent to 12.0 paise/kWh in the 50.3-49.5 Hz frequency range and to 17.0 paise/kWh in the 49.5-49.2 Hz frequency range)

5.2. Comments received from various stakeholders on this provision are as follows:

- Reduction in UI ceiling charges is a welcome step as it would result in reducing rate in power trading market and such proposal is in consonance with the reduction in fuel price like Naphtha. **(Uttar Pradesh Power Corporation Limited (UPPCL), AP Transco and Tata Power Trading Co. Ltd. (TPTCL), Shri Padamjit Singh, Ex-CE PSEB)**
- Proposed regulations will help in developing electricity market by making UI mechanism primarily a grid balancing mechanism as is being envisaged and not a trading mechanism. **(TPTCL)**
- Maximum UI rate should not be more than Rs 5.70 per kWh as the cost of liquid fuel based generation (Kayamkulam based on Naphtha) is far lower as compared to cost of Rs 6.97 per kWh as outlined under Explanatory Memorandum which corresponds to variable cost of generation of Auraiya generating station in the northern region. It is also suggested that the slope for UI rate curve -can be more or less flat in the operating range of 50.2 to 49.8 Hz, equivalent to pooled cost of generation from CGS. **(TNEB)**
- Ceiling rate should be maintained at Rs 10 per kWh at 49.2 Hz, as grid security is of paramount importance. Reduction in frequency band will improve voltage profile. However, reduction in upper limit of 50.3 Hz may not have significant effect. **(Prof. S.A. Khaparde, IIT Bombay)**
- In order to take care of the variations of fuel prices, it may be prudent to index the UI rate vector to the costliest liquid based generation at 49.6 Hz. Since limits on UI are being proposed in the regulations, it is essential that all

available generation is despatched by the time grid frequency goes below 49.5 Hz (**PGCIL / RLDC/ NLDC**)

- Concept of UI will be diluted by setting it at unrealistic level, specifying ceiling rate below what parties are ready to pay for over-drawal. The UI mechanism would then become ineffective. Earlier, the Commission made a conscious compromise while deciding to specify the ceiling UI rate below the cost of HSD based generation. The recent fall in fuel price has provided an opportunity to get over the compromise, and therefore ceiling UI rate should be retained at Rs 10.0 per kWh. (**Shri Bhanu Bhushan**)
- Variation in UI price should be on the basis which is transparent and linked to liquid fuel price as it is meant to give pricing signal to large amount of stranded capacity to schedule/inject power into the grid when frequency is low. Pegging the ceiling UI rate at lower level may create market distortions and give a wrong signal to the utilities to over-draw under UI mechanism rather than to purchase extra power or adds sufficient generation capacity. Hence, further lowering of UI charges would encourage over-drawal and lowering of frequency below 49 Hz. Thus lowering of UI prices may or may not affect short term power trading prices but would definitely defeat the purpose of introduction of ABT. (**IPPAI**)
- Existing UI ceiling price of Rs 10.0 per kWh should be continued. CERC should take into account that frequency profile does not depend only on UI charges. The demand supply gap has major impact on frequency profile. Therefore in such power shortage scenario, instead of giving importance to

generation capacity addition, such exercise on UI charges will result in further deteriorating frequency profile. Lowering of UI charges in tandem with the higher volume of over-drawal shall ultimately increase the overall volume of UI over-drawal at frequency 49.5 Hz or below. Due to higher volume of UI, the corridor availability for trading activity and contracted power will be reduced significantly. **(WBSETCL and WBSEDCL)**

5.3. It may be seen from the above that divergent comments, supporting and opposing the proposed revision in UI price vector and revision in the UI ceiling price were received. In this context, we would like to emphasise that UI pricing is expected to serve the twin objectives of specifying settlement rate for deviations from schedules in normal operating range and ensuring 'grid discipline' on the one hand while ensuring maximisation of generation at optimal cost for grid participants on the other. Further, UI pricing mechanism should discourage grid participants from using UI mechanism as trading instrument. The Commission is conscious that narrowing down of operating frequency range as suggested by many stakeholders including PGCIL, RLDC, NLDC shall send strong signal towards achieving long term goal for grid operations. Accordingly, we hold that the UI price should reflect prevalent market conditions in respect of liquid fuel and other fuel sources such as RLNG which has energy charges in highest price band.

5.4. In this context, we also take note of the fact that the share of grid connected diesel based generating stations in the total installed capacity being very miniscule, does not reflect the marginal generation cost in true sense. On the other hand,

combined cycle generation capacity in excess of 3000 MW (of central generating stations alone) using naphtha/RLNG as fuel represents significant marginal generation capacity in the system. Accordingly, variable cost of generation of combined cycle plants using naphtha/RLNG as fuel has been taken into account while revising UI ceiling price in April 2007 and subsequently in January 2008. With significant reduction in liquid fuel prices in the recent past, variable cost of generation of such combined cycle generating stations is bound to decline necessitating review and revision in the UI price vector and cap thereof. Accordingly, variable cost of generation based on prevalent fuel prices in case of combined cycle gas turbine stations of central generating stations using naphtha and RLNG as fuel was summarised in the Explanatory Memorandum. The average prices of RLNG for various CCGT stations has varied from US\$ 13.56/MMBTU (Anta and Faridabad) to US\$ 16.55/MMBTU (Auraiya) whereas average price of naphtha for various CCGT stations has varied from Rs 24,872/MT (Kayamkulam) to Rs 33,794/MT (Auraiya) The variable cost of generation of various CCGT stations have been computed based on the approved norms, fuel price and calorific value for respective CCGT station. Accordingly, the variable cost of generation for such combined cycle generating stations have varied from Rs 4.52/kWh (Kayamkulam-naphtha) to Rs 6.97/kWh (Auraiya-RLNG) and the weighted average variable cost for generation for such stations is around Rs 6.01/kWh. The variable cost of generation may vary due to variation in prices of RLNG or Naphtha, as the case may be. As the highest variable cost for RLNG based generating station amounts to Rs 6.97 per kWh and providing for variation in fuel prices of around 5%, ceiling UI rate as Rs 7.35 per kWh has been arrived at. The Commission recognises that as variation in the

liquid fuel prices are subject to market fluctuations, revision in UI price mechanism from time to time is desirable. Accordingly, provision has been made under the Regulations. Needless to add that while undertaking such revision, the Commission shall duly consider impact of variation in fuel prices. The final regulations stipulate that the Unscheduled Interchange charges shall be reviewed by the Commission on six monthly basis or earlier, and amended, if necessary through separate Orders to be issued from time to time.

5.5. Suggestion of TNEB for further reduction of UI ceiling price, at Rs 5.70 per kWh, cannot be accepted for the reasons cited above. Any generating station should be fairly compensated at least to the extent of full recovery of its energy charges for over-injection of electricity into the grid during low frequency conditions. At current fuel costs, TNEB's proposal will lead to under-recovery of energy charges for many RLNG/Naphtha based generating station.

6. Reduction in Frequency range

6.1. The draft regulations had a proposal to reduce the operating frequency range to 49.2 Hz to 50.3 Hz for UI rate under regulation 4. The Comments received on this aspect are summarised below:

- Narrowing down of operating range within 49.2Hz to 50.3 Hz is welcome step in maintaining quality supply. However, in the present days of severe power shortage, restrictions adhering to lower limit may not be desirable. **(TNEB)**

- Lower frequency range of 49.2 Hz should be made to 49 Hz and UI rate for 49.2 Hz to 49.0 Hz should be steepest. UI rate should even be higher than costliest generation. **(PTC)**
- Transition period should be granted for achieving the target revision in lower limit of frequency from 49.0 Hz to 49.20 Hz because of delay in commissioning of some gas based generating stations due to delay in supply of natural gas and delay in commissioning of Kaiga and Kudamkulam nuclear stations in the central sector. Hence, revision of cap from Rs 10.00 per kWh to Rs 7.35 per kWh may be introduced when power availability improves. **(AP Transco)**
- Approach for narrowing down the frequency should be pragmatic. The attempts to maintain frequency above 49.2 Hz through proposed measures would reduce grid collapse risk only marginally since frequency would still travel below 49.0 Hz, especially in the absence of FGMO. Other impact of frequency variation is variation of voltage over the entire system due to change in reactance of all system components. This has been the primary factor for which RLDCs have wanted narrower frequency band. With synchronisation of regional grids, problem is becoming more serious and effective solution requires FGMO again. Reduction of frequency band would help only to a limited extent because it would not reduce dynamic variations of voltage. **(Shri Bhanu Bhushan)**
- System frequency should be operated close to the 50 Hz inline with the international standards. Therefore, the next operating frequency range

should be 49.5 Hz to 50.2 Hz instead of proposed 49.2 – 50.3 Hz. **(Shri A. Velayutham, Member, MERC)**

- It is required to narrow down the frequency with proper method. Just narrowing down the band may not work. At limiting frequency, the UI price vector should not become flat but should become steeper. In fact, UI price can even be negative when frequency is high. **(Shri Mark B. Lively and Shri Prabuddha Banarjee)**
- The proposal of narrowing down of frequency band is a step in the right direction and the same shall prove to be a correct measure to control low frequency. As there is a time gap between initiation of load shedding and actual load shedding, the proposed limit of 49.2 Hz would enable first line of defence, as under frequency relay to operate at 48.8 Hz, and 0.2 Hz operational cushion results into spinning reserve of 320 MW. **(Shri Padamjit Singh)**
- The tightening of frequency band and volume cap are welcome steps. However, the supporting arguments should also mention the strong influence of frequency over system voltage and line loadings in a very large grid. **(PGCIL/RLDC/NLDC)**

6.2. As stated above, the proposed reduction in the range of operating frequency has been favoured by many stakeholders including RLDC/NLDC. We have no doubt that narrowing the frequency range of operation is a step in the right direction of operating the power system close to standard grid frequency of 50 Hz which is the long term goal in the interest of grid operations for improving the quality of supply. It is apparent that

the equipment designed for nominal frequency of 50 Hz when operated at frequency at variance from nominal value will be subjected to degradation of performance and efficiency.

6.3. In this context, we recall that the introduction of ABT mechanism since 2002 has brought in focus the benefits of narrowing the frequency swings within the band of 49.00 Hz to 50.5 Hz and its beneficial impact on grid operations, power system management and electricity market development have been well acknowledged. However, despite demonstrated improvement in grid frequency, the efforts for improvement in grid frequency operations seem to have reached saturation point, particularly in the recent past.

6.4. Further, the Commission observes that despite improvement in the power availability, improvement in grid frequency operations is far from satisfactory. The beneficiaries located in Western and Eastern Regions have repeatedly expressed concern over the heavy over-drawal by the beneficiaries in the Northern Region. Hence, regulatory intervention is necessary to emphasize the need for conscious efforts to be undertaken by all concerned for narrowing the frequency range of operation. We are convinced that in order to improve frequency performance of the grid, multi-pronged regulatory approach would be necessary. Introduction of volume caps for over-drawal and under-generation, introduction of additional UI charge and narrowing the band for grid frequency operation are but a few steps in this direction.

6.5. We also take note of the fact that the significant demand-supply gap and inadequate load forecasting techniques with distribution licenses for predicting the day-ahead load, make the reduction in frequency range at par with the international standards a distant dream. Therefore, we have adopted a cautious approach in reducing the frequency range in a gradual manner with only 0.2 Hz reduction in higher and lower level of frequency range. Therefore, the new frequency range shall be 49.2 Hz to 50.3 Hz, which will compel the beneficiaries to take measures for improving load forecasting and accordingly contract for the required generating capacity, which shall be beneficial for long-term development of the power sector. Further efforts to narrow down the frequency will be considered in due course of time.

7. UI price cap for generating stations

7.1. The draft regulations had following provisions for UI price cap for generating stations:

“Provided that in case of generating stations with coal or lignite firing and stations burning only APM gas, UI rate shall be capped at 408 paise per kWh when actual generation exceeds the scheduled generation.”

7.2. The Comments received on this aspect are summarised below:

- UI Price Cap of Rs 4.08 should be set at higher level so as to maintain grid discipline. To avoid discrimination, UI price cap should not be applicable only to generators. **(PTC)**
- Distribution companies selling surplus power through UI has been exempted from the UI Price cap, which is not equitable. **(PTC and UPPCL)**
- Assam gas based station burns APM (1 MMSCM per day) as well as non-APM gas (0.4 MMSCM per day) for generation of electricity. Due to non-

availability of sufficient APM gas, any generation beyond declared capacity will have to be from non-APM gas. Therefore, the UI price cap of Rs 4.08 per kWh should not be made applicable for this station. **(NEEPCO)**

- UI rate is capped at Rs 4.08 per kWh, for generating stations using coal or APM gas only as fuel, for UI energy supplied by generating station while the payable rate can be as high as Rs 7.35 per kWh which the generators have to necessarily incur each time when the unit trips or start up power is being availed. Implication of large scale negative UI will lead to conservative declaration of capacity which in turn would mean less energy availability to the grid, defeating the purpose of ABT to maximise the availability of power in the grid. Further, the beneficiaries can under-draw from the regional grid by leveraging extra generation from the embedded generators within their system and get paid full UI charges for this under-drawal. This distorts the level playing field and leads to discrimination against ISGS/CGS. Further, as per the provisions under tariff regulations 2009, almost 1/3rd of the UI amount will have to be paid as income –tax which would leave very little incentive to the generators. Therefore, to make whole system equitable and to provide adequate incentive to the generator for maximising generation, cap on UI rate needs to be removed. **(NTPC)**
- Differential treatment to generators and beneficiaries should be stopped by removing the UI price cap for generators. It is suggested that the Commission should specify the same UI price cap for above and below the scheduled injection; if at all price cap is retained by the Commission. Further

UI price cap should be relaxed at least during the frequency range from 49.5 Hz to 49.3 Hz. **(NLC)**

- Uniform UI cap needs to be imposed on all types of generation inclusive of captive and non-conventional energy sources. UI ceiling cap should be 150% of cost of generation. **(TNEB)**
- Price cap of Rs 4.08 per kWh for over generation was introduced as an ad-hoc measure to check the undue profit by NTPC and to address the concern of utilities. Though UI price cap for generators served the immediate purpose but it has introduced a distortion in basic concept of UI which should be bi-directional and reciprocal. Instead of specifying the price cap of Rs 4.08 per kWh for the generating stations whose fixed cost is shared by the beneficiaries, net payment of UI charges for variation from scheduled generation may be allowed at energy rate for the fuel used for additional generation plus one rupee per unit. **(Shri Bhanu Bhushan)**
- UI charges should not form part of ABT; the cap indicated for generators (Rs 4.08/kWh) can further be pruned down in line with the proposed downward revision in ceiling rate from Rs 10.00 per kWh to Rs 7.35 per kWh. **(Shri A. Velayutham, Member, MERC)**

7.3. As regards differential treatment to generating station, we wish to clarify that as stated above, the UI pricing mechanism is expected to serve the twin objectives of specifying settlement rate for deviations from schedule in normal operating range and ensuring 'grid discipline' on the one hand while ensuring maximisation of generation at optimal cost for grid participants on the other. Under the regulated regime of tariff

determination, it needs to be ensured that while generating stations are entitled to recover their cost of generation, any additional income through UI mechanism over and above actual variable cost of generation by such generating stations shall not result in higher cost for the end-consumers.

7.4. The UI price cap of Rs 4.08 per kWh has been imposed only on the generating stations based on coal, lignite and APM gas as a fuel. Such cap has been specified after taking into account the factor that such generating stations must have some incentive in addition to the recovery of their energy charges. As per recent estimates, the variable cost of generation for such generating stations ranges between 64 paise/kWh (Korba TPS) to 248 paise/kWh (Badarpur TPS). Thus, even at a cap of Rs 4.08/kWh for over-injection by such generating stations, adequate incentive has been provided.

7.5. The recovery of fixed costs of generating stations based on availability declarations and normative performance parameters have been well addressed in the tariff regulations 2009. In addition, the generating stations are entitled to earn incentives for their generation beyond normative availability. The normative availability parameters have been specified taking into consideration planned outage as well as forced outage conditions. Thus, any risk of forced outage and consequent non-availability is also borne by the beneficiaries as the fixed costs of the generating stations are fully covered up to normative availability factor. Further, at proposed price cap of Rs 4.08/kWh, there still exists significant opportunity for incentives.

7.6. We have also taken into consideration the concern expressed by NTPC and NLC of differential UI prices for over-injection and under-injection of electricity. The under-injection results into higher UI charges while UI charges for over-injection is being capped at 408 paisa/kWh, resulting into possibility of losses to the generating station if under-injection exceeds over-injection at lower frequency. After taking into account all these factors, it has been decided to make suitable modifications in the final regulations by specifying bi-directional UI price cap i.e. the UI price cap of 408 paisa/kWh shall be applicable for both over-injection and under-injection of electricity for all generating stations, using coal or lignite or Administered Price Mechanism (APM) gas only as the fuel, in case when actual generation exceeds or is lower than the scheduled generation in the frequency range between 50.3 Hz and upto 49.2 Hz.

7.7. As regards the suggestion of imposing UI price cap on all types of generating stations, we are of the view that the Commission has imposed the UI price cap only on the generating stations which are regulated by it under the provisions of the Act and use coal, lignite or APM gas only as fuel whose variable cost of generation is fairly lower than the proposed UI price cap. Therefore, there will be inherent incentive for these generating stations for over-injection of electricity. However, for other generating stations using coal/lignite or APM gas or sellers contracting for power based on such generating stations, whose tariff is not regulated by the Commission, introduction of such price cap at this stage without detailed analysis of their cost of generation including variable cost may not be appropriate. Further, the cost of electricity generation from liquid fuel based generating stations may be higher than the UI price cap, resulting

into partial recovery of energy charges, if UI price cap is introduced in respect of such liquid fuel based generating stations.

7.8. As regards the suggestion of keeping the UI price cap with the energy charge plus one rupee, we feel that the suggestion is prudent in case incentive opportunity for over-generation is to be limited to Re 1.00 per unit. However, implementing the same may pose some practical difficulties. The energy cost could vary due to frequent variation in fuel prices, and therefore RLDC will have to take into consideration the cost of generation of all participating generating stations for the purpose of UI pool computations.

8. Applicability of UI Price cap on Merchant Power Plants

8.1. The draft regulations had no specific provision for applicability of UI price cap on merchant power plants. Comments as received from various stakeholders on this aspect are summarised in the following paragraphs:

- In its Order No., L-7/25(50/2003-CERC, dated December 31, 2007, the Commission had mentioned the UI Price cap of Rs 406 paise per unit for the coal, lignite and APM gas based stations and excluded the RLNG/LNG fired generating stations, hydro power stations, merchant plants, merchant capacity etc. The present draft regulations have no such specific provision for exclusion of merchant power plants from UI Price cap therefore one section in this matter must be added. Therefore, UI price cap of Rs 4.08 per kWh should not be applicable for hydro power stations, merchant plants/merchant capacity and other generating stations for which its fixed cost is not being reimbursed through capacity charge. ***(Spice Energy Limited, East Coast***

Energy Limited, Athena Chhattisgarh Power Pvt. Ltd., Bhilwara Energy Limited, Malana Power and Meenakshi Energy and Vandana Vidyut Ltd).

- Provision related to excluding the Merchant Power Plant should be clearly specified. ***(PTC)***
- Merchant Power Plant and other generating stations (Excluding Hydro) should also be brought under UI Price cap. Further, Renewable energy generators like wind and solar should be kept out of UI limit. ***(IEX and PXIL)***

8.2. The proviso in regulation 4 clearly spells out that UI price cap shall be applicable to the generating station based on coal, lignite and APM gas only as fuel. For further clarity, modification has been made in existing proviso that such price cap shall be applicable to the generating stations regulated by the Commission which gives ample clarity about applicability of UI price cap. Therefore, the UI price cap of Rs 4.08 per kWh 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.

8.3. As highlighted earlier, for other generating stations using coal/lignite or APM gas or sellers contracting for power based on such generating stations, whose tariff is not regulated by the Commission, introduction of such price cap without detailed analysis of their cost of generation including energy charge may not be appropriate.

9. Review of UI mechanism

9.1. The draft regulation had no specific provision for review of UI rate. The Comments received are summarised below:

- A six monthly review of the UI rate vector should also be proposed to take care of changes in fuel prices. *(PGCIL/RLDC/NLDC)*
- Concept of UI price vector in the Indian context is to use it as commercial approach to handle the unscheduled flows of electricity between participants of electricity grid which has proved to be a useful tool in maintaining grid discipline and ensuring grid security. It is observed that in the current context of implementation: “(a) The UI price vector approach breaks down when prices are high. Accordingly, the concept of a ceiling price should be eliminated and the price vector be extended into the frequency range below 49.0 Hz, (b) though the UI price vector produces a dynamic price for unscheduled flows of electricity the price vector itself is static. There should be in place a process to review the slope of UI price vector whenever the average frequency for the prior year has been significantly different from 50.0 Hz. (c) The unitary nature of UI price vector does not recognize constraints on the transmission system. An additional price vector should be used for any area that is downstream of a transmission constraint.” The above changes would improve the functioning of UI price vector, making the electric system in India even more secure by attracting more generation, both by getting existing idle generation to operate at opportune times and by

encouraging the investment in the new generation. (**Shri Mark B. Lively, Utility Economic Engineer, USA**)

9.2. We accept the suggestion that the UI price mechanism should be responsive to change in market conditions. Accordingly, an enabling clause on the powers to amend the regulations has been incorporated to facilitate such review/modification as may be necessary from time to time.

9.3. As regards revision of UI price vector, with significant variation in the liquid fuel prices, consequent revision in UI price mechanism from time to time is necessary. Hence, an enabling provision has been incorporated under the regulations to facilitate such revisions from time to time. While undertaking such revision, the Commission shall duly consider the impact of variation in fuel prices. The final regulations stipulates that the Unscheduled Interchange charges shall be reviewed by the Commission on six monthly basis or earlier, and amended, if necessary through separate Orders to be issued from time to time.

10. Inter-regional UI Accounting and Settlement

10.1. The draft regulations had no specific provision for inter-regional accounting of UI charges. The comments received on such provision have been summarised below:

- **NTPC** has raised the issue related to UI accounting faced by its Southern region stations. The UI account is normalised to the lower of payable or receivables. When the actual transmission loss for a week is significantly higher than the scheduled loss (as was the case in SR on at least 4 occasions), the amount of UI payable to generators was made zero.

Therefore, NTPC suggested that in case capped UI rates are applicable for payments to generators no other capping should be applicable. UI payable to generators after applying capped rates may be preserved while doing any balancing of weekly UI pool accounts.

- UI is allowed to SR even if system frequency is below 49.5 Hz, thereby resulting in reduction of frequency in NEW grid. SR is connected with NEW grid on HVDC links and flow on these links is controllable. Hence, it must be ensured that UI is not allowed to SR below 49.5 Hz. **(MSETCL)**
- In times of low frequency, Southern Region has been receiving inter-regional UI up to 2000 MW. With the proposed restriction of frequency and over-drawal (12% or 150 MW, whichever is lower in one time block and 3% on daily aggregate basis) the benefit of inter-regional UI may not be fully utilised. One of the suggestions could be that inter-regional UI may be subtracted from the State drawal in the ratio of their drawal and the above condition may be applied afterwards. Alternatively, the clause in its present form can be implemented after integration of SR grid with the NEW grid in synchronisation. **(Southern Region Power Committee (SRPC))**

10.2. It is well known that the zero-sum feature of UI pool account no longer exists consequent to introduction of UI price cap on generating stations using coal, lignite and APM gas. Thus, the need for matching of UI payable and UI receivable should normally not arise. We feel that the operational issue, if any, as raised by NTPC cannot be addressed without giving adequate opportunity to other parties including RLDC. We therefore do not find any need to incorporate any provision under the regulations at this

stage. As regards the concerns expressed on implication for inter-regional UI on account of introduction of volume cap on over-drawal and under-generation during low frequency regime, it is clarified that volume caps will have to be monitored and operationalised for each beneficiary and generating station for their deviations, on overall basis at State boundaries and not on collective regional basis. Further, the additional UI charge for under injection and over-drawal by regional entities collected within the region shall be retained in the pool account of that region and shall not be passed on to another region. UI mechanism is not intended for benefiting a particular region due to frequency variations between the regions therefore the suggestion of SRPC to introduce volume caps upon integration of SR grid with NEW grid in synchronous mode cannot be accepted.

11. Station wise UI Accounting

11.1. The draft regulations had no specific provision as to whether UI accounting is to be done stage wise or station wise. It was understood that scheduling shall be done as per the procedure specified under the Grid Code. In this regard, NTPC has made the following suggestion:

- In reference to multi-stage generating stations, UI accounting for various stages may be done collectively for the station as a whole. This will also eliminate needless additional metering required to segregate ex-bus generation of various stages. Accordingly, the following provision under clause 2(1)(o) may be inserted:

“Provided that in case of stations with more than one stages, the scheduled generation shall be the sum of the schedules from individual stages for each time block’.

11.2. Under the current framework of tariff regulations, the tariff for a generating station is to be determined on stage basis or unit basis or generating station as a whole. The determination of annual fixed cost and recovery thereof is also linked to availability declaration for each unit/stage, as the case may be, where such tariff has been determined separately for unit/stage in line with Tariff regulations. Under these circumstances we feel that, in case of multi-stage generating stations, considering UI on collective basis for station as whole will not be appropriate.

12. Provisions for crossing the generation limits by Generating Stations

12.1. The draft UI regulations had no provision specifying the generation limit for the generating stations. It was understood that it shall be governed as per the provisions of Grid Code. In this regard, the following comments have been received:

- Draft regulations have no provision for preventing the energy sale by the generating station for generation beyond 101%. **(UPPCL)**
- In case of gas stations, it is fairly established that in the past there has been under generation on liquid and over generation on gas and the UI of the station is the net UI. For this reason also, there is need to enforce the UI cap of 1% and 5% on 15 minute basis and also to impose the price cap of 408 Paisa/unit on gas stations. **(Padamjit Singh)**

12.2. We would like to clarify that 101% is not the ceiling limit for generation of electricity by any generating station. Ceiling of 105% in any time-block and 101% on a daily aggregate basis have been imposed in case of generating stations other than hydro generating stations for preventing gaming by such generating stations. RLDC may investigate if actual generation exceeds the prescribed limit. The generating station shall be entitled to recover the UI charges for such actual generation in excess of scheduled generation, unless gaming has been established. A suitable provision in regulations 6 has been added for enhancing clarity on this aspect.

13. Reduction in time blocks for schedule revision

13.1. The draft UI regulations had no specific provision for specifying the time blocks for revision in schedule due to unforeseen conditions. It was understood that it shall be governed as per the provisions of the Grid Code. In this regard NLC has suggested as follows:

- Revision in DC should be made effective from 3rd time block in normal conditions and from 2nd time block in forced outage conditions. It has been further requested that the CERC should exempt TPS-I from the purview of ceiling limit of 105% and 101%, considering the uncontrollable load variations and vintage of the plant.

13.2. The revision in schedules for effectiveness from 4th time block in case of forced outage and 6th time block in case of normal conditions with advance notice have been in practice for long and was introduced taking into consideration the implementation feasibility. Time lag in revising the schedule has been specified after duly considering

the transition period in implementing the revised schedule due to involvement of number of agencies, RLDC, SLDC, beneficiaries etc. The Commission does not agree with NLC's suggestion for revising the time-blocks for effecting revised schedules. The Commission has also considered the views of system operator in this regard before taking the final decision.

14. Limits on UI Volume

14.1. The draft regulations had the following provision for limit on UI Volume:

“The over-drawal of electricity by any beneficiary or a buyer during a time-block shall not exceed 12% of the scheduled drawal of such beneficiary or buyer or 150 MW (whichever is lower), and 3% on a daily aggregate basis, for all the time blocks when frequency is below 49.5 Hz.”

14.2. The comments received on the above provision have been summarised as under:

- Over-drawal cap provision as proposed in the draft is lenient. It may endanger the grid during low grid frequency. Over-drawal limit of 5% in a time block and 1% daily on aggregate basis when grid frequency is below 49.5 Hz is proposed. **(PTC)**
- Proposed measure would facilitate ensuring the grid security. However, restriction on UI volume to 150 MW is too small for beneficiary like MSEDCL where average schedule is 2700 MW. Hence it has been requested to revise restriction on UI volume to 325 MW for a large utility like MSEDCL. Further, MSEDCL being a large distribution company, with demand of 15000 MW, precise regulation of load may not be possible resulting into inadvertent over-

drawal at low frequency. Therefore, new UI slab between 49.2 to 49 Hz should be prescribed. **(MSEDCL)**

- Due to less entitlement in comparison to actual demand, the over-drawal by DNH is in the range of 25%-30% but in absolute terms, the quantum is very miniscule. With the proposed over-drawal cap, DNH will always remain defaulter for all time blocks. Therefore, over-drawal limits in case of DNH should be little relaxed by adding *‘However, in case of the Union Territory of Dadra and Nagar Haveli, Over-drawal of electricity shall not exceed 12% of the scheduled drawal or 120 MW whichever is higher, at the end of clause 5.*

(Electricity Department, Dadra and Nagar Haveli)

- Over-drawal Limit should be increased to 12% for a State like UP which has large number of consumers. Further, 150 MW limit on over-drawal is very less considering the outage of 500 MW/1000MW size generation units.

(UPPCL)

- Share of Central sector power for Maharashtra is 3500 MW, volume cap of 150 MW amounts to deviation of only 4.2% as against 12% proposed under draft regulations. Deviation may be allowed up to 12% or 300 MW, whichever is less. Further, the cap on daily aggregate basis in MWh terms should be increased to 7-8% for frequency below 49.5 Hz instead of 3%. **(MSETCL)**

- In order to make clause 5 more clear, it should be reworded as, *“When frequency is below 49.5 Hz, the over-drawal of electricity by any regional entity shall not exceed (a) 12% of the scheduled drawal of such regional*

entity or 150 MW (whichever is lower) during time block and (b) 3% on a daily aggregate basis.” (PGCIL)

- In the absence of timely capacity addition and consequent shortage situation, imposing conditions on volume cap on beneficiaries on over-drawal may not be reasonable. Besides, operational volume cap during off-peak period, especially during monsoon season when hydro generation is expected to be maximum, needs to be addressed. **(TNEB)**
- Proposed revision in UI ceiling rate and unrealistic limits on UI volume, reduced incentive for extra generation, etc. may lead to (a) increased tendency for over-drawal, (b) increased tension between RLDC and State Utilities, (c) complaints leading to proceedings before the Commission, (d) increase in load shedding and consumer suffering, (e) reduced quantum of energy on offer for trading, (f) increase in price of traded power, and (g) deterioration in frequency regime. Accordingly, no UI volume limits be specified by the Commission and the matter be left to RLDCs’ discretion, but with an increase in UI ceiling rate for discouraging over-drawal and encouraging under-drawal in deficit conditions. RLDC actually wanted levy of surcharge when over-drawal exceeds certain level, not physical limits. **(Shri Bhanu Bhushan)**
- For frequency of 49.5 Hz and above, there should not be over-drawal limit for the beneficiaries. As regards over-drawal limit for frequency below 49.5 Hz, the issue is under the purview of clause 6.4 (4) of IEGC. Currently, CERC is undertaking the review of IEGC and this issue of UI volume cap below 49.5

Hz should be addressed in IEGC not in UI regulations. As regards daily aggregate cap of 3%, there are practical difficulties in operationalising the same as UI accounts, based on SEM meter readings, are issued after 10-15 days. In order to operationalize the same on telemeter data, RLDCs/ SLDCs would need to develop software and online integration system for computing cumulative over-drawal for the time block for which frequency is below 49.5 Hz. Besides, telemeter data can be considered only if accuracy is within $\pm 0.5\%$ of metered data, which may not be the case. Therefore, the proposed limit of 3% may be referred to RPCs for their feedback as role of RPC envisaged under Section 29(4) of the Act as collective forum for striving towards objective of stability and smooth operation. **(Shri Padamjit Singh, Ex-CE, PSEB)**

- Limit of UI volume should be applicable for frequency range of 49.5 Hz to 49.2 Hz. For frequency below 49.2 Hz, no over-drawal should be permitted. **(CSPTCL)**

14.3. The earlier notification regarding UI mechanism (as specified under Central Electricity Regulatory Commission (Terms and Conditions for determination of Tariff) Regulations, 2004 including all other amendments thereto) had no specific provision for capping the over-drawal of electricity. However, in recent past, there had been persistent over-drawal by some of the constituents despite several warnings by the RLDC and penal actions by the Commission. All these incidences have highlighted the need for more stringent mechanisms for curbing over-drawal from the grid. In this regard, the over-drawal limit of 12% or 150 MW, whichever is lower, in a time block and

3% in a day on aggregate basis , for all the time blocks when frequency is below 49.5 Hz. has been specified.

14.4. The rationale for introducing the UI volume cap has already been detailed out in Explanatory Memorandum issued with the draft regulations. We also take note of the fact that many stakeholders have favoured introduction of such volume cap, which is desirable from the point of ensuring grid discipline. As regards the submissions by MSETCL, MSEDCL and UPPCL in favour of higher volume cap in absolute terms due to their large power systems, we are not able to agree. It is common knowledge that large power system offer inherent advantage of load diversity and flexibility in better load management and control, if appropriate load forecasting and load management plans are put in place. As regards point raised by the Electricity department of Dadra and Nagar Haveli to enhance volume cap as they tend to rely on over-drawal in the absence of adequate capacity allocation, we would like to clarify and emphasise that UI mechanism should not be construed as arrangement to meet capacity/energy requirements of beneficiaries. Beneficiaries must contract for adequate power or may take up their case for inadequate allocation in central sector generating stations before the Central Government separately. The over-drawal of electricity should not be viewed as one of the rightful source for meeting electricity requirement. The utilities must ensure long term contract or short term contract arrangements for meeting their energy requirement.

14.5. We also agree with the views expressed by some stakeholders that volume cap and other conditions should also be introduced for under-generation as proposed for

over-drawal, as under-generation has similar impact on the grid frequency as over-drawal when the frequency is low. Accordingly, clause (1) and (2) of regulation 7 have been modified as under:

“(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.

(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.”

14.6. However the phrase “for all the time blocks when frequency is below 49.5 Hz” got omitted inadvertently in both the clauses. Commission has not provided any limit on UI volume in the frequency range of 49.5 Hz to 50.3 Hz. As such, Commission has no intention to consider over-drawal and under generation in this frequency range for arriving at the UI volume limit over a day for over-drawal and under generation when the grid frequency is below 49.5 Hz. Accordingly, necessary amendment is being issued.

14.7. We would like to further clarify that the limit of 150 MW in a time block is at the State boundary and is the overall limit for all the intra-State entities put together including all discoms and intra-State buyers. It is up to the State as to how it imposes individual limits on the discoms and inter-State buyers.

15. Enforcement for crossing the over-drawal limit

15.1. The draft UI regulations had no specific penal provision for crossing the over-drawal limit as specified under regulation 6. It was implied that over-drawal beyond the

specified limit shall be treated as non-compliance of RLDC instructions and violation of regulations of the Commission and therefore, necessary action shall be taken as per the provisions of the Act. The comments received on this aspect are summarised below:

- Draft regulations should specify the penalty for crossing the over-drawal limit below the proposed lowest frequency limit. **(PTC, IEX, Kalkitech Communications, WBSETCL and WBSEDCL)**
- Proposed limits on over-drawal of electricity by beneficiaries are appropriate. Effective monitoring mechanism needs to be put in place by RLDCs to ensure proper compliance. **(TPTCL)**
- In case, the over-drawal limits exceed 3% for the day for the time blocks when frequency is less than 49.5 Hz, a flat surcharge of 50% of UI rate may be made applicable on the total over-drawal quantum. Invocation of Section 142/149 may be then necessary only in cases of repeated violations. **(PGCIL/RLDC/NLDC)**
- There is a need to cap the recovery of UI charges by discoms through ARR, particularly for the instances when over-drawal exceeds proposed volume cap. **(Shri A. Velayutham, Member, MERC)**
- Draft regulations do not indicate how the over-drawal limit is going to be enforced. In order to have better enforceability it is suggested that monetary deterrent/ penalty on overdrawing utilities beyond the above permissible limits of withdrawal may be kept at 1.5 times the prevailing UI rate at that time block. **(NTPC)**

- Two alternatives exist for enforcement of UI regime for constituents' over-drawal below 49.2 Hz namely, (a) financial and (b) legal /administrative. As penalty of Rs 10.0 has not prevented over-drawal, therefore legal/administrative approach is better as compared to financial approach. In case of violation by beneficiary, 15% share in unallocated power of central sector stations can be withdrawn in a phased manner for each violation. For persistent default, the provision under Section 142/149 provides sufficient power to the Commission to deal with such violation of Grid Code. **(Shri Padamjit Singh, Ex-CE, PSEB)**

15.2. We appreciate the concerns expressed by stakeholders for ensuring compliance of over-drawal limit and have also noted that some of the stakeholders have suggested levy of some form of penal provisions for enforcement. There cannot be two opinions that over-drawal and under-generation at low frequency will have to be treated as non-compliance of RLDC's instructions and contravention of regulations and will have to be strictly dealt with as per the relevant provisions of the Act. In addition, for continued over-drawal/under-generation below frequency of 49.2 Hz, a financial dis-incentive in the form of additional UI charge in addition to ceiling UI Rate has been introduced. The Commission has also considered that under-injection of electricity should also be limited during the low grid frequency. Therefore, under-injection and over-drawal of electricity have been treated at par for the purpose of applying additional UI charges during low grid frequency.

15.3. It has been decided to impose the additional UI charges equivalent to 40% of UI ceiling rate as applicable at frequency 49.2 Hz. for over-drawal and under-injection of electricity during all time blocks when grid frequency is below 49.2 Hz. Further, for the generating station using coal, lignite and APM gas, for which UI price cap is applicable, the 40% additional UI charges shall be computed on UI price cap of 408 paisa/kWh, for under-injection of electricity for all time blocks when grid frequency is lower than 49.2 Hz. Provision for review of additional UI charges has also been specified for monitoring its effectiveness in addressing the over-drawal and under-generation below 49.2 Hz.

15.4. The Commission has also noted the concern expressed by stakeholders for measurement of over-drawal. The telemeter as well as special energy meter (SEM) have been provided at all inter-connection points with inter-State transmission system. The telemeter data is used for real time system monitoring while SEM data is used for billing and commercial settlement of energy transactions. For operational administration of Volume cap provisions, RLDCs will have to rely on real-time telemeter data, which shall act as warning signal/instructions by RLDCs to grid participant. However, compliance monitoring of RLDC instructions for administering the volume cap and commercial settlement of net over-drawal and under-injection of electricity below stipulated frequency of 49.5 Hz shall be carried out on weekly basis based on the SEM data which is also used for preparation of regional energy account. It is for the regional entities, generators and beneficiaries to watch out for the difference in the telemetry data and SEM readings and ensure that their over-drawals and under injections are within the specified limits as per the SEM readings. However, no additional UI charge

has been proposed for operations within 49.5 Hz to 49.2 Hz at this stage. However, the Commission may consider levy of additional UI charge for this range of operating frequency depending on assessment of ground realities from time to time. Appropriate enabling provisions under the regulations have been incorporated accordingly under regulation 7.

15.5. We are in agreement with the view that the UI charge and Additional UI charge shall truly act as financial dis-incentive only if UI cost for over-drawal beyond the prescribed limits in the frequency range of 49.2 to 49.5 Hz, and the payments towards any over-drawal below 49.2 Hz are not allowed as pass-through for the utilities as part of their annual revenue requirement. In order to sensitize the Utilities, consumers and other stakeholders for such persistent over-drawal, and to facilitate such dis-allowance by concerned State Electricity Regulatory Commissions, the Commission believes that the information about such over-drawal/under-generation should be readily available. RLDCs have accordingly been directed to prepare and publish on their respective website the records, of the UI Accounts, on monthly basis, 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.

16. Treatment for small entities and IPPs under UI mechanism

16.1. The draft regulations had no specific provision for schedule or drawal by the smaller entities or for IPPs. Following comments have been received on this aspect:

- Entities below 10 MW of load/generation schedule should be exempted from cap on UI quantum to avoid unnecessary burden on RLDCs / SLDCs and to encourage market development for small players. **(IEX)**
- Large number of IPPs are selling power under Open Access. This reflects in reduction in the CGS allocation in the State, in which the particular IPP is located, but whenever, IPPs fail to generate power, such capacity sold in the local distribution companies insisted to reduce the demand. Therefore, the discoms for no fault of its action/plan should curtail power usage, in order to bring down over-drawal within the limits fixed. Therefore, where IPPs are selling power under open access, the suggested over-drawal limit should not be imposed. **(PCKL)**

16.2. The scope of UI regulations covers inter-State open access transactions of the buyers and sellers as contemplated under Open Access Regulations, irrespective of the capacity of contract/load by seller or buyer. The Act while mandating introduction of open access for load of 1 MW and above in phases also advocates non-discriminatory approach. The argument for exclusion for 10 MW and below is not for excluding UI mechanism but seeking exclusion from volume cap on such transactions, which would amount to preferential treatment. The grounds for seeking such exclusion have been stated as to avoid unnecessary burden on RLDCs/SLDCs and to encourage market development for small players. The Commission observes that RLDCs have not raised any operational difficulty and have in fact, favoured such introduction of volume cap. Accordingly, the Commission does not agree with the suggestion to exclude generators/load below 10 MW from imposition of such volume cap.

16.3. As regards concerns expressed by PCKL relating to under-generation by embedded generators and consequent UI implications for concerned State beneficiary, the same has been addressed by treating under-generation same as over-drawal. We wish to clarify that all other conditions such as volume cap, levy of additional UI charge etc. as applicable for over-drawal under low frequency regime (< 49.5 Hz) shall continue to be applicable for under-generation as well. Suitable provisions under the UI regulations have been incorporated under regulation 7.

17. Compliance with the instructions of Load Despatch Centre

17.1. The draft regulations had following provisions for ensuring the compliance with the instructions of Load Despatch Centre:

“Notwithstanding anything specified in Regulation 5, the generating station, the seller, the beneficiary and the buyer shall follow the instructions of the Load Despatch Centre on generation and drawal.”

17.2. PTC has pointed out that no penalty for non-compliance with the instructions of RLDC instructions has been specified.

17.3. It may be seen that as per the scheme of things, RLDC shall administer the volume cap provisions by monitoring the real-time injection and drawal of various participants and it may issue the instructions to the concerned beneficiaries, generating stations, buyers and sellers to observe grid discipline in compliance of UI regulations and the Grid Code. The Act prescribes penalty for non-compliance of the instructions by RLDC/SLDC instructions. Further, such non-compliance shall be treated as contravention of the regulations/Grid Code and any such non-compliance brought to the

notice of the Commission may attract penalty under Section 142 and / or Section 149 of the Act.

18. Schedule of payment of UI Charges

18.1. The draft regulations provided for the following schedule for payment of UI charges:

“(1) All payments for Unscheduled Interchange charges shall be made to the Unscheduled Interchange Pool Account Fund within 10 days of issue of Unscheduled Interchange account statement by the Regional Power Committee.

(2) If any payments for the Unscheduled Interchange charges are delayed by more than two days, that is to say, payments are made beyond a period of 12 days of issue of the statement by the Regional Power Committee, simple interest @0.04% for each day of delay shall be payable.

(3) All payments from the Unscheduled Interchange Pool Account Fund to the entities entitled to receive any amount shall be made within 5 days of crediting of the amount to Unscheduled Interchange Pool Account Fund.”

18.2. The comments received on the above provision have been summarised below:

- Payment security mechanism for UI charges should also be put in place.

(PXIL)

- CERC may need to review the recourse taken against entities who overdraw at lower frequencies as well as those who do not pay their UI on time. **(PXIL)**
- Suitable mechanism for dealing with the generating stations/ IPPs/ sellers should be specified in the regulations who have failed to pay the UI amount.

(PCKL)

- The constituents who have not cleared the UI dues within the stipulated time frame of three months be isolated from the CTU system. (**WBSETCL and WBSEDCL**)

18.3. The regulations provide for interest on payment of UI charges for delay beyond period of 12 days from date of issuance of the weekly UI statement. Default in timely payment of UI charges or partial payment thereof shall construe non-compliance/contravention of the regulations and shall be dealt with in accordance with the provisions under the Act.

18.4. As regards the suggestion for introduction of payment security mechanism, we feel that the issue needs further deliberations in terms of nature and form of payment security, underlying conditions for operationalising, quantum and period of such security, applicability to select participants or otherwise etc. The need and nature of payment security mechanism shall be evaluated in detail upon observing the operationalisation of the UI regulations for some time.

19. Application of Fund collected through UI

19.1. The draft regulations contained the following provisions for utilisation of UI Fund:

“(1) The amount left after final settlement of claims of Unscheduled Interchange charges of the generating station and the beneficiaries shall be utilised for both or either of the following activities:

- (a) Servicing of investment for transmission schemes of strategic importance from a long term perspective after obtaining prior approval of the Commission.*

Provided that the Central Transmission Utility in consultation with Central Electricity Authority shall identify the inter-State transmission schemes of strategic importance from a long-term perspective, without

optimum level of utilisation at present, to seek prior approval of the Commission for servicing of capital costs during the initial years from the Unscheduled Interchange Pool Fund:

Provided further that when utilisation of such transmission line or transmission system included in the transmission schemes of strategic importance reaches to the optimum level of utilisation, the cost of such transmission line or transmission system shall be recovered from the users of the transmission system in accordance with the methodology specified by the Commission.

- (b) *Providing ancillary services including but not limited to 'load following' during low grid frequency as identified by the Regional Load Despatch Centre, in accordance with the procedure prepared by the Load Despatch Centre after obtaining prior approval of the Commission to ensure grid security and safety:*

(2)The amount of fund, allocable for the purposes specified under clause (1), shall be decided by the Commission from time to time.”

19.2. A number of stakeholders have submitted their comments in this regard, which are summarised as under:

- Additional generation, as envisaged through ancillary services, can also be brought in by keeping the UI ceiling price higher than the costliest generation sources. Presently, the costlier generation cannot inject energy into the grid as the variable cost of generation is higher than the UI ceiling rate. **(PTC)**
- CTU should seek approval from the concerned RPCs for funding the transmission schemes through collections from UI fund. **(AP Transco)**
- Fund should also be utilised for emergent up-gradation and modernization of existing power stations warranted even before expiry of useful life for smooth operation. **(NEEPCO)**

- Fund should also be utilised for abnormal O&M expenses on special security for the power stations in North Eastern States where insurgent groups are active which has presently not been allowed by CERC. **(NEEPCO)**
- Proposal of UI fund utilisation for the transmission schemes for developing transmission system is not transparent and it could pose a problem in future date from its COD. **(TNEB)**
- Provision of ancillary service should be clearly specified. Conformity of ancillary services with Section 27(2) of the Act needs to be checked because the above section prohibits RLDCs to engage in the business of generation and trading of electricity. UI fund can be used for some other activities like 'Funding of R&D schemes as Power Tracing, Loss Allocation etc. **(PGCIL/RLDC/NLDC)**
- RLDC should use this fund for improving frequency profile by purchasing power from external sources including traders and merchant plants. As these purchases are for system operation control, this may not come under trading. **(Shri A. Velayutham)**
- Excess UI fund should be distributed among the beneficiaries and generators who have performed above a stipulated level in accordance with their Schedule as a part of incentive for maintaining the grid discipline. The unutilised UI fund should not be used as a tool to protect the interest of the business of any particular licensee or generating company or buyer or seller. **(WBSETCL and WBSEDCL)**

- The word 'load following' should be clearly defined in the final regulations. **(WBSETCL and WBSEDCL)**
- Surplus UI fund should be used for setting up of new generating stations so as to reduce demand-supply gap. UI mechanism by its operation is a penal mechanism. Therefore UI rate should be bifurcated into two components, i.e. notional energy component of Rs 2.00 per unit and remaining part should be treated as penalty component. The penalty amount should be collected in national pool which should be utilised for building the generation assets. **(UPPCL)**
- Ancillary services like load following can be provided through platforms like PXIL. The Commission may allocate some fund to the exchanges for such developmental activities under its guidance and approval. **(PXIL)**
- Time period for spending the unutilised UI amount should be specified. **(PCKL)**
- UI is a short term measure. Therefore the fund so created must be for short term priorities like: (a) for transmission work directly related to relieving congestion, (b) for transmission works by which power flow from surplus to deficit states can be increased (c) works by which generation constraint can be removed. **(Shri Padamjit Singh)**

19.3. We have carefully considered the suggestions. Firstly, it is clarified that the Hon'ble Supreme Court in the case of Central Power Distribution Co.& Ors vs. Central

Electricity Regulatory Commission & Anr, [(2007) 8 SCC 197] has held that “..UI charges are tariff or charges payable for deviations...”

19.4. Therefore, UI is a charge to be levied when power is drawn beyond the schedules. UI charge is not a penalty. The Supreme Court in its aforesaid judgment held that “The UI charges penalises whosoever caused grid indiscipline, whether generator (NTPC) or distributor, is subject to payment of UI charges who are not following the schedule.”

19.5. The Supreme Court in the said judgment held as under:-

“(22) The application of Availability Based Tariff and imposition of Unscheduled Interchange (UI) charges are essential part of the Functions of the Central Commission under Section 79(1)(h) of the Electricity Act, 2003 which reads “to specify Grid Code having regard to the Grid Standards, and Sub-section (2) of Section 28 read with Section 178(2)(g) dealing with the Central Commission’s powers to frame Grid Code. The maintenance of Grid discipline envisaged under the Grid Code is regulated by the mechanism of ABT and UI charges...”

..

(24) As already noticed, the Central Commission has the power and function to evolve commercial mechanism such as imposition of UI charges to regulate and discipline. It is well settled that a power to regulate includes within it the power to enforce. ..”

19.6. There cannot be any dispute that UI is a commercial mechanism to benefit the party who is adversely affected on account of indiscipline. All payments on account of UI charges levied and interest received on late payment of UI charges are to be credited to the Fund called the Unscheduled Interchange Pool Account Fund to be maintained and operated in accordance with provisions of the Grid Code. The amount left after final settlement of claims of UI charges of the generating station and the beneficiaries is proposed to be utilised for both or either of the activities stipulated in regulation 9 of the Central Electricity Regulatory Commission (Unscheduled Interchange charges and related matters) Regulations, 2009.

19.7. The Supreme Court in its above mentioned Judgment has held as under:-

“(25) In the facts and circumstances as alluded, and as per the Scheme of the Electricity Act, 2003 mentioned above, the Central Commission has the plenary power to regulate the Grid, particularly in the context of the Grid being integrated and connected across the region comprising of more than one State.”

19.8. Based on the above proposition of law laid down by the Hon'ble Supreme Court affirming the wide ambit of the regulatory powers vested in this Commission, we have no hesitation to hold that Unscheduled Interchange Pool Account Fund could be maintained and operated in accordance with the provisions of the Grid Code and the amount left after final settlement of claims of UI charges can be utilised for (i) servicing of investment for transmission schemes of strategic importance after obtaining prior approval of the Commission; and / or (ii) for providing ancillary services including but not

limited to 'load generation balancing' during low grid frequency as identified by the Regional Load Despatch Centre, in accordance with the procedure prepared by the Load Despatch Centre after obtaining prior approval of the Commission to ensure grid security and safety.

19.9. Balance of UI Charge in the Unscheduled Interchange Pool Account Fund is for undertaking activities which benefit the constituents and stakeholders of electricity sector, in multifarious ways. The Commission is fully empowered to decide the manner in which the amount left after final settlement of claims in the Unscheduled Interchange Pool Account Fund may be administered and the criteria based on which such sums are to be utilised.

19.10. The two options specified by the Commission under regulation 11 have been provided to facilitate long term development of power system. The servicing of investment in transmission schemes of strategic nature, which would have part utilisation at present, will ensure the smooth and reliable flow for benefit of system users. The ancillary services will enable the development of 'Independent System Operator' concept in India. It will empower the system operator to take all suitable measures for ensuring stability of grid operations as envisaged under the Act.

19.11. Some of the options suggested by the stakeholders are limited only to the benefits of certain State or region or entity and the fund cannot be used for such purposes.

19.12. Utilisation of UI fund for R&D measures like power tracing and loss allocation can be explored if NLDC/RLDCs/SLDCs are able to establish its appropriateness as a part of its ancillary services. The Commission recognises that the nature and scope of ancillary services are yet to evolve in Indian context. Hence, the Commission has specified for the purpose of utilisation of UI Pool Fund that ancillary services shall comprise load-generation balancing related activities to begin with. At present, the Commission has specified the broad parameters for which UI fund shall be utilised. Further, specifying the time frame for utilisation of such fund would be too early as it will take some time to develop the operational framework for utilisation of fund. Once specific schemes for utilisation are proposed for consideration, the Commission may specify the time frame for utilisation of UI fund in a time bound manner.

20. General suggestions on the Regulations

20.1. No major modification in UI mechanism is proposed which is fortunate as there is no alternative to frequency linked UI mechanism in India as of now. ***(Shri Bhanu Bhushan and IPPAI)***

20.2. The Commission is of the view that the UI mechanism will have to be responsive to address dynamic requirements of grid operations. Accordingly, the Commission has introduced several new provisions such as reducing frequency band of operation, introduction of volume caps on over-drawal and under-injection, additional UI charge, revision of UI price vector etc. in order to ensure that UI mechanism serves its major objective of ensuring 'grid discipline' while ensuring optimal cost for grid participants. Further, the Commission believes that a review of UI mechanism is desirable from time

to time to make it responsive to changing market conditions. Accordingly, a review mechanism has been enabled under the said regulations.

21. Renaming of UI Regulations

21.1. UI mechanism can be renamed to System Frequency Control (SFC), System Frequency Error (SFE) or System Frequency Error Control (SFEC) mechanism so as to give right signal to the players to plan their demand – supply balance at 50 Hz, through power purchase/sale, load shedding/demand management etc. **(Shri A. Velayutham, Member MERC).**

21.2. The Commission is of the view that currently, the operating frequency range i.e. 0.8 Hz below and 0.3 Hz above the standard frequency of 50 Hz, which is significantly higher than the international standards of frequency variation. With such high permissible variation in operating frequency range of 1.1 Hz, it can not be termed as error in system frequency control. Such terminology can be adopted in future when system frequency variation can be limited within a narrow band.

Sd/=	Sd/=	Sd/=	Sd/=
(V.S. Verma) Member	(S. Jayaraman) Member	(R. Krishnamoorthy) Member	(Dr. Pramod Deo) Chairperson
New Delhi, dated the	8 th June 2009		

Annexure - I

Name of the Stakeholders who submitted comments/ objections/ suggestions

S. No.	Name of Stakeholder
1	Athena Chattisgarh Power Pvt. Ltd.
2	Bhilwara Energy Limited
3	Chattisgarh State Power Transmission Company Limited (CSPTCL)
4	East Coast Energy Pvt. Ltd.
5	Electricity Department, Dadra and Nagar Haveli
6	Er. Padamjit Singh, Ex-CE, PSEB
7	IEX
8	IPPAI
9	Kalkitech Communications Technologies Ltd.
10	Maharashtra State Electricity Distribution Company Ltd. (MSEDCL)
11	Maharashtra State Electricity Transmission Company Ltd.
12	Malana Power Limited
13	Meenakhi ENERGY Pvt. Ltd.
14	Nayveli Lignite Corporation Limited (NLC)
15	NEEPCO
16	NTPC Limited
17	Power Company of Karnataka Limited (PCKL)
18	Power Exchange of India Limited (PXIL)
19	Power Grid Corporation of India Limited (PGCIL)
20	Prof. S. A. Khaparde
21	PTC India
22	Shri A. Velayutham, Member MERC
23	Shri Bhanu Bhushan, Ex- Member, CERC
24	Shri Mark B. Lively, Utility Economic Engineer
25	Shri Prabuddha Banarjee, TCS
26	Southern Regional Power Committee (SRPC)
27	Spice Energy Pvt. Ltd.
28	Tamil Nadu Electricity Board (TNEB)
29	Tata Power Trading Company Limited (TPTCL)
30	Transmission Corporation of Andhra Pradesh Limited (AP Transco)
31	U.P. Power Corporation Limited (UPPCL)
32	Vandana Vidyut Limited
33	West Bengal State Electricity Distribution Company Limited (WBSETCL)
34	West Bengal State Electricity Transmission Company Limited (WBSEDCL)