

**Central Electricity Regulatory Commission  
New Delhi**

Coram:

1. **Shri Ashok Basu, Chairperson**
2. **Shri K.N.Sinha, Member**
3. **Shri Bhanu Bhushan, Member**
4. **Shri A.H.Jung, Member**

**Petition No. 67/2003  
(Suo motu)**

**In the matter of**

Terms and conditions for determination of tariff for the period 1.4.2004 to 31.3.2009.

**And in the matter of**

National Thermal Power Corporation Ltd

....**Respondent**

**Petition No. 90/2005**

**In the matter of**

Miscellaneous petition for gaming by the generators by generating more than the 1% of the declared capacity on a regular basis from 1.4.2004.

**And in the matter of**

Tamilnadu State Electricity Board, Chennai ....**Petitioner**

**Vs**

1. Southern Regional Load Despatch Centre, Bangalore
2. Member Secretary, SREB, Bangalore
3. Executive Director, NTPC, Secunderabad
4. Neyveli Lignite Corporation, Neyveli
5. Transmission Corporation of Andhra Pradesh Ltd., Hyderabad
6. Karnataka Power Transmission Corporation Ltd, Bangalore
7. Kerala State Electricity Board, Thiruvananthapuram
8. Electricity Department, Govt. of Pondicherry, Pondicherry .....**Respondents**

**The following were present:**

1. Shri V.B.K. Jain., NTPC
2. Shri I.J. Kapoor, NTPC
3. Shri C.S. Srivinas, NTPC
4. Shri K.P. Demudu, NTPC
5. Shri M. Ash, NTPC
6. Shri R. Mazumdar, NTPC
7. Shri P.P. Francis, NTPC
8. Shri S. Nath, NTPC
9. Ms Pranav Kapoor, NTPC

10. Shri D.G. Salpekar, NTPC
11. Shri P.C. Pankaj, GM(Comml.), PGCIL
12. Shri C. Kannan, PGCIL
13. Shri U.K. Tyagi, PGCIL
14. Shri J. Mazumdar, PGCIL
15. Shri M.M. Mondal, PGCIL
16. Shri A.K. Nagpal, PGCIL
17. Shri Rakesh Prasad, PTCIL
18. Shri L.K. Kanungo, PGCIL
19. Shri R. Suresh, DGM(Comml.), NLC
20. Shri S. Sowmyanarayanan, TNEB
21. Shri R. Krishnaswami, AAP/MP, TNEB
22. Shri K. Srinivasa Rao, SREB
23. Shri D. Krishna Rao, SRLDC
24. Shri V.K. Aggarwal, SRLDC
25. Shri T. Sreenivas, SRLDC
26. Shri T.P.S Bawa, PSEB

**ORDER**  
**(DATE OF HEARING: 6.12.2005)**

Clause (2) of Regulation 24 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (the 2004 regulations) applicable for the period 2004-09 provides as under:

**“ 24. *Unscheduled Interchange Charges:* (1)XXXXXX.....**

**(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 Regional Load Despatch Centre shall investigate so as to ensure that there is no gaming, and if gaming is found by the Regional 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.***”

2. It came to the notice of the Commission that in case of Ramagundam Super Thermal Power Station (Ramagundam STPS) owned by National Thermal Power Corporation Ltd (NTPC), the actual generation was more than its declared capacity. In this context, data for the month of March, 2005 was analysed and it was found that during this period, the actual generation at Ramagundam STPS was more than the declared capacity by 1% to 1.8% for 22 days during that month. Therefore, by order dated 13.7.2005, NTPC was directed to explain the reasons for generating electricity over and above the declared capacity more or less on regular basis. NTPC was also directed to explain why over-generation should not be construed as gaming and UI charges reduced to zero.

3. Meanwhile, a petition (No. 90/2005) was filed by Tamil Nadu Electricity Board (TNEB) for limiting the generation of the central generating stations (CGS) within 101% of their Declared Capacity (DC). TNEB has stated that the generators, namely NTPC (Ramagundam STPS and Talcher STPS) and NLC (TPS-II and TPS-I Expansion) have exceeded the ceiling of 1% over the average DC on the day as a routine. TNEB has furnished details of incidents between 28.2.2005 to 24.4.2005 when, according to TNEB, the limits prescribed for each time block and for a day, were exceeded. A summary of the details furnished by TNEB is tabulated below:

**Number of time block and days for which prescribed limit was exceeded**

Week	RSTPS		NCL-II (ST-I)		NLC -II (St-II)		NLC-I Expansion		Talcher TPS	
	Blocks	Days	Blocks	Days	Blocks	Days	Blocks	Days	Blocks	Days
28.02.05 to 06.03.05	-	-	-	-	1	0	2	2	5	6
07.03.05 to 13.03.05	1	3	1	0	0	0	0	1	6	5
14.03.05 to 20.03.05	0	3	0	1	0	1	0	0	10	6
21.03.05 to 27.03.05	0	7	4	0	1	0	0	2	15	4
28.03.05 to 03.04.05	0	3	0	0	0	0	23	3	12	7
04.04.05 to 10.04.05	0	5	0	0	0	0	88	4	8	6
11.04.05 to 17.04.05	0	5	0	0	0	0	29	2	4	6
18.04.05 to 24.04.05	2	6	3	1	0	0	9	2	19	6

4. TNEB has also furnished daily details of DC, Scheduled Generation (SG), Actual Generation (AG) and difference between AG and SG for the period 1.4.2004 to 31.5.2005. TNEB has stated that the variation is always on positive side. At the time of finalisation of the terms and conditions of tariff, the generating companies had stated that actual generation cannot be regulated so precisely as to always maintain it equal to DC. According to TNEB, if this was the case, on some occasions AG should have been below DC.

5. According to TNEB, SRLDC has not done any effort to check whether generation beyond the limits is due to gaming. The petitioner has pointed out that SREB has also not restricted excess generation to the limit prescribed in Clause (2) of Regulation 24 and has permitted UI charges for entire excess generation. This, according to TNEB, has resulted in huge payment of Rs.118.4 Crore from 1.4.2004 at an average rate of Rs.2/KWh. TNEB has argued that the generator is

able to load machine by more than 101% on regular basis, the declaration of the capacity should not be constrained by the name plate capacity. TNEB has prayed that entire generation above DC should be disallowed for application of UI charges. However, if this is not acceptable, actual generation should be restricted as per limits prescribed in Regulation 24(2), that is, 105% of DC in a time block of 15 minutes and 101% of DC in a day for calculation of UI charges. TNEB has further prayed that SRLDC be directed to investigate the excess generation for possibility of gaming and if gaming is detected penalty may be levied.

6. Southern Regional Load Despatch Centre (SRLDC) has stated that the number of instances on which the limit prescribed in the Regulation 24(2) were violated are much less than pointed out by TNEB. It has also stated that on some occasions, Actual Generation (AG) is less than DC. SRLDC is of the opinion that AG is not more than 101% of DC as a routine. SRLDC has termed as grossly incorrect statement of TNEB to the effect that SRLDC has not taken any action to check whether the excess generation is on account of gaming. SRLDC has stated that this issue was deliberated several times by SRLDC in OCC meetings. SRLDC has claimed that it is only due to its efforts that since December 2004, Ramagundam STPS has started declaring DC higher than normative capacity by 30-60 MW. This has resulted in availability of extra power to the constituents in Southern Region. SRLDC has stated that on many occasions, TNEB had indulged in over-drawal when frequency was below 49 Hz. It has also stated that this issue was never raised by TNEB in OCC meetings or otherwise. Southern

Regional Electricity Board (SREB) has stated that as per Regulation 24, only if gaming is found by RLDC, UI charges are to be adjusted. Since SRLDC has not informed about incidence of gaming by any of the generators, no adjustment was carried out.

7. National Thermal Power Corporation Ltd (NTPC) has contended that the 2004 regulations do not provide for outright rejection of generation outside the prescribed limit for settlement of UI account. It only requires RLDCs to investigate for possibility of gaming in such cases. According to NTPC, on no occasion did SRLDC find any reason to suspect gaming and as such no instance of gaming has been reported. UI accounts were settled accordingly. NTPC has stated that the data submitted by TNEB shows generation in excess of Scheduled Generation (SG), where as regulation requires comparison of AG with DC. NTPC has contended that DC declared by a generator is an estimate of its best ability and this capacity can be delivered on sustained basis as long as there is no contingency. According to NTPC, IEGC mandates the generators to maximize generation when frequency is below 50 Hz. NTPC has submitted monthly pattern of frequency and excess generation ( over DC) to establish its claim that excess generation was only during low frequency periods. NTPC has stated that UI accounts are issued by REB on weekly basis and as per IEGC, 20 days time is available to parties for verification of the same. No dispute was ever raised by petitioner during the allowed time.

8. Neyveli Lignite Corporation Ltd (NLC) has submitted that deviations beyond limit occur only when there is constraint in power generation either due to partial load operation or due to sudden variation in lignite quality, ramping up/down of unit generation during lighting up/shut down of units etc. According to NLC, SRLDC is scrupulously monitoring the excess generation for all the Central sector generating stations in the region and reasons for the variation, if any, are furnished by the concerned generating companies as called for by SRLDC. NLC has stated that TNEB has calculated excess generation with reference to SG instead of DC.

9. Andhra Pradesh Power Co-ordination Committee (APPCC) has stated that allowing UI charges for excess generation is not fair but has also suggested that energy charges for excess generation should be reimbursed to generators. Kerala State Electricity Board (KSEB) has supported the contention of TNEB. It has stated that the issue was raised by KSEB in the 135<sup>th</sup> SREB meeting and 113<sup>th</sup> TCC meeting and even though SRLDC had stated that it had not found gaming, the incidences of excess generation were continuing.

10. The case was first heard on 6.10.2005. After hearing the parties, vide order dated 19.10.2005, SRLDC was directed to conduct an inquiry with a view to verifying the details of Declared Capacity (DC) Vs. Actual Generation (AG) in respect of the generating stations belonging to NTPC and NLC, named by TNEB, during the period 28.2.2005 to 24.4.2005 and submit a report to the Commission

and whether it involved gaming by the generating companies concerned. While conducting the enquiry, SRLDC could associate the utilities concerned for proper appreciation of the facts.

### Report submitted by SRLDC

11. SRLDC submitted its report on 9.11.2005 after holding a meeting with all concerned utilities on 7.11.2005. The report contains following summary of the DC and AG during the period 28.2.2005 to 24.4.2005.

#### Range and average of daily AG over DC (28.2.05 to 24.4.05)

Station	RSTPS (UNITS 1-6)	TALCHER STPS (STAGE 2)	NLC STPS II (STAGE 1)	NLC STPS II (STAGE 2)	NLC STPS I (EXPANSION)
Range of AG over DC	98.66-101.78	99.59-101.42	99.27-101.05	97.69-101.05	95.13-102.81
Average Generation (AG) over DC	101.00	101.01	100.73	100.33	100.67

#### No. of blocks when the generation level was more than 105% of DC (out of 5376 blocks)

Station	RSTPS (UNITS 1-6)	TALCHER STPS (STAGE 2)	NLC STPS II (STAGE 1)	NLC STPS II (STAGE 2)	NLC STPS I (EXPANSION)
No. of blocks when AG>DC by more than 105%	3 (0.06%)	79 (1.47%)	8 (0.15%)	2 (0.04%)	161 (2.99%)

#### No. of days when the generation level was more than 101% of DC (out of 56 number of days)

Station	RSTPS (UNIT 1-6)	TALCHER STPS (STAGE 2)	NLC STPS II (STAGE 1)	NLC STPS II (STAGE 2)	NLC STPS I (EXPANSION)
No. of days when AG>DC by 101%	37 (66.07%)	47 (83.93%)	2 (3.57%)	2 (1.79%)	16 (28.57%)

12. SRLDC has drawn following inferences from the above summary tables:

- (a) During the whole period the generation level has not remained constant and the value of AG over DC has varied on either side of 100%, that is, on positive side as well as the negative side.



- (b) At the various NTPC and NLC generating stations, the instances when AG during 15 minute blocks was more than 105% DC do not appear to be consistent and repetitive in nature and have been observed generally at the time of ramping up/ramping down of the generation. At different generating stations, the total number of such instances have varied in the range of 0.04 % to 2.99% only.
- (c) At Ramagundam STPS and Talcher STPS Stage II of NTPC for 66% and 84% of the days respectively AG was more than 101% of DC.
- (d) At TPS-II (Stage-I), TPS-II (Stage-II) and TPS-I (Expansion) of NLC, the number of days when AG has exceeded 101% of DC is around 2%, 4% and 29% respectively.

13. SRLDC has stated that after removal of the condition - "the DC shall not exceed the installed capacity", there has been significant enhancement in DC by the generating stations of NTPC namely, Ramagundam and Talcher. Summary of such extra power and energy available has been given by SRLDC for Ramagundam STPS as tabulated hereunder:

**Declaration of DC and extra available energy to constituents (Ramagundam STPS)**

MONTH	AVERAGE NORMATIVE DC(IN MW)	AVERAGE ACTUAL DC (IN MW)	AVERAGE ADDITIONAL DC (IN MW)	MAX. ADDITIONAL DC(IN MW)	EXTRA AVAILABLE ENERGY TO CONSTITUENTS
Dec-04	1817.87	1823.46	6	30	4.163
Jan-05	1934.00	1976.59	43	76	31.689
Feb-05	1934.00	1984.60	51	76	34.001
Mar-05	1922.23	1983.50	61	76	45.591
Apr-05	1878.49	1910.26	32	56	22.873
May-05	1895.89	1937.95	42	76	31.287
Jun-05	1878.05	1914.04	36	76	25.918

14. On the issue of under-declaration by generating stations, SRLDC has put forward following points:

(a) SRLDC regularly monitors DC vis-à-vis AG and immediately takes up the matter with concerned central sector generating stations whenever any gaps are observed. It was due to such rational efforts of SRLDC that the central sector generating stations in Southern Region have started declaring DC higher than normative value (Installed capacity – Normative Auxiliary Consumption), thereby tapping the hidden generation capacity of around 100 MW.

(b) Section 29 (1) of the Electricity Act, 2003 entrusts RLDCs with the responsibility of achieving overall economy and efficiency in the region. Any extra generation harnessed particularly at pithead generating stations results in substantial saving by way of backing down of equivalent generation at costlier stations.

(c) During the said period frequency profile was as under:

Below 49.5 Hz:	11.53%
Below 50.0 Hz	91.12%
From 49.0 to 50.0 Hz	99.84%

Since most of the time frequency was below 50.0 Hz, the extra generation at pithead generating stations was a desirable step.

(d) In order to maintain AG within 101% of DC, the generator will be required to continuously monitor the variation and shall have to

immediately request SRLDC for effecting the revision in DC. In a meeting held on 7.11.2005 with the constituents of Southern Region, the generators had expressed practical difficulties in revising the schedule frequently. As SRLDC has also expressed, since the process of revision is complex and involves a chain reaction with large number of ISGS and beneficiaries in the region it would be difficult to revise DC frequently.

15. SRLDC has drawn the following conclusions based on analysis of data for the period 28.2.2005 to 24.4.2005:

- (i) Harnessing of any additional generation capacity by way of declaration of higher DC beyond normative DC (Gross capacity on bar – Normative Auxiliary Consumption) is beneficial and hence must be encouraged.
- (ii) Extra generation carried out by the generating stations does not come under the category of wilful under-declaration in view of the following:
  - There has been consistent enhancement in the availability in the grid leading to economy and efficiency.
  - In real time, frequent revisions of DC to make it closer to actual generation may not be practical.

### **Conclusions**

16. First of all, we would like to deal with the issue raised by respondents that TNEB had wrongly compared AG with SG instead of DC, in an attempt to establish gaming. Responding to this, TNEB has stated that Clause (1) of

Regulation 24 of the 2004 regulations stipulates that the generator shall be entitled to UI charges for excess generation above SG and hence a comparison has to be made with AG. In our opinion, while UI has to be calculated by comparing AG with SG, the condition under which RLDC is required to investigate possibility of gaming is when AG is above 105% of DC for a time block and AG is above 101% of DC over a day. From this consideration, we note that the data submitted by TNEB from page 42 to page 83 suffers from the defect that "Excess %" has been calculated by comparing AG with SG. However, the data submitted by TNEB from page 20 to page 27 of the petition for the period 28.2.2005 to 24.4.2005 is correct from this view point. It is for this reason that we had directed SRLDC to investigate the possibility of gaming for the above mentioned period.

17. It is to be recalled that terms and conditions of tariff for the period 2001-04 provided that DC shall not exceed Installed Capacity. This was effectively restricting DC to Installed Capacity minus Normative Auxiliary Consumption, although many a time it was possible for the generating station to generate more than this level. This was depriving grid from additional generation which could readily be made available but was not being harnessed. To correct the situation, the Commission removed this restriction in the 2004 regulations. Further, in order to safeguard against gaming by way of deliberately under-declaring DC with the intention of earning UI, Clause (2) of Regulation 24 was introduced. SRLDC has emphasized that the above mentioned changes in terms and conditions of tariff

have succeeded in bringing additional generation to the grid both by way of additional DC (over and above Installed Capacity minus Normative Auxiliary Consumption) as well as by way of UI (generation above DC). SRLDC is of the view that in order to maintain AG closer to DC, the generating station will have to constantly track AG and revise DC very often to keep AG within limits prescribed with reference to DC. Generally, we agree that the generating station should constantly track its generation vis-à-vis DC but we feel that it may not be necessary to re-declare DC several times a day. In the absence of any forced outage (full or partial) of one or more unit(s) the limited variation in AG can occur mainly due to change in quality of fuel or weather conditions, factors which do not vary often. Therefore, based on AG level over a day, it should be possible to estimate with fair degree of accuracy, generation capability for the next day, which should form basis for declaring DC. We are also of the opinion that a realistic original declaration itself would be sufficient on most days to keep AG within prescribed limit of DC.

18. At this stage, we find that there is no clear evidence to come to a definite conclusion that the central sector generating stations in Southern Region have resorted to gaming, particularly as it has been explained by SRLDC that it has been successfully persuading the generating stations to progressively enhance their DC with reference to Installed Capacity minus Normative Auxiliary Consumption. This indicates that these generating stations were perhaps conservative and cautious in declaring DC, the main consideration for which

might have been minimization of the probability of incurring UI liability (AG going below DC) even if it enhances probability of AG going beyond prescribed limit. We are sure that the learning phase on declaration of the capacity is over by now. In future, SRLDC should, in letter and spirit, act in accordance with Regulation 24 of the 2004 regulations and if gaming is found, UI charges should be made zero as per stipulation.

19. With this, the proceeding initiated by order dated 13.7.2005 in Petition No. 67/2003 (suo motu) are hereby dropped and also Petition No.90/2005 stand disposed of with no order as to costs.

Sd/-  
**(A.H. JUNG)**  
**MEMBER**

Sd/-  
**(BHANU BHUSHAN)**  
**MEMBER**

Sd/-  
**(K.N. SINHA)**  
**MEMBER**

Sd/-  
**(ASHOK BASU)**  
**CHAIRPERSON**

New Delhi dated the 9<sup>th</sup> May, 2006