

**Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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CASE NO. 30 of 2003

**In the matter of
Drawal of power by TPC from MSEB, and compliance of TPC Tariff Order
dated 11.06.2004.**

**Dr. Pramod Deo, Member
Shri. A. Velayutham, Member**

ORDER

Dated: **7th December, 2004**

In their Application dated 20th November, 2004 citing for compliance the Commission's Order dated 11th June, 2004 (in respect of the tariff of the Tata Power Company-TPC), the Maharashtra State Electricity Board (MSEB) have prayed as follows:

"The critical power position of the State may be taken into consideration and suitable directions may be issued to Tata Power Co. regarding (1) not to over draw power from MSEB and (2) to manage their requirement through power purchase from alternate sources."

2. In their Application, MSEB have stated that TPC have been drawing power to the tune of 100 to 200 MW from MSEB from 10 a.m. to 6 p.m. in June 2004. On 29th June, 2004 when MSEB were over drawing 300 to 400 MW from the Central Sector, the simultaneous drawal of TPC from MSEB was about 200 MW. The Load Despatch Centre (LDC), MSEB, Kalwa requested TPC to avoid drawal from MSEB in the acute crisis condition which they were facing. However, this was not heeded by TPC, who contended that their Unit 4 at Trombay remains withdrawn in pursuance of the Commission's Order dated 1st June, 2004 (operative part of Tariff Order).

3. MSEB have stated that on 13th July, 2004 they again asked TPC to ensure that power drawal by TPC from MSEB in the present critical condition should be with prior intimation and the consent of their LDC. In another communication on the same day, TPC were told that in normal conditions TPC were expected to meet the demand by their own generation and maintain zero exchange with MSEB. TPC were also requested to avoid drawal from MSEB system and to take up with the Commission the matter of restriction on the operation of their Unit 4.

4. According to MSEB's Application, the matter was pursued with TPC vide letter dated 31st July, 2004 in view of the fact that the detailed Tariff Order dated 11th June, 2004 in respect of TPC stipulates as follows:



- i) That power be generated and purchased strictly following the Merit Order Dispatch philosophy and maintaining system stability (page 96).
- ii) While restricting the operation of Unit 4, the Commission has directed TPC to enter into an alternative arrangement to purchase power during peak hours so as to ensure that load shedding is not required and that it would be economical to buy a part of quantity at higher rate rather than operating Unit 4 as a base load station (page 111-112).
- iii) That the Commission may consider permitting additional cost of purchase of power during peak hours for meeting energy requirement of Licence Area operations arising out of shut down of Unit 4 (page 115).

MSEB have submitted that, in spite of this, TPC continue to draw as much power as required from MSEB even during peak period. On 23rd October, 2004, TPC drew 500 MW from the MSEB system at a time when MSEB were over drawing 200 MW power from the Central Sector Grid. Due to transmission constraints, MSEB were instructed by WRLDC to restrict over drawal. In this circumstance, MSEB carried out load shedding in the MSEB area and asked TPC to restrict their drawal, which was 547 MW excluding the MSEB load in the TPC system. However, TPC carried out load shedding for the MSEB load in the TPC system. MSEB have enclosed a daily statement indicating hourly net exchange between TPC and MSEB and the drawal by MSEB from Central Sector from 1st October, 2004 to 17th November, 2004.

5. According to the Application, MSEB once again tried to impress upon TPC vide letter dated 9th November, 2004 of the consequences of excessive drawal from MSEB during morning and evening peak due to which the acute shortage of MSEB is worsened at a time when the system demand is at its peak.

6. MSEB have submitted that they have not been able to meet their own demand even on purchase of power through traders, due to non-availability of transmission corridor. Under these circumstances, MSEB end up drawing Unscheduled Interchange (UI) and simultaneously carrying out extra load shedding in the State, even as TPC are drawing from MSEB. The load sheddings by MSEB have created tremendous unrest in the State, leading to agitations. Hence, TPC were advised to take on their Unit 4 to fulfill their requirement during peak period. MSEB had even offered to purchase power from TPC's Unit 4 during off peak hours at the Commission's rate, under their letter dated 9th November, 2004. TPC were also cautioned that unless they took immediate action to stop drawing power from MSEB in the evening peak, MSEB would be constrained to cut-off supply to TPC.

7. MSEB have urged the Commission to consider the above position in the light of the critical power position of the State which is on the verge of a major grid collapse, and to issue suitable directions to TPC. They have pointed out that unrestricted drawal of power by TPC to meet the normal load in their system contravenes the provisions of the Commission's Tariff Order dated 11th June, 2004 in respect of TPC. MSEB have also clarified that such unrestricted drawal of power by TPC in normal conditions (i.e. not during an emergency) is not within the purview of the Standby facility. Hence MSEB's prayers set out above.

8. Separately, under letter dated 18th November, 2004 addressed to the Commission, TPC referred to the letter received from MSEB asking them to refrain from drawing power during peak periods and that MSEB may be constrained to cut off power supply to TPC if the drawal continues. TPC have stated that, in its Tariff Order dated 11th June, 2004, the Commission directed TPC to arrange for peak power purchase from other sources in order to avoid load shedding in Mumbai. However, since generation capacity is not available in the Western region,



the power has to be brought from other regions requiring transfer through inter-regional transmission links, and there is no spare capacity for bulk transfer on these corridors. In their letter, TPC have further stated that they have been meeting peak power requirements by purchase from MSEB as envisaged in the Tariff Order, or else they would have to shed load in Mumbai during the festival season. TPC had a meeting with MSEB wherein it was advised to start Unit 4 to meet TPC's peak requirement. MSEB also agreed to purchase power from Unit 4 during off-peak period at the actual generation cost. TPC have agreed to keep Unit 4 on bus bar subject to the Commission's approval. TPC have also stated that Mumbai's load demand is expected to fall once the temperature drops during winter, and sought the Commission's approval to continue operation of Unit 4 until the Mumbai peak requirement drops or MSEB are not in a position to supply power during the peak period.

9. In a further letter dated 2nd December, 2004, TPC have added that Reliance Energy Ltd. (REL) have taken out their 250 MW Dahanu Unit No. 2 from 23rd November, 2004 for annual overhaul, etc. upto 15th December, 2004. TPC have stated further that they are presently supplying 350 MW to REL, of which 130 MW is being supplied from Unit No. 4, citing MSEB's request to TPC not to draw any power from them due to the critical power supply position in the State. In these circumstances, in view of the fact that the Commission in its Tariff Order had indicated that TPC should utilize Unit 4 only when any of their own 500 MW units is shut down for a considerable period, TPC have asked the Commission to permit them to operate Unit 4 till REL's Dahanu unit is synchronized.

10. The matter was heard on 6th December, 2004. Shri C.G. Barbole, CE (LD), Shri C.B. Bagal, CE (TRC) and other MSEB representatives stated that from 18th June, 2004, TPC started drawing power from the grid at a time when MSEB themselves were short of power and overdrawing from the Central Grid. Therefore, MSEB asked TPC not to draw power from them, at least during peak hours. However, TPC could not curtail drawal from MSEB in spite of repeated requests. The drawal was reduced in September and October, 2004 but from 16th November, 2004 the problem arose again and MSEB, therefore, approached the Commission.

11. MSEB representatives submitted that TPC can draw power from MSEB whenever there is a problem in the system, but this cannot be done on a sustained basis in the normal course. The standby arrangement provides for drawal upto nearly 550 MVA only during emergency. MSEB and TPC are connected at the EHV level at eighteen 22 KV points. It has been agreed that the net exchange between them must be maintained at zero level. The normal demands of REL and TPC are to be fulfilled through their own generation and other arrangements. However, from 18th June, 2004, drawal was made from MSEB on a continuous basis even in normal conditions. They submitted that the critical hours for them were between 5 to 9 p.m., but that whenever TPC had surplus infirm power, there are arrangements for MSEB to take it.

12. Referring to certain letters sent by MSEB to TPC in November, 2004 and also the statements made in their Application, the Commission asked MSEB whether they were in a position to give a commitment with regard to the quantum and duration of power sought by them from TPC. MSEB representative submitted that, although the letter referred to was for the Diwali period, TPC should first restrict their drawals so that the net exchange is maintained at the zero level. Beyond that, MSEB would require upto 200 MW around the clock power from TPC at the Commission's pooled rate upto 15th January, 2005 in the first instance.



13. Shri S. Ramkrishnan, Executive Director and Shri J.D. Kulkarni, Asst General Manager, TPC submitted that there was an agreement for TPC to draw power from MSEB upto a certain quantum. After using their own generation, TPC's additional requirement is to be met by MSEB in order to provide security to Mumbai. As they had separately informed the Commission, inspite of the Tariff Order provisions and because of MSEB's demand, TPC had run Unit 4 during Diwali, and is doing so now that the REL Dahanu unit is down. They submitted that the issue here is one of who will bear the additional cost since the Unit 4 rate will be higher. TPC representatives also submitted that, rather than the pooled rate as was being considered earlier, the Tariff Order envisages pricing on an incremental cost basis. The exact rates can be worked out once the principle is accepted. However, MSEB representatives submitted that segregation of rates between Unit 4 and other generation and the accounting on that basis would be difficult. According to MSEB, the rate stipulated by the Commission in the TPC Tariff Order (viz. Rs 2.30 per kWh during the period from 10 p.m. to 6 a.m. and Rs 2.55 per kWh at other times) should be applicable. TPC representatives responded that this was not justified since Unit 4 would be operated exclusively for MSEB's requirement, Unit 4 power could be supplied at its variable cost of generation, and power from other units at the rates laid down in the Tariff Order.

14. The Commission presumes that the recommissioning of Unit 4 during Diwali session at the instance of MSEB was within the scope detailed in Commission's tariff Order and the subsequent Order dated 17th September, 2004. The Commission observed that the Tariff Order states that TPC should not back down other units 5 and 6. However, if Unit 4 is run for sale to others, it would be a win-win situation for all the parties. The details could be worked out upto 15th January, 2004 and the situation reviewed and continued thereafter if appropriate. MSEB representatives submitted that even if Unit 4 is not run for any reason, TPC should not draw from MSEB when MSEB themselves are in shortfall. The Commission also drew attention to the provisions in the Tariff Order that the additional cost of purchase of power by TPC during peak hours arising out of shut down of Unit 4 could be considered through FAC mechanism. Thus, in case merit order principles are satisfied and certain other conditions are met, then Unit 4 can also be operated. The Commission observed further that the principles laid down in the Tariff Order cannot be violated while considering whether to run Unit 4 since there are important cost implications to consumers of TPC which had been considered in the Tariff Order. MSEB representatives submitted that, although they require 200 MW from TPC as stated earlier, they would require to check up the commercials since the cost factor was also of concern to them. TPC should be asked to inform MSEB as to the quantum that can be supplied and, thereafter, the commercials and other details could be worked out within a week, but within the Commission's rates

15. TPC representatives responded that the only issue seems to be that of rate of power purchase. Running Unit 4 involves a higher cost because of more expensive fuel. MSEB representative pointed out that it seems that Unit 4 is in fact always required, since the hourly data shows that it needs to be run even if Merit Order Despatch principles are followed. The Commission observed that if Unit 4 is being run anyway according to these principles, then the pooled cost is relevant. TPC submitted that this would be so during off-peak only. TPC representatives also submitted that normally Unit 4 is not required, but is being run at present because of non-availability of 250 MW from REL upto mid December, 2004. TPC's assertion that they were not drawing power from MSEB as of today was denied by MSEB's representatives, who stated that during the last 2 or 3 days drawal was between 42 to 131 MW during peak.



16. The Commission observed that it is implicit in the Tariff Order and in keeping with its spirit that Unit 4 can also be run when REL's unit is shut down. MSEB and TPC must work out a commercial arrangement and come to the Commission only if they cannot arrive at a solution. Further, TPC should not draw from MSEB during peak hours and noted that, in any case, they are running Unit 4. To a query from TPC's representatives, the Commission responded that MSEB are also saying that there should be no drawal in the normal circumstances, but a situation of emergency is a different matter. TPC representatives submitted that once REL's unit supplies power again from 15th December, 2004, TPC would be in a position to shut off Unit 4 and not draw from MSEB except in exigencies. The Commission suggested that the general agreement between MSEB and TPC may also be revisited separately.

17. MSEB representatives submitted that it takes a long time to start up Unit 4. The Commission observed that this cannot be an argument for operating Unit 4 all the time since that would depend on the cost. The Commission stated that a mutually agreed decision with regard to the details of the immediate arrangement should be taken within a week considering the limitations on the Western grid, U.I. charges payable by MSEB, etc.

18. TPC representatives submitted that their understanding of the existing agreement with MSEB is that drawal is possible even in normal conditions. However, this could be separately examined and, while reserving their rights, in view of the expected loads etc. upto 15th January, 2004, TPC may not require normal drawal from MSEB.

19. Shri Subodh Shah, Director, REL who was permitted to speak, submitted that REL were not a party to the case but wanted to make some points since they had been mentioned. He submitted that, according to the Tariff Order, Unit 4 is to run only when Units 5 and 6 are down, and does not say that this can be done when REL's unit is down. Instead, when there is a shut down of a REL unit, TPC have to take power through the standby arrangement from MSEB. REL cannot pay a higher amount arising from running Unit 4 in such cases, and drew attention to the computation of costs in the Tariff Order. Shri Shah also submitted that there is a provision in the Tariff Order for purchase of power by TPC for Mumbai rather than running Unit 4.

20. The Commission recalls that, earlier, TPC had filed a Petition dated 26th July, 2004 seeking review of the Commission's Tariff Orders with regard, inter alia, to Unit 4. The Review Petition stated that the Commission's directives to stop the operations of TPC's Trombay Unit 4, except during outage of Units 5 and 6, saves fuel expenses to a certain extent, and that TPC had already been doing so whenever demand is slack. However, Unit 4 needs to be available for about 150 days during the year, including the time when Reliance Energy Ltd. (REL)'s unit is out, and should generate 500 MUs which cannot be produced by Units 5 and 6 because of demand variations. The Commission had allowed purchase of only 61 MUs based on the monthly energy requirement. However, if the requirement is calculated on hourly MW basis, this purchase quantum is not sufficient if Unit 4 is not available. Therefore, TPC had asked the Commission to reconsider the restriction on generation of Unit 4 to 112 MUs. TPC's Review Petition further stated that Unit 4 provides generation support to the TPC system during peak hours. In the absence of Unit 4, if the MSEB system collapses during peak hours, the islanding system may not be effective in arresting the collapse of the TPC grid in Mumbai. According to TPC, the Commission's stipulation that only upto 61 MU may be purchased from MSEB, and that TPC should not carry out any load shedding inspite of shutting down of Unit 4 is not practicable since MSEB may not be able to supply during peak hours when they are already carrying out load shedding of about 2000 MW daily throughout the State. In this regard, TPC had referred to the communication from MSEB asking them to reduce drawal and bring Unit 4 back online. The Review Petition further stated that the cost of additional generation as a result of



TPC's proposal would be only around Rs.10 crores, and the fuel cost would be 0.61% of the total fuel cost. This is insignificant compared to the risk to reliability and stability of the TPC grid and deprivation of MSEB consumers during peak hours. In their Review Petition dated 26th July, 2004, TPC had also stated that Unit 4 requires around 48 hours to attain full load, which would be problematic during emergency periods. Moreover, since the energy balance is reworked by the Commission by shutting down Unit 4 and correspondingly increasing allocation of the balance units, an error has occurred in the estimation of power purchase.

21. In its Order dated 17th September, 2004 on TPC's Review Petition, the Commission had observed that, as regards TPC's reference to higher purchase from MSEB being required in case of shut down of Unit 4, and its linkage with grid stability under emergency conditions, the Commission had not restricted the source of power purchase to only MSEB. The Commission had pointed out that, in fact, at various places the Tariff Order clearly states the following:

- *"The Commission directs TPC to enter into an alternative arrangement to purchase power during peak hours so as to ensure that load shedding is not required.*
- *The Commission may consider permitting additional cost of purchase of power during peak hours for meeting energy requirement of License Area operations arising of shutdown of Unit 4, through the FAC mechanism, based on evidence submitted by TPC to substantiate its claims.*
- *It would be economical to buy part of quantity at higher rate rather than operating Unit 4 as a base load Station.*
- *TPC may explore the option of selling electricity generated using Unit 4 to MSEB and other States, in such a manner that there is no additional burden on consumers of the License Area."*

The Commission also pointed out that, at page 112 of the Tariff Order, it had noted:

"the approval of Ministry of Power for installation of a second 500 MW set Unit No. 6 at Trombay Thermal Power Station states that 'the proposed Unit has been approved in replacement of Units 1 to 4 (3 X 62.5MW + 1 X 150 MW). As soon as the proposed Unit (6th Unit) comes into operation, the existing three units amounting to 187.5 MW capacity would be scrapped without fail. The fourth Unit of 150 MW capacity would be relegated to standby duty and operated to meet peaking requirements only when surplus gas is available for its operation."

22. After considering the various submissions made and the deliberations at the hearing, the Commission is of the view that its observations in the Tariff Order regarding TPC's Unit 4 are still valid, but require further elaboration in the present circumstances of demand and supply and MSEB's Application. It is clear that the Commission has never prevented TPC from selling the power generated by operating Unit 4 to MSEB or other States. The rate for this sale of power has to be commercially agreed between TPC and MSEB/ other States such that there is no additional burden on TPC consumers. In the earlier context, at the time of the Tariff Order, any generation from Unit 4 would have required backing down of the relatively more efficient Unit 5 and Unit 6, thereby burdening TPC's consumers. However, if MSEB agree to buy power from Unit 4 throughout the day to the extent available, at least until January 15, 2005, operation of Unit 4 would not result in backing down of the more efficient TPC Units which are ranked higher in the merit order. This will ensure that TPC's consumers are not burdened on account of Unit 4 operations, and will also enable MSEB to mitigate their power shortage.



23. The specific rate and arrangements for such power purchase by MSEB from TPC should be mutually discussed and agreed between MSEB and TPC within the next 7 days keeping in view the principles in the Tariff Order. Thus, the variable cost of generation would be computed on the basis of the performance parameters set out in Section 20 of the Tariff Order, viz. SHR of 2574 kcal/kWh, and auxiliary consumption at 7.8 %. MSEB should compensate TPC for the variable cost of generation of Unit 4 for the corresponding drawal, which should be recorded separately for accounting purposes. For the balance energy supplied by TPC through generation from other Units, the rates specified by the Commission in the Tariff Order, viz. Rs. 2.30 per kWh during 22:00 to 06:00 hours and Rs. 2.55 per kWh during 06:00 to 22:00 hours, would be applicable. This arrangement should be valid upto January 15, 2005, and may be extended further by mutual agreement between the two Parties.

24. TPC will shut down Unit 4 once REL's Dahanu Unit comes on line unless there is a requirement for power from MSEB or other States, and will also desist from drawing from MSEB under normal circumstances, i.e. except in case of exigencies. This will also ensure that MSEB are not required to draw from the grid at high UI rates prevalent at low frequency levels in order to meet TPC's demand.

25. The Commission also clarifies that it was implicit in the Tariff Order that TPC could generate from Unit 4, when required, on account of shutdown of any of its generating capacities, as well as of REL's Dahanu Unit/s. The Commission would also like to emphasize in this context that the decision of TPC to buy from MSEB or to generate from Unit 4 depends on the relative cost economics and the merit order prevalent at the time, as well as the duration of the outage. If REL's Unit is shut down for a long period, and if it is cheaper to generate from Unit 4 than buy from MSEB at Rs. 2.99 per kWh plus FOCA charges, then it makes economic sense for TPC to generate from Unit 4, rather than buy from MSEB.

Sd/-
(Shri.A. Velayutham)
Member.

Sd/-
(Dr. Pramod Deo)
Member.

Sd/-
(A.M. Khan)
Secretary.

