

Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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Case No. 3 of 2003

In the matter of
Disputes between Tata Power Company Limited and Reliance Energy Limited in the
matter of Principles of Agreement dated 31st January 1998

Dr Pramod Deo, Chairman
Shri A. Velayutham, Member

Dated: 9th December, 2005.

ORDER

1. The Tata Power Company Ltd. (TPC), filed this Petition on 15th January 2003 under Section 22(2)(e) and 22(2)(n) of the erstwhile Electricity Regulatory Commissions Act, 1998 (ERC Act) in the matter of Principles of Agreement (PoA) dated 31st January 1998 and for adjudicating upon its dispute with BSES Limited (which has subsequently been renamed as Reliance Energy Limited [REL] in February, 2004).
2. The prayers in the Petition are, inter alia:
 - a) *REL be restrained from drawing active power (kWh) at the 220 kV interconnection under normal conditions unless REL Dahanu Units are down due to planned or forced outages.*
 - b) *REL be ordered and directed to pay to TPC a sum of Rs 4,32,75,000 as per particulars of Claim together with further interest at the rate of 12% per annum*
 - c) *REL be restrained from recovering any charges for energy flow from REL to TPC system at Borivali 220 kV interconnection, in any manner, whatsoever;*
 - d) *REL be directed to minimize drawal of reactive power from 220 kV interconnection and strictly follow the instructions of CLD, TPC in this regard. REL be further directed to take all necessary steps, inter alia, by installing necessary shunt capacitors, to ensure that nil reactive power is drawn at the 220 kV interconnection*
 - e) *REL be ordered and directed to compensate TPC for the wrongful drawal of reactive power by REL till such time as REL completes installation of shunt capacitors in its system*
 - f) *REL be directed to maintain at least 10% spinning reserve on its Dahanu generating units for safe islanding of REL system from TPC station as per item 10.13 of Chapter 10 of the recommendations of WREB committee report*
 - g) *Ad-interim and interim reliefs in terms of prayers (a), (c), (d) and (f)*
 - h) *Cost of the Petition be provided for*



3. In its Petition, TPC, submitted that to achieve Borivali inter-connection, TPC and REL signed the Principles of Agreement on 31st January 1998 (referred to as PoA) and the parties to the PoA have agreed as follows:
 - § As soon as the interconnection between TPC and REL at 220 kV Borivali is established, the interconnection between MSEB and REL at Boisar be opened out and REL shall use this interconnection at Borivali fully for standby type of service.
 - § There will be no flow of energy from REL to TPC system at 220 kV interconnection on real time basis, nor will TPC make any payment or allow any adjustment to REL for flow of energy from REL to TPC, except under inadvertent or emergency conditions in system by mutual agreement.
 - § REL shall provide necessary reactive compensation in their network (i.e., shunt capacitors as well as reactors, which will be provided and switched in or out as required). In addition, REL will regulate reactive power of generating units to maintain “NIL” reactive power at Borivali interconnection at all times.
 - § REL shall operate their generating units at Dahanu in consultation with TPC Load Dispatch Centre (LDC) for achieving coordinated operation of TPC and REL grid. TPC’s LDC shall be responsible for overall generation, scheduling, outage planning, etc., for TPC and REL grids.
4. TPC submitted that on account of the grid disturbance in the western region on 9th December 1995, a Committee was formed, which reviewed the operation of Mumbai islanding scheme. The Committee, after considering the alternatives of separate islanding and joint islanding of TPC system and REL system, accepted the alternative of separate islanding as this will facilitate one island to help the other if any of them was not successful in the beginning.
5. TPC submitted that REL has been regularly drawing active and reactive power at the 220 kV interconnection, in violation of PoA, even when the Dahanu units are in service. TPC submitted a Table indicating drawal of power at the 220 kV interconnection on two typical days (7th May 2002 and 12th May 2002). TPC submitted that by drawing active power at the 220 kV interconnection, REL is avoiding the Maximum Demand Charge it would have had to pay, had the same quantum of kWh been drawn at the 22/33 kV points of supply. TPC requested the Commission that REL be restrained from drawing active power at the 220 kV interconnection under normal conditions unless REL Dahanu units are down due to planned or forced outages and REL shall draw such requirement from TPC’s 22 kV/33 kV bus bars, where adequate transformer capacities are installed and are lying unutilised.
6. TPC submitted that REL is violating the provisions of PoA by pumping energy into TPC system at 220 kV Borivali interconnection on a regular basis since February 1998 under normal conditions, i.e., without any inadvertent or emergency conditions. TPC submitted the details of the quantum of energy pumped into TPC system over the period February 1998 to October 2002. TPC highlighted that TPC is not required to make any payment to REL for this energy and despite protests from TPC vide its letters, REL has been unilaterally adjusting the energy pumped into TPC system from TPC’s monthly bills for the energy supplied at 220 kV to REL, and deducting such amounts from TPC’s bills, in violation of terms of the PoA. TPC further submitted that the aforesaid deduction is also in violation of the provisions of the Electricity Regulatory Commissions Act, 1998 as REL is imposing a tariff on TPC in respect of such energy without the approval of the Commission. The aggregate amount unilaterally deducted by REL from TPC’s monthly bills upto October 2002 is Rs 432.75 lakh and REL is bound and liable to pay the said



- sum to TPC, with interest. TPC requested the Commission that REL be restrained from recovering any charges for energy flow from REL to TPC system at 220 kV Borivali interconnection and REL be ordered and directed to pay to TPC a sum of Rs 432.75 lakh as per the particulars of TPC's claim along with interest at the rate of 12% per annum.
7. TPC submitted that REL has been drawing reactive power regularly at 220 kV Borivali interconnection and unscheduled drawal of reactive power by REL is causing low voltages in TPC system, thereby resulting in increased line losses, reducing the loading capacity of the transmission corridor, and imposing excess strain on the existing equipment of TPC. TPC requested the Commission to direct REL to minimize drawal of reactive power from TPC at 220 kV interconnection and to take all the necessary steps by installing necessary shunt capacitors, to ensure that NIL reactive power is drawn at the 220 kV interconnection. TPC also requested the Commission to direct REL to compensate TPC for wrongful drawal of reactive power by REL in the manner as may be deemed fit and proper by the Commission.
 8. TPC highlighted the recommendations of the WREB Committee Report in respect of 10% spinning reserve to be maintained by REL on Dahanu units and submitted that REL is violating the directives of WREB by not maintaining the spinning reserve, thereby affecting the reliability of the power supply to Mumbai city. TPC requested the Commission to direct REL to maintain at least 10% spinning reserve on its Dahanu generating units for safe islanding of REL system from TPC system as per the recommendations of WREB Committee Report.
 9. REL, vide its submission, dated 31st May 2003 responded to the Petition filed by TPC and objected to the admission of the Petition.
 10. REL submitted that a party, which seeks specific performance of an Agreement, must assert and demonstrate that it is ready and willing to carry out its obligations under such Agreement. REL referred to Clauses 2 and 3 of the PoA, which stipulates the payment of standby charges by REL to TPC and the tariff for offtake of energy by REL at 220 kV interconnection. REL submitted that the PoA nowhere stipulates that REL cannot draw active power from 220 kV interconnection at Borivali. REL further submitted that it holds a distribution license which requires it to purchase electricity from the bulk licensee TPC at 22 kV for distributing in the suburbs of Mumbai and it is incumbent upon TPC to make arrangements to enable REL to effect such supply by affording sufficient outlets to REL. However, TPC on mischievous and malafide grounds is refusing sufficient outlets to REL and this refusal has resulted in drawal of energy to that extent at 220 kV interconnection. REL has filed a separate Petition in the matter of non-provision of sufficient outlets by TPC to REL. REL submitted that TPC cannot be permitted to create an impossible situation for REL and then complain that REL is violating the provisions of PoA and hence, the Petition is liable to be and should be rejected with costs.
 11. As regard to the issue of reverse flow of energy from REL to TPC, REL submitted that technically it is impossible to maintain zero flow from REL to TPC system at all points of time. For technical reasons, such as during sudden tripping of any load feeder in the REL system, there would be associated sudden export of power into the TPC system and the flow of power in such phenomenon is known as 'inadvertent' flow, which is an exception carved out in Clause 1 of PoA itself. REL denied TPC's submission that it is levying any tariff in respect of reverse flow of energy without the approval of the Commission. REL submitted that it is paying TPC for the net amount of units of energy consumed by REL,



- after taking into consideration the export of energy by REL to TPC and hence, the grievance raised by TPC in this connection is wholly frivolous and unsustainable and is liable to be and should be rejected. As regards TPC's claim of Rs 432.75 lakh, REL submitted that for the reasons mentioned above, there is no question of TPC being entitled to claim any amounts from REL and further, the claim for recovery of such amount is in any event substantially time barred and is therefore, not maintainable.
12. As regards the issue of reactive power drawal by REL, REL submitted that although TPC's tariff stipulates a power factor of 0.92, REL has maintained power factor above 0.95 thus, effectively relieving TPC of the burden of reactive kVA and further, REL is planning to install additional capacitive kVAR in a phased manner.
 13. As regards islanding of REL system, REL submitted that the working group of the Committee constituted to review the Mumbai islanding system, proposed one of the alternatives as islanding of Dahanu, Trombay and Tata hydro station, however, the Committee accepted the other alternative of separate islanding of TPC and REL system. REL further submitted that REL 220 kV system being very small in size and the generation being thermal (coal based) in nature, there is very low stiffness of the system in case of islanding. REL submitted that in successive incidence of disturbances in western grid, whenever REL system got islanded separately, it could not survive for long except on one occasion and during the grid disturbance on 30th July 2003, when REL system remained connected with TPC system which got islanded from rest of the grid, the combined system survived successfully, thereby ensuring uninterrupted power supply to Mumbai customers. REL submitted that this incident alongwith the experience of earlier failure, amply emphasise the need for a reliable islanding system for Mumbai. REL requested the Commission to issue suitable regulations to direct combined islanding of REL and TPC system.
 14. As regards to the maintenance of spinning reserve, REL submitted that presently, a spinning reserve is created by REL by automatic load shedding by REL, which is carried out in its area of supply in pre-islanded low frequency operation and post-islanded operation. Therefore, it is incorrect to allege that REL is not maintaining reserve.
 15. The Commission heard the Petition for admission on 3rd June 2003 alongwith Case No. 4 of 2003 (Petition filed by REL). During the admission hearing, the counsel for TPC reiterated the submissions made in the Petition and submitted that, apart from violation of the provisions of PoA, the actions of REL are adversely affecting the grid. TPC counsel submitted that their case is concerned broadly with grid stability, and specifically with the provisions of PoA dated 31st January 1998 and the interconnection which was provided only for the limited purpose of standby as per the directives of the Government of Maharashtra is being used for all other purposes by REL, i.e., for drawing of power and for pumping of power.
 16. The Counsel for TPC submitted that, even before TPC was asked, TPC provided standby voluntarily, for instance when REL system broke down in June 1995, so that Mumbai consumers were not inconvenienced. To a query from the Commission with regard to interconnection with MSEB, Counsel for TPC responded that there was an interconnection at Boisar earlier between REL and MSEB, but it was only for a start up facility, however, as noted in the Government Order of 19th January 1998, this was misused by REL to draw power on a regular basis. TPC was told by Government to



provide interconnection, but it was for the particular and specific purpose of standby. TPC Counsel cited the specific provisions of the Government Order and PoA.

17. On a query from the Commission as to whether there are any Government directions to show that this particular standby is any different from the MSEB standby, Counsel for TPC submitted that this standby for interconnection is of the same character. The Government directives were for an interconnection for standby supply of 275 MVA and as the directives were silent on the exact nature of the arrangement, the PoA was executed between the parties. The Counsel for TPC further submitted that the various Committee Reports indicated that islanding means that REL will not be drawing power from and feeding power into the Borivali interconnection and there is an agreement between the parties which provides for the specifics of this arrangement.
18. The Commission directed that, as the settlement of the disputes is predicated on a settlement of tariff matters, TPC should file, within a month, their tariff proposals for FY 2003-04. The Counsel for TPC submitted that there are practical difficulties in filing the tariff proposals and the question of standby charges has to be resolved before that.
19. The Commission further heard the matter on 17th September 2003, during which the Counsel for REL pointed out that the Commission has earlier directed both the parties to furnish their ARR and tariff proposals and REL had complied with direction, but TPC have not done so. The Counsel for TPC clarified that they had recently sought condonation of delay and time upto 15th October 2003 for submitting their Annual Revenue Requirement. The Commission directed that full compliance with regard to the submission of ARR and tariff proposal should be submitted by 1st October 2003.
20. The Counsel for REL submitted that there was some ambiguity in the Record of the last proceedings as to whether this Petition had been admitted or not, to which the Commission clarified that it had been admitted.
21. TPC filed its rejoinder dated 30th September 2003 to the reply of REL, reiterating and confirming what was stated in TPC's Petition and denying the allegations made and contentions raised by REL in their Affidavit in Reply.
22. The hearings were held in the matter on various occasions, i.e, 17th September 2003, 9th December 2003, 7th January, 2004, and 6th February, 2004. Thereafter, REL filed its written submissions on 24th March 2004 and TPC filed its written submissions on 1st April 2004 in both the matters.
23. In the meantime, both REL and TPC filed their ARR and Tariff Petitions for FY 2003-04 and FY 2004-05. The Commission, after following due regulatory process, issued the Tariff Orders on June 11, 2004, and July 1, 2004, in the case of TPC and REL, respectively. However, the subject matter of this Case 3 of 2003 was not addressed in these Tariff Orders.
24. Considering the complex technical issues involved in the case, the Commission vide its letter dated 30th June 2004, forwarded a note to the Central Electricity Authority (CEA) for obtaining its advice on the specific issues under Section 73(a) of the Electricity Act (EA), 2003 and the relevant Regulations of the Commission. The Commission sought the advice of the CEA on the following issues:



- a) *In view of the current network position in the region, Load Growth in the Mumbai metropolis and its need for highly reliable supply, what are the changes if any, that need to be made in conditions set out in the Principles of Agreement (PoA) dated 31st January 1998?*
 - b) *For successful islanding (joint islanding or mutually exclusive islanding of TPC and REL) of the local grid from the Regional grid at times of major disturbances, what are the pre-fault operating conditions that both TPC and REL as generators should normally observe?*
 - c) *Is the condition of not permitting REL from drawing any kind of power both active and reactive through 220 kV interconnection technically feasible under normal operative conditions?*
 - d) *In the event of reverse flow (i.e. from REL to TPC) under normal operating conditions, is it technically feasible to stop the flow without sacrificing the preparedness to face grid emergency?*
 - e) *In case of higher load growth and consequent demand by REL in certain pockets of the city, is the present TPC system capable of catering to the same? If not, what are the steps that should be taken by TPC to meet such demand?*
 - f) *Under EA 2003, who should be the nodal authority to maintain the local grid discipline i.e. TPC Central Load Dispatch or the State Load Dispatch Center?*
25. The CEA submitted its comments/views on the issues referred by the Commission vide letter dated 30th December 2004. The Commission had a meeting with Member (Transmission & Distribution), Maharashtra State Electricity Board (MSEB) on 10th February 2005 to discuss the various issues related to Intra-State Grid Operations, State Load Dispatch Centre (SLDC) operation and State Transmission System including Intra-State Availability Based Tariff (ABT) scheme, the State Grid Code and other functions of STU as mandated under the Act.
 26. The Commission forwarded the note sent to CEA for its advice on specific issues and the response received from CEA, to MSEB for submitting the State Transmission Utility's (STU) views on these issues. MSEB, vide its letters dated 7th April 2005 and 13th April 2005 submitted its point-wise replies on the various issues.
 27. The Commission forwarded the copy of letter sent to CEA under which a reference was made to CEA for advice, CEA's reply, copy of letter sent by Commission to MSEB referring the matter to State Transmission Utility (STU) for its advice and STU's replies, to TPC and REL to obtain their comments and views. REL, vide its submission dated 19th May 2005 and TPC, vide its submission dated 17th June 2005 submitted their comments and views on advice given by CEA on specific issues and on the STU's views.
 28. The comments/views of CEA on the issues referred by the Commission to CEA, MSEB's views as STU, REL's and TPC's comments on the views of CEA and STU are summarized in the following paragraphs:
 - a) ***Changes, if any, that need to be made in the conditions set out in the PoA dated 31st January 1998***
 29. CEA opined that PoA conditions have been made in 1998, but now the EA 2003 and ABT are in force and in the post-EA 2003 era, the inter-utility tie lines in a State system are to be treated like inter-State system tie lines in regional system and as per Section 39(2) of EA 2003, the STU is to discharge all functions of planning and coordination



related to intra-State transmission system. Grid discipline is to be maintained by the intra-State Utilities as per the Grid Code specified by the State Commission and the tariff for energy exchanges on inter-utility tie lines inside the intra-State system shall be decided by State Commission.

30. MSEB submitted that post EA 2003, the inter-utility tie lines in the State system will be treated similar to inter-State system and therefore, changes to PoA are necessary to follow this principle.. MSEB further suggested that as per section 39(2) of EA 2003, in order to discharge all functions of planning and coordination relating to intra-State transmission system as a STU, MSEB will invite TPC and REL and explore the possibility of changes to PoA.
31. REL submitted that the load growth in Mumbai would have no effect on conditions in PoA. REL agreed with CEA that in an interconnected system, flow of direction of power interchanges cannot be restricted and energy exchanges have to be accounted and paid for. REL contended that the PoA between REL and TPC does not require any change except that clauses (1) and (6) of the PoA need to be amended appropriately.
32. TPC commented that neither of the parties had sought recasting of the PoA and the same in any event cannot be done unilaterally and this issue is beyond the scope of this case. On the CEA's view of treatment of inter-utility tie lines in State system like inter-State tie lines in a regional system post EA 2003, TPC submitted there is no basis for this assertion in EA 2003. Similarly under Section 39(2)(b) of EA 2003, the STU is charged with coordination between utilities in the matter of intra-State transmission only and not on all intra-State matters as claimed by CEA. TPC further submitted that PoA is specifically for the 220 kV interconnection at Borivali, which is to be exclusively used for standby purposes during shutdown of REL Dahanu Generating units. TPC further opined that this issue could be amicably resolved if REL agrees to sign a long term Power Purchase Agreement (PPA) with TPC and as per the provisions of EA 2003, TPC is entitled to sell its power to any entity and does not have any obligation to continue supply to REL in the absence of any commercial arrangement between the two utilities.

b) For successful islanding (joint islanding or mutually exclusive islanding of TPC and REL) of the local grid from the Regional grid at times of major disturbances, what are the pre-fault operating conditions that both TPC and REL as generators should normally observe?
33. CEA suggested the combined islanding of TPC and REL systems considering that whole of Mumbai has to be saved from collapse at the time of major grid disturbance at the regional system level. CEA also commented that in existing system, an islanding scheme to disconnect each of TPC and REL system from the rest of the grid exists and whenever condition of net nil flow between REL and TPC has been met, the islanding remains joint between the two systems, i.e., combined REL-TPC islanding together.
34. MSEB referred to the recommendations of Enquiry Committee constituted by CEA to investigate and review the performance of the islanding schemes of TPC and REL, which has suggested combined islanding of TPC and REL to ensure reliable power supply to Mumbai and successful survival after major grid disturbance.
35. REL submitted that technically, its 220 kV system being small in size and the generation being thermal (coal based), there is a low stiffness of the system in case of stand-alone



- islanding and hence, REL agreed with CEA's and STU's views that to ensure reliable power supply to Mumbai city, TPC and REL system should island together. REL contended that for joint islanding by REL and TPC, REL has taken all measures recommended by the working group of the Committee set up by WREB on Mumbai islanding system.
36. TPC commented that CEA has merely suggested combined islanding of TPC and REL system without giving reasons in support of its suggestion. TPC commented that the issue of "*pre-fault operation conditions that both TPC and REL as generators should normally observe*" on which the Commission sought the views of CEA and STU have neither been suggested by CEA nor by STU. TPC submitted that the proposal of joint islanding would impact the safe operation of the Mumbai grid and would also significantly affect black start of the system in the event of complete shutdown. TPC further suggested that for safe islanding of the system, the recommendation of Expert Committee for maintaining a spinning reserve of 10% of the installed capacity by the Utilities should be implemented.
- c) Drawal of active and reactive power by REL through 220 kV interconnection system under normal operating conditions*
- d) Technical feasibility of stopping the flow from REL to TPC systems under normal operative conditions without sacrificing the preparedness to face grid emergency*
37. CEA commented that by proper operational planning, generally it is feasible for REL to maintain NIL or near NIL active and reactive power from their overall 220 kV interconnection with TPC system, though it may not be technically feasible at each 220 kV interconnection of TPC. CEA further opined that in an inter-connected system, directional flow of power exchanges cannot be restricted and the energy exchanges has to be accounted and paid for, for which the tariff has to be determined by the Commission. As regards reactive energy, CEA suggested that reactive energy drawal or injection at tie points of 220 kV interconnection may be governed by the existing guidelines under IEGC and the charge in paise/kVARh should be nominal as per the existing rate approved by the Central Electricity Regulatory Commission (CERC).
38. MSEB agreed with the principle of operating inter-utility tie lines as suggested by CEA and submitted that the condition of not permitting REL to inject active and reactive power at 220 kV interconnection will no longer be valid and the commercial mechanism for active/reactive flow over tie-lines is to be determined by the Commission.
39. REL agreed with CEA's views that in an interconnected system, directional flow of power exchanges cannot be restricted and energy exchanges should be accounted and paid. REL also agreed with STU's views that the condition of not permitting REL to inject active as well as reactive power at 220 kV interconnection will no longer be valid.
40. In the matter of reactive power drawal by REL at 220 kV interconnection point, REL submitted that it has taken suitable measures to maintain the system power factor above 0.95, thus effectively relieving TPC the burden of kVAR and REL has also provided additional capacitors to ensure minimum possible reactive power drawal at 220 kV interconnection.
41. TPC expressed its agreement with the opinion of CEA that by proper operational planning, it is feasible for REL to maintain NIL active and reactive power from their overall 220 kV interconnection with TPC system and all energy exchanges should be



accounted and paid for based on commercial agreement between the utilities through a detailed Power Purchase Agreement/Power Supply Agreement.

42. On the MSEB's comments with respect to inter-utility tie lines, TPC commented that the 220 kV interconnection between TPC and REL is not in the nature of an inter-utility bi-directional tie line, but a unidirectional tie line exclusively for support to REL as REL's generating capacity is only a fraction of total load being served by it.
43. As regards to drawal of reactive power by REL, TPC commented that REL has taken steps to reduce reactive drawal only after TPC filed this case. TPC further mentioned that the CEA has specified the payment mechanism and the Commission may review the same for implementation including payment for drawals in the past.
44. As regards reverse flow of energy, TPC commented that the Commission's query to CEA/STU on the impact of reverse flow on grid security, is not clear as the normal flow is always from TPC to REL and is always secure.

e) Capability of TPC system to cater to the increasing demand of REL system in certain pockets of the city

45. On this issue, CEA has opined that detailed system studies need to be carried out to assess the adequacy of the present TPC system and under section 39(2)(c) of EA 2003, the STU is to ensure development of an efficient, coordinated and economical system of intra-State transmission lines. STU may examine the adequacy of present TPC system and finalise the additional system required to cater to increasing demand of REL system and in case it is felt that the advice of CEA is required, the matter can be referred to CEA alongwith the relevant study results.
46. MSEB suggested that a Task Group comprising of representatives from these Utilities should be constituted to determine the adequacy of existing TPC network and future expansion requirement to cater to increased demand.
47. REL agreed with CEA's views that STU may examine the adequacy of TPC system and finalise the additional transmission system required to cater to growing demand of REL. REL contended that under clause 4 of its license, TPC is obliged to supply energy required by REL and under the provisions of EA 2003, TPC should ensure development of its transmission system for smooth flow of electricity from its generating system to REL load center.
48. TPC submitted that post EA 2003 TPC is under no obligation to supply REL, save in accordance with the terms of a bilateral PPA and such PPA would also cover the issues of distribution network planning. TPC welcomed the suggestion of formation of Task Group under STU for detailed transmission studies and submitted that the terms of reference for the Group should be formulated and finalized after due consultation/hearing with all the parties concerned. TPC further submitted that this matter of formation of Task Group for detailed transmission studies is completely independent of this case.

f) Nodal Authority for maintaining Grid Discipline



49. CEA opined that as per Section 32(2)(e) of EA 2003, SLDC is responsible for carrying out real-time operations for grid control and dispatch of electricity within the State in accordance with the Grid Standards and the State Grid Code.
50. MSEB suggested that SLDC Kalwa should ensure integrated operation of State Grid including network belonging to TPC-REL-BEST and responsibility of monitoring local grid operation pertaining to TPC-REL-BEST shall be entrusted to CLD, TPC. MSEB further suggested that as mentioned in PoA, TPC's Load Dispatch Centre should be responsible for overall generation scheduling, outage planning, etc. for TPC and REL grids.
51. REL agreed with CEA's views that SLDC is the nodal authority for maintaining local grid discipline and expressed its disagreement with STU's views that the responsibility of monitoring local grid discipline pertaining to TPC-REL-BEST should be entrusted to CLD, TPC.
52. TPC opined that, as per the EA 2003, SLDC is the nodal authority for overseeing the operations of all local LDCs of the Utilities in order to maintain grid discipline. TPC agreed with STU's suggestion that real time operation control of TPC-REL-BEST should be entrusted to TPC LDC. TPC further suggested that in case it is decided to have combined islanding scheme for Mumbai in future, it would be prudent that the networks of REL, BEST and TPC are controlled by TPC in order to have better co-ordination subsequent to islanding, as TPC LDC staff will then be well versed with REL network.
53. After obtaining the views of all the parties, i.e., CEA, STU, TPC and REL, the Commission again heard the matter on 22nd June 2005, during which following additional points were made.
54. Mr. Khambata, legal counsel appearing on behalf of TPC, submitted that TPC's submissions have pointed out that clauses of PoA have never been disputed by REL. He submitted that in their letters, REL expressed regret that inadvertently some power has been transferred to TPC. He submitted that REL's whole approach in the correspondence, before the matter turned into a dispute before the Commission, was that it was an "*inadvertent error*". But for that inadvertent error of bringing power into the TPC system, REL unilaterally made deductions from TPC's bills to them and billed TPC for that power. He submitted that the Government Order and the PoA read together provides that REL cannot transfer power into TPC's system. The Order further stated that REL cannot draw power on a regular basis for regular use through the standby interconnection but they continued to draw power on regular basis.
55. On issue of islanding scheme, Mr. Khambatta submitted that the background to the question posed to CEA was the report by an Expert Committee set up by the CEA itself in 2002. The Report prepared by a group of experts, arrived at certain conclusions as to why islanding of the TPC system should continue separately from the REL system.. Mr. Khambatta submitted that the Expert Committee concluded that the REL system should not be included in the islanding scheme primarily for two reasons, viz., (i) The REL system was operationally not compatible with the TPC system. Before REL system could be made compatible and islanded, various technical measures had to be carried out and introduced by REL, and (ii) REL did not have 10% spinning reserve, as required (maintained by TPC in their generating units). Mr. Khambatta submitted that the final



conclusion of the Expert Committee Report in 2002 was that without fulfillment of these pre-requisites a joint islanding system would be instable.

56. He further submitted that CEA should have first clarified technical changes that have occurred since the year 2002. He submitted that the reference to CEA under the provisions of the Act is on technical matters and the CEA has not given its opinion on changes in the statutory regime. He submitted that the first question that CEA should have addressed is, whether subsequent to the Expert Committee Report in 2002, any changes have taken place, which have removed these two major obstacles? He further submitted that the conditionalities specified by CEA in earlier Report have not been addressed and therefore CEA's present opinion has to be treated with great circumspection. He submitted that the CEA report does not address the core issue or the technical heart of the problem. He pointed out that the recommendation of the CEA is based on statutory changes, which are for the Commission to decide upon and not by a technical body.
57. He further submitted that inspite of specific query on any changes to be made to the PoA, the same being within the CEA's area of expertise, no recommendation on any change to the PoA has been made by the CEA.
58. He further pointed out that one fundamental misunderstanding CEA has is that Borivali 220 kV interconnection is an inter-utility tie line within a State. He stated that the CEA had referred to Section 39(2) of the EA 2003, which deals with the functions of the STU. He submitted that there is no provision that requires inter-utility tie-lines to be treated like inter-State system's tie-lines in a regional system.
59. Mr. Khambata further quoted CEA's opinion in respect of drawal of power through the 220 kV interconnection and submitted that a factual misconception had been made by CEA, in assuming that there are several such interconnections, not being aware that there is only one such interconnection and the rest are standard utility supply connections. He submitted that when there is only one such inter-connection, it is possible to maintain nil power flow and based on CEA's own recommendation, it is feasible.
60. Mr. Khambata further quoted the CEA's opinion in respect of drawal of active and reactive power by REL through the 220 kV interconnection system under normal operative conditions and submitted that CEA has opined that as far as the past is concerned, TPC should be compensated. He requested the Commission to determine some amount to compensate TPC. He submitted that in the future, there should not be free flow of power on the 220 kV TPC interconnection. He pointed out that REL does not have large capacity for generation, since it is generating about 500 MW at Dahanu, and purchasing another 600 or 700 MW of power from TPC, and distributing the same. According to him, normally between two utilities there is free flow of power, as each can draw upon the other when there is a shortfall and both the systems survive. He submitted that however, in this case, there was no question of free flow of power, as TPC will not be able to draw upon REL, since REL is already overstretched and as such free flow cannot happen in the standby interconnection. He submitted that for the aforesaid fundamental reasons, the recommendations of the CEA are misconceived.
61. He submitted that CEA also recognized that demand must be met by TPC. The CEA had opined that a detailed study has to be carried out, and a Committee should be set up to assess the adequacy of the TPC system. He submitted that the fundamental point was that



- if TPC have to increase their capacity, TPC would have to spend a huge amount. He pointed out that the PoA of 1998 contemplated that a detailed Power Purchase Agreement (PPA) be entered into, which has not been entered into due to obstacles placed by REL. Without a PPA and assurance of a certain minimum regular demand from REL, TPC cannot have surety to invest large resources to create infrastructure.
62. Mr. Khambata further pointed out that the STU (MSEB) has extracted the 2002 Report and recommended combined islanding on the basis of the recommendations of the CEA Committee of 2002. He submitted that MSEB is also saying that CEA Committee's recommendations in 2002 must be implemented, i.e., REL must maintain a 10% spinning reserve as a precautionary measure. He submitted that as far as various other matters are concerned, MSEB has opined that generation scheduling, outage planning, etc., must be entrusted to the Central Load Dispatch Centre of TPC and MSEB will not be responsible for the same.
63. Mr. J.J. Bhatt, Counsel for REL, submitted that notwithstanding the fact that the EA 2003 gives the Commission wide powers, the Commission did not exist in 1998 when the parties were virtually compelled to enter into the PoA, abide by the broad terms of that Agreement and enter into a PPA. He referred to TPC's contention that before the 1998 Agreement, REL was illegally pumping the power to MSEB and, therefore, to prevent them from doing so, the Government compelled REL to enter into an Agreement. Refuting the allegations, he submitted that in 1996, REL's Dahanu plant was ready to supply electricity and REL had sought inter-connection at Borivali. TPC however, made exorbitant demands for standby charges as a result of which REL was not interconnected and the matter was placed before the GoM. GoM passed an order, which had no statutory binding effect and therefore, to accord it sanctity, the Parties entered into an Agreement. He submitted that the Government at that point of time did not have the powers, which the Commission has today. Therefore, an Agreement was arrived at as a Memorandum of Understanding and the PPA was to be entered into at that point of time. He further submitted that the contention that REL was illegally supplying to MSEB and therefore, the Government passed an Order, is not correct. He submitted that a situation was brought about as a result of which REL were required to give power to MSEB, which REL discontinued after entering into an Agreement with TPC.
64. Mr. Bhatt further submitted that the second submission made by TPC is that REL must confirm that they would off-take a particular quantity of power from TPC and not take power at their whims and fancies. He submitted that the Commission in the Tariff Order has stated how much power REL will purchase and from whom. He drew the attention of the Commission to its powers under Section 86 of the EA 2003. He referred to the expertise, functions, and powers conferred upon the Commission and requested the Commission to independently decide the matter. He further submitted that if the Commission so desires, it may take the opinion of CEA. He submitted that though the parties are bound by the 1998 Agreement, it does not override the jurisdiction of the Commission and implies that the Commission has powers to decide the matter.
65. Mr. Bhatt further submitted that there are three separate issues before the Commission, viz. (i) the drawal of power at the Borivali interconnection; (ii) issue of islanding; and (iii) REL's request for additional outlets.
66. He further submitted that if the Commission came to the conclusion that a solution is required to be found to meet the requirement of increased power demand of the city of



Mumbai, notwithstanding the fact that the 1998 Agreement says something else, then the Commission can permit the drawal of power at 220 kV interconnection though the interconnection was originally conceptualized for standby. He submitted that it was entirely within the Commission's powers to fix the tariff. He submitted that the Commission has been equipped with greater capability, with greater powers and with greater vision to ensure supply of electricity to the city of Mumbai, as compared to what the GoM had in 1998.

67. He submitted that the interconnection was within the Commission's jurisdiction and the statutory changes and the additional powers conferred upon the Commission, clearly enabled it to give direction in this respect. Mr. Bhatt further submitted that the third point made was regarding combined islanding. He stated that REL had already made written submissions on all the issues. He pointed out that in respect of islanding, emphasis is laid on the report of Commission's Enquiry Committee (CEC) constituted under the chairmanship of the Hon'ble Member of CEA in 2002. He quoted the conclusion of the Committee in respect of islanding schemes of TPC and REL as under:

“ The Committee observed that regarding islanding of Mumbai city area, due caution must be exercised. BSES proposed that their system should be islanded with the TPC system. However, TPC stated that existing independent islanding scheme was acceptable to them. So we said it should be common, TPC said that independent is acceptable to them. WRLDC as member of the Committee was of the view that BSES system should island with TPC system. Rest of the members of the Committee, MSEB and WREB including Chairman of the Committee were of the view that the independent islanding of TPC and BSES system may continue as suggested by the earlier committee.”

68. He contended that it did not indicate that if there is a common islanding system, there would be complication. According to one view, it could be a common islanding system and according to another view, independent islanding of TPC and REL system may continue. He further quoted the conclusion:

“Chairman of the Committee was also of the view that existing independent islanding has possibilities of improvement if BSES carry out measures in line with TPC islanding experience, as BSES have survived long (for almost 3 hours) on certain occasions in the past, also in these instances of BSES survival, BSES units had generation margins available. However, with reference to proposal of BSES, in case it is proposed that BSES system should get islanded with TPC system, then Committee recommend that various measures as detailed in Chapter eight of this report may be carried out.”

69. Mr. Bhatt submitted that measures recommended by CEC have been carried out by REL substantially. Therefore, it would not be correct to conclude that the earlier report said that there cannot be common islanding. He further submitted that the Committee recommended that if there is to be common islanding, certain measures need to be carried out.
70. Mr. Khambata, in reply to the arguments raised by REL, submitted that it had never been TPC's submission that the 2002 Expert Committee recommended no joint islanding at any cost. According to TPC, there were two pre-conditions to be complied with for islanding, i.e., (i) precautionary measures, and (ii) 10% spinning reserve. He submitted that though REL has now stated that it has substantially complied with the conditions, there is no evidence placed on record to show compliance. He further pointed out that in



REL's reply filed in the earlier proceeding, REL stated they do not need to maintain a spinning reserve. He submitted that in absence of any material to show compliance by REL, no reliance can be placed to show that REL has substantially complied with the same.

71. Mr. Khambata pointed out that in 1998, it was agreed pursuant to the order of the GoM that the 220 kV interconnection was a standby interconnection. In respect of the same, he drew the Commission's attention to its Tariff Order of 11th June 2004 in the case of TPC, which states, *"No demand charge has been specified for the drawal of power by BSES at 220 kV interconnection at Borivali as this issue is the subject matter of a separate Case pending before the Commission and the Commission will give its ruling on this separately. The Commission would like to add here that the 220 kV interconnection point at Borivali was intended only for the standby requirements, and was never intended to be used as a regular drawal point, under the interconnection agreement signed between TPCL and BSES on 31.1.1998. BSES is expected to refrain from normal energy drawal at this interconnection point, till the Commission decides on this issue in the case pending before it."*
72. He submitted that it was an admitted position that the 220 kV interconnection is only for standby. He submitted that the TPC submission has been for restraining REL from using the same for purposes other than standby, which is clearly contrary to what was agreed in the PoA. He further submitted that if it was assumed that under the new regime the PoA may be put aside and the Commission can give directions, then for the Commission to give directions, it needs some material before it, to do so. He submitted that no material has been placed before the Commission either by REL or CEA to say that the technical scenario prevalent in 1998 has dramatically changed. He submitted that a change of statute does not alter a ground reality and there is no material to exercise the powers that REL has invoked.
73. Mr. Bhatt pointed out that if the Tariff Order specifically provided that the interconnection was only for standby, it would have stated so. He further pointed out that no demand charges have been specified for drawal of energy by REL at 220 kV interconnection, which is one of the prayers in TPC's present Petition. This issue is the subject matter of a separate case pending before the Commission and the Commission will give its ruling on this case separately. He submitted that till the Commission decides on this issue in the case pending before it, the Commission can either say that REL is not entitled for drawal at 220 kV interconnection at all and penalize REL for its doings in the past or decide that REL is entitled for drawal at 220 kV and fix the charges for that purpose.
74. Subsequent to the hearing held on 22nd June 2005, TPC vide affidavit dated 29th June 2005 filed brief written submissions, limited to the submissions made on behalf of TPC on 22nd June 2005 relating to the views/comments expressed by the CEA by its letter dated 30th December 2004. TPC repeated and reiterated the contents of the affidavit dated 16th June 2005 submitted by them offering comments on views of CEA and also on views of STU and REL. Vide the written submissions, TPC requested the Commission not to accept the views/comments given by CEA by its letter dated 30th December 2004 and to decide the matters on the basis of the pleadings and the Written Submissions filed by the parties.



75. The Commission has gone through all the written submissions and oral arguments put forth by the Parties as well as the various documents submitted by them. The Commission has also noted the CEA's advice and the STU's views on the issues referred to CEA for its advice.
76. On the issue of the drawal of active power at 220kv interconnection, the Commission holds that the terms of Principles of Agreement should govern the same. REL should, therefore, invariably follow the principle laid down in this regard and not draw power at the 220kv inter-connection under normal conditions.
77. Going by the fact that other than Principles of Agreement, there is no document governing contractual relationship between the parties, the Commission is of the view that the reverse flow of power is not expected to be a normal feature and that TPC is not liable to make any payment on that account. Even in the inadvertent or emergency condition, the Principles of Agreement does not provide for any rate or amount for payment on account of power flow from REL to TPC. The Principles of Agreement however provides that parties may agree for payment for energy flow in inadvertent or emergent situation and as such, the Commission advises parties to address this issue mutually either through a separate agreement or amending the Principles of Agreement or any other contractual manner. The Commission therefore directs REL to refund the amount deducted on this account, within one month of the issue of this Order, with interest at the SBI PLR rate.
78. The Commission directs TPC to confirm that the amount of deduction made by REL has been considered as a part of total revenue in the submissions made with respect to determination of Annual Revenue Requirement (ARR) and tariffs. The Commission also directs the REL to confirm that the amount of deduction made by REL has not been considered as part of power purchase expenses in the submissions made with respect to determination of Annual Revenue Requirement (ARR) and tariffs.
79. The Commission would like to state that with the enactment of Electricity Act, 2003 and notification of subsequent Regulations issued by the Commission, the contractual framework between the Utilities in the State will require modifications. Some of the Contracts or Agreements executed prior to EA 2003 may become redundant and the Utilities may have to enter into new contractual arrangements in line with the provisions of EA 2003 and the Regulations issued by the Commission. The PoA was executed prior to implementation of EA 2003, and though the PoA required both the parties to enter into an agreement in a time bound manner, no agreement was entered into. The Commission is of the opinion that this PoA would not be valid under the provisions of EA 2003, however, in the absence of any agreement for supply of power, the PoA is the only agreement available for supply of power from TPC to REL at 220 kV interconnection.
80. The Electricity Act 2003 defines 'Intra-State Transmission System' as follows:
"Intra-State transmission system means any system for transmission of electricity other than an inter-State transmission system"

In view of the above, the Commission is of the opinion that all transmission assets, including 220 kV Borivali interconnection should be treated as a part of intra-State transmission system. Further, the Commission has been mandated under Section 86 (c) to facilitate intra-State transmission and wheeling of energy. The Commission is of the opinion that it is essential to optimize the utilization of transmission and distribution



assets in the State and therefore, there is a need to review the utility of the asset as a mere 'standby asset'. The Commission is of the view that, free flow of power over the intra-State transmission system should be permitted and thus, approves "in-principle" the concept of free flow of power on 220 kV TPC interconnection. However, till such time as the relevant Regulations are notified and the Commission approves the commercial and pricing framework for transactions at 220 kV interconnection, the issue of drawal of active power by REL, drawal of reactive energy by REL and reverse flow of energy from REL to TPC at 220 kV interconnection shall be governed by the provisions of PoA.

81. REL in its submission dated 16th May 2005 submitted that REL has taken suitable measures to maintain the system power factor above 0.95 at 220 kV interconnection point and this was confirmed by TPC in its submission dated 17th June 2005. The Commission has noted the same and no further directives are warranted on this issue.
82. In view of the fact that the PoA does not provide for any compensation in case of reactive power drawal, and also noting REL's compliance in this regard in para 81 above, the Commission feels, no directives are necessary, in this regard.
83. As regards requirements to maintain 'Spinning Reserve', the Commission notes the need to maintain the same to ensure grid stability. At the same time, the Commission notes that in view of significant capacity shortage, it is not possible to maintain spinning reserve. Further, the Commission intends to address this issue in the State Grid Code. Till such time the State Grid Code is issued by the Commission, existing scheduling and dispatch methodology shall be used by all the Utilities.
84. The Commission is of the opinion that the existing islanding system in Mumbai has been implemented based on the recommendations of the Committee constituted to review the operation of Mumbai islanding system. The existing islanding scheme, which is also in line with the provisions of the PoA and also addresses requirements of both licensees has been operational and has successfully islanded Mumbai city on several occasions. The Commission notes that existing islanding scheme may not work with the principle of 'free flow of power' over intra-State transmission system as specified in this Order, and therefore, the islanding scheme may have to be modified. Any modification to the islanding scheme would require detailed technical study for its formulation and concurrence of Regional Electricity Board/Regional Power Committee for its implementation. Till such time new islanding procedures are developed and implemented, the existing islanding mechanism should be continued.

With this Order, the Commission disposes the Application (Case 3 of 2003) of Tata Power Company Limited.

Sd/-
(A. Velayutham)
Member

Sd/-
(Dr. Pramod Deo)
Chairman, MERC



(Signature)
(M. K. Kundu)
Secretary, MERC