TAMIL NADU ELECTRICITY REGULATORY COMMISSION
(Constituted under section 82 (1) of the Electricity Act, 2003)
(Central Act 36 of 2003)

PRESENT:-

Thiru S.Akshayakumar .... Chairman

Thiru.G.Rajagopal .... Member

and

Dr.T.Prabhakara Rao .... Member

M.P.No.12 of 2016

Tamil Nadu Generation and Distribution Corporation Limited
Represented by Chief Engineer / Gas Turbine Schemes
144, Anna Salai, Chennai – 600 002.

… Petitioner
(Thiru M.Gopinathan
Standing Counsel for TANGEDCO)

Vs.

Nil … Respondent

Dates of hearing: 02-06-2016 and 29-08-2016

Date of Order: 16-11-2016

The M.P.No.12 of 2016 came up for final hearing on 29-08-2016. The Commission upon perusal of the Petition and after hearing the submissions of the Petitioner hereby makes the following:

ORDER

1. Prayer of the Petitioner:

The prayer of the Petitioner in the above M.P.No.12 of 2016 is for –

(i) Approval and ratification for having generated real power 10.5080 MUs at the fuel cost of Rs.16.66 Cr. in FY 2015-16 under unavoidable emergency circumstances in order to avoid cascade tripping of generating units and EHT / HT feeders and blackout in the area of Chennai city area during

critical situation thereby maintaining stability of Chennai network by considering BBGTPS as a part of Grid Stability Mechanism.

(ii) Approval of real power generation at BBGTPS during trial run of the units / Mock drill.

(iii) Liberty to file a fresh petition after generating real power at BBGTPS as and when emergency arises.

2. Contentions of the Petitioner:-

2.1. In the S.M.T. Order No.9 of 2014, power generation at BBGTPS is not allowed under “Merit Order Dispatch” vide clause 4.141 of SMT order and it requires prior approval of the Commission, as per the directives of Commission vide 7.1 (h) of the SMT order. Hence, a Miscellaneous Petition is filed before the Commission for having generated real power of 10.5080 MUs at the fuel cost of Rs.16.66 Cr. in FY 2015-16 under unavoidable emergency circumstances in order to avoid cascade tripping of generating units and EHT / HT feeders and blackout in the area of Chennai city area during critical situation thereby maintaining stability of Chennai network.

2.2. At BBGTPS, 4 units of 30 MW each are available. The units at BBGTPS have been operated under unavoidable emergency circumstances in FY 2015-16 as detailed in the Annexure with the petition.

Total Power generated	:	10.5080 MU
Total cost of fuel	:	16.66 Crore

2.3. In order to admit the expenditure incurred towards cost of fuel, during real power generation of 10.5080 MU at BBGTPS in FY 2015-16 and in the TANGEDCO’s ARR submission along with the Tariff Petition to be filed before the

Commission for tariff revision, this petition is filed before the Commission, otherwise the expenditure made towards fuel for generating real power at BBGTPS could not be reflected in tariff.

2.4. During the tripping and breakdown of vital 230 KV feeders like NCTPS–Tondairpet feeders 1 & 2 Manali – Alamathy feeders, Manali – Mylapore feeders etc. there would be disturbance in 110 KV network system also causing major grid disturbance (to the tune of about 300-400 MW) in Chennai city leading to block out of major essential services like Government Head Quarter Hospital, Railway traction system, Metro water works, High Court and Secretariat campus etc. Hence, in order to mitigate the supply failure in the important vicinity of Chennai city, it is very much essential to keep the units in BBGTPS in service to extend supply to vital substations like 230 KV Mylapore, Tondiarpet, Taramani, Chintadripet, Valluvarkottam and High Court substations. There were two 110 KV generation sources i.e. BBGTPS & GMR were available prior to 14-02-2015. Consequent to expiry of PPA (Power Purchase Agreement) of GMR on 14-02-2015, only generating source at 110 KV Chennai network is BBGTPS.

2.5. On restoration of station supply to the above substations, depending upon the feeder healthy conditions, 230 KV feeders are gradually normalized with simultaneous restoration of relevant 110 KV feeders according to the Chennai city network loading condition without affecting the stability and security of the system. The restoration process takes about 30 minutes to 2-3 hours depending upon the severity of the disturbance. After normalizing, the generation units of BBGTPS will be taken out of bar and kept as stand by. In view of the above, the operation of the generation units in BBGTPS during critical condition is very much required to meet

the contingency situation in the Chennai city network in restoring supply to essential services and thus ensuring supply.

2.6. The very purpose of establishment of BBGTPS under open cycle is to operate the units during grid emergencies to safe guard the grid since Gas Turbine machines are quick start machines and 30 to 120 MW could be fed into grid within the time span of 15-45 seconds.

3. Contentions of the Petitioner in the Additional Affidavit dated 1-8-2016:-

3.1. On 02-06-2016, the Commission has directed the Petitioner to file additional affidavit with the following details:-

(i) the reason for running the units at BBGTPS for abnormal number of instances of emergency situations in FY 2015-16.

(ii) Steps taken to avoid such instances.

(iii) Quantum of fuel stock kept at the plant with reasons.

3.2. The Basin Bridge Gas Turbine Power Station has been commissioned to meet out the Grid requirements whenever network disturbances occurred. Further, Chennai city network is highly loaded in summer and any tripping of one line will lead to cascade tripping, if necessary action is not taken at appropriate time. Basin Bridge Gas Turbine Machines are put into services whenever network disturbances occur in North Chennai, Tondiarpet and Basin Bridge areas and also to limit the line loading of 230 KV Tondiarpet-Basin Bridge Feeder, NCTPS-Tondiarpet-I & II feeders and Basin Bridge-Mylapore depending upon the network availability on real time operation and during line clear in the above sub-stations.

3.3. Further, as Gas Turbine units are quick start machines, real time operation can be made at appropriate time thereby maintaining stability in Chennai network. For example, on 09-05-2015 when power purchase of 266 MW was curtailed due to transmission constraints and Unit-5 of Neyveli & Unit-I of Kudankulam, Atomic Power Station were under outage the most critical situation of Grid was managed by running BBGTPS Unit-4. Further, during sudden withdrawal of wind generation of the order of 200 to 750 MW on 28-07-2015 and 31-07-2015, BBGTPS units were brought into service to maintain Grid stability. Further, when Grid availability was suddenly reduced by 1810 MW on 25-09-2015 due to tripping of NCTPS-1 & 2, 7 units of Neyveli, Vallur Unit-3 & Kudankulam BBGTPS units were operated to mitigate the Grid requirement. The circumstances under which Basin Bridge units were operated were explained in the Annexure to the petition.

3.4. Regarding steps taken to avoid such instances, it is submitted that at present, Mylapore 230 / 110 KV and 230 / 33 KV substations are radially fed through 230 KV Manali-Mylapore feeder. During the failure of the above feeder, 230 KV Basin Bridge – Mylapore feeder is being extended to meet out Mylapore substation loads. Hence, additional 230 KV source from any one of the generating station to Basin Bridge 230 / 110 KV substation is essential. Hence, additional source to Basin Bridge 230 KV substation has been provided in the proposal for establishment of Pulianthope 400 KV substation and steps taken to provide additional 230 KV source to Basin Bridge 230 KV SS & Mylapore 230 KV SS are furnished below:-

(i) Providing additional 230 KV source to Basin Bridge 230 KV Substation:-

230 KV cable laying works is under progress from Tondiarpet 230 KV substation to Basin Bridge 230 KV Substation and it is being used as an

additional source till establishment of the proposed Pulianthope 400 KV GIS substation. This work is expected to be completed in 2016-17.

(ii) Providing additional 230 KV source to Mylapore 230 KV Substation:-

230 KV cable laying works is under progress from Mylapore 230 KV Substation to Taramani 230 KV substation and it is being used as an alternative source. It will be completed in 2016-17.

(iii) Second source to Basin Bridge 230 KV SS:-

Second source to Basin Bridge 230 KV substation is made available after commissioning of Pulianthope 400 / 230 KV substation. Tender process for awarding of Pulianthope 400 / 230 KV substation is under progress.

3.5. After commissioning of Pulianthope 400 / 230 KV substation, 230 KV Basin Bridge – Mylapore feeder can be tied with 230 KV Manali-Mylapore feeder at 230 KV Mylapore substation thereby reducing the 230 KV Manali bus loading and providing reliable source to Mylapore. Necessary action is being taken to complete the above works on top priority so as to avoid the operation of units at Basin Bridge Gas Turbine Power Station.

3.6. Regarding Naphtha fuel stock at BBGTPS, it is submitted that earlier Naphtha fuel was transferred to BBGTPS from M/s.IOCL, Korrukupet, Chennai through pipeline. Now, as IOCL authorities have closed the Chennai Naphtha terminal, the fuel is being transported from Narimanam in Nagai District and the time required for the transportation is 2 to 4 days. Hence, the fuel stock maintained is 1100 KL which is required for 60 machine hours (i.e. 13Kl / Hr*60 Hrs=780 KL) along with dead stock of 320 KL so as to meet out emergency situations. Naphtha tank is provided with floating roof so as to avoid empty space over fuel thereby avoiding fire hazard due to vaporization at atmospheric pressure. Further, to prevent the entry of sediments to the machine dead stock is being maintained. As per the tank design 320KL of fuel has to be maintained.

4. Findings of the Commission:-

4.1 We have carefully considered the prayers of the Petitioner which are as follows:

a) Approval and ratification for having generated real power 10.5080 MUs at the fuel cost of Rs.16.66 Crores in FY 2015-16 under unavoidable emergency circumstances in order to avoid cascade tripping of generating units and EHT / HT feeders and blackout in the area of Chennai city area during critical situation thereby maintaining stability of Chennai network by considering BBGTPS as a part of Grid Stability Mechanism.

b) Approval of real power generation at BBGTPS during trial run of the units / Mock drill.

c) Liberty to file a fresh petition after generating real power at BBGTPS as and when emergency arises.

4.2. In respect of the first prayer, TANGEDCO has sought for the Commission's approval and ratification for having generated real power of 10.5080 MUs at the fuel cost of Rs.16.66 Crores in FY2015-16 under unavoidable emergency circumstances in order to avoid cascade tripping of generating units and EHT / HT feeders and blackout in the area of Chennai city area during critical situation thereby maintaining stability of Chennai network by considering BBGTPS as a part of Grid Stability Mechanism.

4.3. TANGEDCO has furnished the reasons for operating the power station month wise for the FY 2015-16 and the reasons submitted were analysed and seems to be justifiable. Hence, the generation of real power by the BBGTPS is hereby approved and ratified.

4.4. TANGEDCO has also deposed that the present petition is filed for admitting the fuel cost of Rs.16.66 Crores for generation of 10.508 MUs. The fuel cost incurred for generation of 10.508 MUs is high and the energy available from the BBGTPS is outside Merit Order Dispatch. The fuel cost is much higher than other sources of fuel as the plant is operated with Naphtha. In respect of own generation and power purchase from high cost sources for the purpose of ARR, the Commission has allowed only up to the average rate of realization of the Petitioner . Accordingly, now in respect of the present Miscellaneous Petition also, Commission allows the power purchase cost only upto the average rate of realization for the purpose of ARR.

4.5. In respect of the second prayer seeking approval of the Commission for real power generation at BBGTPS during trial run of the units / Mock drill, approval has already been granted in M.P. No.32 of 2014 to allow the machines to operate under trial run to check their healthiness and to keep them ready for emergency purposes. Hence, approval is now accorded that during trial run of the units/Mock drill the plant is permitted to run during such hours.

4.6. In respect of the third prayer, as to liberty to file a fresh petition after generating real power at BBGTPS as and when emergency arises, Commission has already made it very clear in its order in M.P. No. 30 of 2015, Order dated 25-04-2016, that TANGEDCO shall take prior approval from the Commission for generation of power as the power station is outside Merit Order Dispatch. However, if generation of power is necessitated due to emergent situations, TANGEDCO may take the approval of the Commission subsequently on a case to case basis periodically.

With the above Orders of the Commission, the present M.P. No. 12 of 2016 is disposed of.

5. Appeal:-

An appeal against this order shall lie before the Appellate Tribunal for Electricity under section 111 of the Electricity Act, 2003 within a period of 45 days from the date of receipt of a copy of this order by the aggrieved person.

(Sd .....)	(Sd.....)	(Sd.....)
(Dr.T.Prabhakara Rao)	**(G.Rajagopal)**	**(S.Akshayakumar)**
Member	**Member**	**Chairman**

/ True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission