

THE STATE ELECTRICITY OMBUDSMAN

Pallikkavil Building, Mamangalam-Anchumana Temple Road
Opp: Kochi Corporation Regional Office, Edappally, Kochi-682 024
www.keralaeo.org Ph: 0484 2346488, Mob: 91 9567414885
Email:ombudsman.electricity@gmail.com

Appeal Petition No. P/ 307 / 2012.

(Present: Sri. T P Vivekanandan)

Appellant : M/S. Sree Lakshmi Polymers,
Vaikom Road, Udayamperoor,
Ernakulum Dt. Pin: 682 307.

Respondent : The Assistant Executive Engineer
Electrical Sub Division, KSEBoard,
Tripunithura, Ernakulum Dt.

ORDER.

Background of the Case: -

The appellant, M/s Sree Lakshmi Polymers, is an industrial consumer with No. 11881 of Electrical Section, Udayamperoor. The consumer had applied for enhancement of his 'connected load' from 116 KVA to 226 KVA on 05.07.2012. But his request was denied by the respondent for the reason that the increase in connected load above 150 KVA is not possible under an LT service connection. Being aggrieved with the said decision, the consumer filed petition before the CGRF, Ernakulum, on 03. 08.2012. The CGRF dismissed the Petition on the ground that a consumer cannot claim to be retained as a LT service connection, when his 'connected load' has crossed the limit of 100 KVA (up to 150 KVA allowed to those as on the date of implementation of Electricity Supply Code, 2005) and hence found the petition devoid of merits. Here, the consumer has demanded his connected load to be increased to 226 KVA, but at the same time he promises to limit his maximum demand (use of electricity) with in 'contract demand' of 116 KVA itself. Still aggrieved by the decision of CGRF vide order No. CGRF-CR/ Comp. 50/ 2012-13 dated 1.10.2012, the appellant has filed the Appeal petition before this Forum on 8.10.2012.

Arguments of the Appellant: -

The arguments advanced by the appellant in his petition are the following.

- 1).The order passed by CGRF is erroneous, illegal and without considering the evidence and facts submitted by the appellant.
- 2).The copy of the order in DP/84 /2010, was submitted by the appellant as document before CGRF (as Ext-3). Even this was misinterpreted as a document submitted by KSEB and considered it in favor of KSEB. But in fact it is in favor of the consumer.

- 3). Again the interpretation of the CGRF is wrong in case of clause 3, analysis of the Commission in DP 84 / 2010 order. The order is very specific and clear in the table given and as per sub clause 5(a) of clause 4 of the Electricity Supply Code, the maximum contract demand at 415 V shall be shown as 100 KVA. The table got two columns, one for 'connected load' and other for 'contract demand'. At present 100 KVA is written only in the connected load column and the Commission has ordered it to write the same in contract demand column also. The Sub clause 5(b) of clause 4 of the Supply Code is again very specific permitting the load up to 150 KVA (contract demand or connected load) for those consumers existing before 2005. The CGRF hide the fact that agreement was executed for 116 KV Contract Demand and the consumer is praying for the same even when his demand is less.
- 4). In the sub clause 5 (b) of clause 4 of Supply Code, the permission is up to a load of 100 VA. The load can be either connected load or contract demand. After executing agreement for 116 KVA, the KSEB cannot back out violating the agreement, Act, Rules and Regulations.
- 5). All electrical gadgets are designed to withstand a particular level of surges, excess load, excess voltage, excess current, PF variation etc. for a specific magnitude and time.
- 6). The loading of Transformer is directly related with the generation of heat and hence half an hour average is taken as permissible maximum demand, when deciding the capacity of Transformer. More than that, CGRF is also not aware about standby diversity in an installation. In distribution transformer the contract demand load will be more than 2 times the capacity of the transformer. The CGRF is also not aware about this kind of technical details.
- 7). The concept of Fixed charges based on contract demand is because of the fact that the design aspects of power engineering is based on maximum demand and not on connected load.
- 8). For a clerk or SS of KSEB, the contract demand is treated as connected load for billing purpose, but for Engineers, it is the fundamental data for system design. Hence the capacity of Transformers and its safety can be attributed only to maximum demand.

The following reliefs are sought for: -

- a). To give interim direction to run all the machines together and to see the effect on Transformers and its meter.
- b). To give permission to commission the factory till hearing and disposal of the petition.
- c). To arrange for an urgent hearing and to dispose the petition allowing the addition of new loads.

Arguments of the Respondent: -

The respondent has filed the statement of facts against the averments in the Appeal petition. The main contentions of the respondent are the following.

- 1). Sri. N.K. Mohanan, is running an industrial unit named M/s Sreelakshmy Polymers, Nadakkavu, Ernakulum, with LT consumer No: 11881 under Electrical Section, Udayamperoor,. He has applied for enhancing the existing connected load of his Unit from 103.75 KW (116 KVA) to 202.2 KW (226 KVA) for connecting an additional load of 98.44 KW without changing his contract demand. The application along with the completion report for additional load was submitted by the consumer and remitted necessary AF & TF on 05.07.2012.

2). The present connected load of the consumer is 103.75 KW (116 KVA) and its date of connection is on 10.03.2003. The TOD agreement executed by the consumer was for a contract demand of 116 KVA (104 KW) in LT (415 Volt) supply system. The supply to the consumer is fed from a 160 KVA transformer. Its capacity was enhanced from 100 KVA to 160 KVA on MG basis during 11/ 2010 vide MG No.2/2010-11, as per request of the consumer for enhancing his connected load from 30 KW to 103.75 KW. Now the consumer has again applied for further enhancement of this connected load from 103.75 KW (116 KVA) to 202.2 KW (226 KVA), under LT- TOD tariff without changing his CD.

3). The respondent reports that the above 160 KVA transformer was installed on MG basis and is not for a particular consumer and it is the property of KSEB, which was utilized for giving supply to the other industrial consumers, public and also for street light load. Hence 80% of loading of the transformer is safer to the system. The repair and maintenance of this transformer is done by the KSEB. Here there is no particular means to identify who will bear the risk to the transformer, if the consumer uses his maximum connected load (more than 160 KVA) instead of his contract demand by mistakes, the transformer will be got over loaded and there is every chance to become faulty. The consumer cannot control the total load (202.2KW) at all times properly.

4).The Hon Commission, in its order dated 15.03.2011, has clearly mentioned that extending the capacity limit to 150 KVA for LT consumers having maximum demand cannot be allowed as the capacity limit for LT supply which is already fixed as 100 KVA. In the table as per sub clause (5) (a) of clause 4 of Kerala Electricity Supply Code, 2005, Maximum Contract Demand for 415 volt supply shall be 100 KVA. The maximum connected load permitted for the existing LT consumer installation on the date of implementation of Kerala Electricity Supply Code 2005 under LT supply (415 Volt) is up to a maximum load of 150 KVA and also new consumers maximum connected load in premises is limited to 100 KVA.

5). As per the Terms and Conditions of Supply Code, 2005, the connected load means the sum of rated capacities in terms of KW or KVA of all energy consuming devices in consumer's installation. As per the BO (FM) No.1611/2011 (KSEB/TRAC/COMP9(R)/16/10 Tvm dated 27.06.2011, a change in definition of connected load in the last sentence of clause 2 (1) (1) of Kerala Electricity Code 2005 as in the case of opting for maximum demand based tariff, for penalization in LT connection and for tariff purpose, the contract demand shall be treated as connected load and accept modification in supply code for including 100 KVA as the maximum contract demand for 415 volt LT system in sub clause (5) (a) of clause 4 of Kerala Supply Code Regulations 2005. Hence the increase in connected load from 100 KVA is not allowed for the present LT consumers under LT TOD Tariff and all other purpose the connected load will be the total capacities of the connected equipments (KVA or KW) and the same was already mentioned under clause 1 (b) on the TOD agreement executed by the consumer on 26.09.2011.

6). In these circumstances a letter was given to the consumer vide No. DB/ PA/12-13/42 dated 30.07.2012 to submit necessary application with connected documents for upgrading the existing LT power supply to HT supply for enhancing the present connected load of the consumer from 116

KVA (103.75 KW) to 226 KVA (202.2 KW). Based on the above report of KSEB, the Hon Chairperson, CGRF, Ernakulam found no merit in the case and dismissed the petition on 01.10.2012.

Analysis and Findings:

The Hearing of the Case was conducted on 29.11.2012 in my chamber at Edappally, and Mr. Shaji Sebastian and Mr. K.N. Sanoj, Manager (Administration), appeared for the appellant's side and Mr. K.V Venugopalan, Assistant Exe. Engineer, Electrical Sub Division, Trippunithura, represented the Respondent side. On examining the Petition and argument note filed by the Appellant, the counter to the petition of the Respondent, perusing the documents and considering the circumstances and facts of the case, this Forum comes to the following conclusions leading to the decision s thereof.

Though the consumer belonged to LT category (maximum 100 KVA load limit), he was sanctioned a contract demand (CD) of 116 KVA, as those consumers existing as on 2005 were eligible up to 150 KVA load, under LT system. The electric supply to the consumer is fed from a 160 KVA transformer. The capacity of the transformer was enhanced from 100 KVA to 160 KVA on MG basis in 11/2010, as per the request of consumer, for enhancing his connected load to 116 KVA. The Appellant executed a TOD agreement for a contract demand of 116 KVA in LT (415Volt) supply system, in 9/2011. The appellant argues that even if his connected load/ CD is 116 KVA, his maximum demand has never exceeded 64 KVA, so that the 160 KVA Transformer is actually under loaded and underutilized.

Again the consumer has applied for further enhancement of his connected load from 116 KVA to 226 KVA under LT- TOD tariff scheme, without changing his CD (contract demand) of 116 KVA. The request to enhance the connected load above 150 KVA was denied by KSEB, as it is the limit for LT consumers. The appellant's view is that even if he raises his connected load from 116 KVA to 226 KVA, his maximum demand will never go above his CD of 116 KVA, as his Unit has such a diversity factor. The respondent opposes this by stating that any consumption over the maximum capacity limit of the Transformer (more than 160 KVA), may be either due to urgent need of the consumer or added by mistakes, may result in the total failure of the transformer, if the consumer is allowed to connect a load of 226 KVA on a 160 KVA transformer. Not only that, the transformer will get overloaded and overheated and eventually will break down, if allowed excess load, they argue.

The Distribution Transformers are not supposed to carry sustained overload. In many cases, the Distn. Transformers fail was analyzed as due to prolonged overloading or due to unbalanced load. Experience has proved that, the right kind of protection against overload and unbalance load, can cater a longer life to transformer. In usual practice, simple protective schemes are provided to Distn transformers of rating up to 1000 KVA, as other schemes are costly. The primary (High Voltage) side of the Transformers is usually protected by Drop-out fuses (DO fuse) and Lightning Arrestors (LA) and the Low voltage side by rewirable type kit-kat fuses. However, the modern trend is to protect the transformer by Moulded Case Circuit Breakers (MCCB) provided on the secondary (LV) side.

The life of a Transformer depends on the maximum temperature rise permitted for the Unit. In case the temperature rise is beyond a certain limit, the transformer gets overheated causing faster rate of deterioration of its core, windings and the insulating materials resulting in an earlier break down. The only certain statement is that the winding must not overheat to a temperature of above

95°C, which is considered to be the normal maximum working value, beyond which a further rise of 8 to 10°C, if sustained, will half the life of the Unit. No circuit breakers are normally provided, making the fuse protection, the only means for automatic isolation for these Distn. Transformers.

Moreover, In this particular case, the respondent contents that the existing 160 KVA transformer, is not used by the appellant consumer alone, but is being used for giving supply to other industrial consumers, public and for street light. The appellant is not provided with an exclusive transformer for his use, even though his CD or connected load is above 100 KVA. There is risk in maintaining supply to other consumers, in case it burns out due to the appellant using his load in excess of the capacity of the Transformer.

During Hearing the consumer expressed willingness to execute indemnity bond for replacement of transformer on failure. They also expressed readiness to provide over current and earth fault protection schemes for the safety of transformer. These are good and welcome suggestions that may solve the problem, but has to be got endorsed from the Hon Commission, to put to practice.

The appellant's view, that even if he raises his connected load from 116 KVA to 226 KVA, his maximum demand will never rise above his contract demand of 116 KVA, in view of the diversity factor prevailing in his industry is not acceptable, as the consumer cannot control his Load without using protective schemes and is not provided to Distn Transformers of KSEB now. Any connection of excess load over and above the capacity of the Transformer (here, 160 KVA), either by accident or purposefully done as per requirement for a few minutes, will overheat the transformer resulting in total failure of the transformer. In the case of HT/EHT consumers, the Transformer is exclusively provided for the consumer at his cost and is responsible for its care. But in LT system, Transformer capacity is shared by many consumers and if any one consumer put extra load, than its capacity rating for prolonged time, it can cause its failure. The maximum Demand indicator gives the picture of average load of 30 minutes time duration and cannot give the quantum of 'sustained overload' used for a short duration, say 10 or 15 minutes, which is sufficient for the failure of Transformer. Hence I am of the view that allotting excess 'Connected load' than the capacity of a Transformer to one consumer alone, without providing protective scheme like MCCB or so, is detrimental to the group of other consumers fed from the same transformer. In such special cases, the factors used to determine the permissible safe load on Transformer like the 'diversity factor' is found insignificant.

DECISION: -

The Commission has disposed a petition filed by KSSIA by issuing order dated 15th March 2011, in DP/ 84 /2010, amending certain clauses of Kerala Electricity Supply Code Regulations, 2005, etc. The Commission has accepted the change in the definition in clause 2(1)(i) of Kerala Electricity Supply Code 2005 and therein the following amendment has been made:- "In the case of LT connections opting for Maximum Demand based tariff, HT connections and EHT connections, the Contract Demand shall be treated as Connected Load". The other two important decisions were; (i). In the table, as per sub clause (5) (a) of Clause 4 of the Kerala Electricity Supply Code, Maximum Contract Demand for 415V shall be shown as 100 KVA.

(ii). Extending the capacity limit to 150 KVA for LT consumers having Maximum Demand based tariff cannot be allowed as the load capacity limit for LT supply is already fixed as 100 KVA.

The KSEB has permitted load up to 150 KVA (CD or connected load) for LT consumers existing as on 2005, but the Hon Commission has restricted the Contact Demand for LT category to 100 KVA only, for those who opted for TOD based tariff, irrespective of whether the consumer belonged to, prior to introduction of Electricity Supply code in 2005 or after that. That is to say, those who opt for TOD based tariff can have a maximum Contract Demand (CD) of 100 KVA only.

The Hon commission has categorically decided that the Licensee should be concerned with the Contract Demand of the consumer only and not with the connected load of the consumer, as in par with HT and EHT consumers, in the case of LT consumers opting for Maximum Demand based tariff. In this case, the consumer has opted for MD based tariff. But the Hon Commission has also made it clear that, extending the capacity limit to 150 KVA for LT consumers having Maximum Demand based tariff, cannot be allowed as the load capacity limit for LT supply is already fixed as 100 KVA. Here, the Contract demand of the consumer is 116 KVA, which is not permissible, as per the Hon Commission's order, for an LT service connection, who has opted for TOD based tariff. Hence the prayer of the appellant to allot, 226 KVA as Connected load with 116 KVA as his Contract Demand, is not sustainable as per the above Hon Commission's order.

The consumer can avail more than 150 KVA as connected load, by converting to HT consumer status or by enhancing the transformer capacity to cater the excess connected load as proposed by the respondent, if he remains in the group of consumers fed from the same transformer, since the appellant happens to be an existing consumer sanctioned with 116 KVA contract demand.

Having concluded and decided as above, it is ordered accordingly. The appeal Petition filed by the appellant is found devoid of merits and hence stands dismissed. No order on costs.

Dated 8th May, 2013,

Electricity Ombudsman.

Ref. No. P / 307 / 2012 / 1732/Dated 08.05.2013.

Forwarded to

- 1). M/S. Sreelakshmi Polymers,
Vaikom Road, Udayamperoor, Ernakulum-682 307.
- 2). The Assistant Executive Engineer
Electrical Sub Division, KSE Board, Tripunithura, Ernakulum.

Copy to

- (1). The Secretary, Kerala State Electricity Regulatory Commission,
KPFCBhavanam, Vellayambalam, Thiruvananthapuram-10.
- (2). The Secretary, KSEBoard,
Vydyuthibhavanam, Pattom, Thiruvananthapuram-4.
- (3). The Chairperson, Consumer Grievance Redressal Forum,
KSEBoard, Power house Buildings, Kombara, Ernakulum-682 018.