

THE STATE ELECTRICITY OMBUDSMAN

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APPEAL PETITION No. P/051/2022

(Present: A. Chandrakumaran Nair)

Dated: 19th October, 2022

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|------------|---|--|
| Appellant | : | Sri. M. Padmanabhan, Sr. Divisional Electrical Engineer, TRD, Southern Railway, Palakkad Dist. 678 002 |
| Respondent | : | <ol style="list-style-type: none"> 1) Deputy Chief Engineer, Transmission Circle, KSEB Ltd., Kannur Dist. 2) Special Officer (Revenue) KSEB Ltd., Pattom, Thiruvananthapuram-4. 3) Asst. Executive Engineer, Electrical Sub Division., KSEB Ltd., Uppala, Kasaragod Dist. |

ORDER

Background of the case:

The appellant is the Senior Divisional Electrical Engineer, Traction Distribution, Southern Railway, Palakkad Division. The appeal petition is in delay in the enhancement of CMD at Uppala Traction Substation bearing consumer number 30/8392. The Contract Demand of Uppala Traction Substation is 5 MVA and they applied to enhance the Contract Demand to 8 MVA during January 2020. The Traction Substation is receiving power supply in 110 kV at two phase and converting into single phase 25 kV for providing power supply requirement of electric trains. On following the green energy concept, Indian Railway is on a mission for 100% electrification of all routes. The Railway is the public transport system under Govt. of India meeting the transportation needs of common public. As all the trains were converted into

electric trans, the power requirement has increased and hence, the demand increased and applied to the Licensee for the enhancement. Now, the Licensee is charging penalty on excess MD and Railway is paying the penalty when it is legally requested for the enhancement.

Arguments of the appellant:

Uppala Traction substation (UAA/TSS) of Southern Railway. Palakkad Division, situated at a strategic location bordering Kerala & Karnataka states was commissioned on date 12.01.2018, is having a CMD of 5000kVA fixed at the time of commissioning. Since then, the number of trains dealt by section fed by this TSS has increased many folds, whereas the CMD remained at 5000kVA which is very less compared to the load to deal with. The matter is complicated by the feeding arrangements of KSEBL for Uppala/TSS. Uppala is fed by 110kV substation at Kubanoor which is fed from KPTCL through Manjeshwaram - Konaje feeder. Since the traction load must be fed through dedicated bay and feeders, the KSEBL's claim of tripping at KSEBL substations and disturbance of other customers are not acceptable.

Railways, being one of the major and largest consumers of KSEBL, it is responsibility of KSEBL to give due regards to the contract agreements. Further Railways being a National Organisation interested with public transportation, will be seriously affected with this kind of supply interruptions/failures. Keeping this in mind with obligation to the travelling public and not to disturb the day today train operations, the Palakkad Division of Southern Railway has promptly approached KSEBL for necessary enhancement of CMD at Uppala Traction Substation.

It is because of KSEBL's infrastructural constraints, the matter is put on hold for reasons beyond imagination. There is no guideline of any statutory authorities for stopping the enhancement of CMD for petty reasons like overloading and voltage unbalance, which is not quantified when the consumer has fulfilled all its obligations.

Railways had submitted application for enhancement of CMD of Uppala/TSS from 5 MVA to 8 MVA during January 2020. Details of excess MD

penalty from the time of application of enhancement of CMD of TSS Uppala, has been worked out to an amount of Rs 17,25,000/-. Railway pleads that KSEBL may be directed to refund this amount to Railways as this is not due to Railway's fault.

Further, the claim of KSEBL that the instantaneous traction load is much more and the two-phase load of Railway traction creates unbalance in the system, is also not acceptable as the same system is being adopted all over India successfully and in force with much more connected load than in Kerala territory. Moreover, this may be offset due to the cyclic distribution of phase sequence in the nearby Traction substations from the grid. Thus, the unbalanced loading of 110kV feeders also be managed.

KSEBL's claim that Railways drawing more momentary overloads is agreed but the resultant voltage unbalance in the system is well within CEA limits of 3%. It is worthwhile to be mentioned here that Indian Railway is working PAN India basis and drawing power from different EB's without any disturbance on both sides. As such the present objection raised by KSEBL for enhancement of CMD is needlessly created only to tarnish the Railway's image with far reaching consequences, as this will affect the train operations which in turn affect the day today life of the common public.

The Railways request for enhancement of CMD of Uppala/TSS from 5000kVA to 8000kVA may be approved by KSEBL and necessary orders may kindly be issued in this regard.

The representative of Railways was very well present during the second hearing of CGRF on 16.06.2022. Proof for this is also submitted in the form of letter submitted in the CGRF office on 16.06.22. Even after the due period of disposal time from the date of admission of the complaint in CGRF there was no communication received from the CGRF, Southern Railway is forced to approach this Authority. As such the decision of CGRF is partisan and hence, Railway is seeking the due justice from this Authority.

Arguments of the respondent:

The Traction Substation, Uppala is supplied from a dedicated feeder bay through 110 kV UG cable from 110 kV Substation, Kubanoor. 110kV Substation Kubanoor is normally fed from Karnataka (KPTCL) supply through 110 kV interstate feeders Konaje - Manjeswaram. The total power that can be drawn from KFTCL is limited to 22MW from which, the load of 110 kV Substation Manjeswaram (nearly 9MVA), 110 kV substation Kubanoor (nearly 8MVA) and Railway Traction load (5MVA) are met with. The agreed Contract Demand of Traction Substation, Uppala at present is 5MVA. The appellant M/s Railways had submitted application for enhancement of CMD of TSS, Uppala to 8 MVA from existing 5 MVA during January 2020.

Regarding the request from M/s Railways for CMD enhancement of TSS Uppala, Load flow study request was submitted to Power System Engineering wing for ascertaining the feasibility of enhancement of CMD by 3MVA. The load flow study report observed that whatever be the load at 110kV level and below at Manjeswaram and the Kubanoor Substations, that is to be met from KPTCL supply. LFS report also remarked that even with 5MVA traction load (P.F varies between 0.6 to 0.8), total requirement of power from KPTCL Is 24.1MW. If the CMD of M/s Railways has to be increased from 5MVA to 8 MVA the power input from the Konaje Substation has to be increased to 29.29 MW and the Konaje Substation (KPTCL) should also support the momentary overload that may occur in the Traction.

Even though the Contract Demand of TSS Uppala is 5MVA, the appellant is drawing overloads up to 120A for short duration. The short duration value of traction load sometimes hit nearly 170A and lasts for 3 minutes. From the load flow study, it is observed that the short duration traction load is around 30MVA. This is quite abnormal as compared to the load current pattern of other EHT consumers of KSEBL. This is just because of the method of availing power supply in EHT Network. M/s Railways is not availing power supply in 3 phases. Instead, they avail single phase by connecting only two of the 3 phases supplied by KSEBL and this is just because of the infrastructural constraints of M/s Railways. KSEBL is not facing any such issues with any other EHT consumers. KSEBL is forced to provide power supply to M/S Railways in such manner due

to the present power availing style of M/s Railways unlike other EHT consumers, who all are availing the power in 3 phases. This causes higher currents in system lines, which are beyond the load current expected for the agreed Contract Demand. Hence, KSEBL facing severe problem in utilization of the full capacity of the system and lines due to the unusual method of availing power supply by M/s Railways due to the constraints of their infrastructure. This is very clear from the above mentioned values of the currents. This short duration overload is causing tripping of upstream EHT feeders which results interruption to all other consumers of KSEBL also. Hence in short, M/s Railways due to their special style of availing power in EHV level violates the grid discipline, causes unscheduled interruptions, creates power quality issues and connectivity problems at Solar Generators connected with substations feeding to Traction loads.

KSEBL had conducted power quality studies in three traction feeders emanating from various KSEBL 110 kV Substations and in general the major observations are

- Current THD is found to be extremely high.
- Voltage THD is high
- Crest factor of current is very high.
- Crest factor of voltage is beyond limit.

The reports substantiate the fact that power quality is seriously affected by the unbalanced loading pattern of Traction load. Considering this, M/s Railways is requested to conduct detailed power quality study at Traction Substations and to install required RPQC of sufficient capacity and other accessories accordingly But, M/s Railways has not responded.

Also, in the present scenario, it is feasible to enhance the Contract Demand of TSS, Uppala to 8MVA only if the power availability from KPTCL is increased to 29.29 MW. Also, M/s. Railways has to furnish the continuous and maximum possible instantaneous load details of traction load for looking into the matter of the soundness of the power infrastructure facilities available from the Konaje Substation to the Kubanoor Substation to meet the instantaneous traction load.

From Kubanoor to Thoudugoli (Boarder of Kerala), the 110kV Network is sound. But for importing more power from Karnataka, the strengthening of Konaje- Thoudugoli line is required which comes under the scope of M/s. KPTCL and is to be arranged by concerned state utility. The Chief Engineer, Transmission (North) attempted to convene a meeting with KPTCL authorities regarding the requirement of additional power from Traction Substation, Uppala and intimated the Superintending Engineer, KPTCL, Mangalore to attend the meeting. But there was no response from KPTCL side regarding this.

It is the responsibility of M/s Railways to draw only the allotted power till the enhanced capacity is sanctioned, maintain grid discipline, and limit harmonics and over drawl in single phase. Hence, it is not recommended to condone the penalty for drawing excess CMD. Penalty for excess contract demand is charged only to curb the consumer causing grid indiscipline.

As per cause 6.4 of KSERC (Connectivity and intra state open access regulations 2013), the STU shall:

a) Accept the application with such modification or such conditions as may be stipulated by other agencies which are not inconsistent with these regulations.

b) Reject the application for reasons to be recorded in writing, if such application is not in accordance with the provisions of these regulations or grant of connectivity is not technically feasible.

From above, the application can be rejected if it violates grid discipline that weakens power quality.

KSERC vide order dated 12-12-2019 (Petition No OP 31/19) had accepted KSEBL's view about unbalance effect of Railway Traction loads in the grid i.e., the Commission cannot approve the prayer of the petitioner to declare that 2-phase power supply system existing in the Southern Railway has no unbalance effect in upstream 3-phase power grid. It is also clarified that if Railways does not propose to maintain contract demand with KSEBL, the KSEBL shall have no obligation to provide any back up supply to the petitioner at the traction tariff approved by the Commission. In addition to the load unbalance, following power quality issues are also badly affecting to KSEBL grid by availing two phase

supply i.e., negative phase sequence current (more than 30%), THD (more than 25%), Zero sequence current and other issues already addressed to M/s. Indian Railway. All the above issues shall be affecting severely the life span of each vital equipment of Substations.

The mere enhancement of Contract Demand and revising relay setting accordingly will not relieve the grid from disturbance caused by unbalance, harmonics, damping etc. Processing further on the request of enhancement of Contract Demand of Traction Substation Uppala, the detailed power quality study to be conducted and reported by M/s Railways. KSEBL could not provide the additional Contract Demand as requested by M/s. Railways for their traction substation at Uppala due to all the above-mentioned issues.

All these issues are because of the method of availing power supply in EHT Network by M/s. Railways. M/s Railways is not availing power supply in 3 phases. Instead, they avail in single phase by connecting only two of the 3 phases supplied by KSEBL and this is just because of the infrastructural constraints of M/s Railways. To mitigate the issues, KSEBL is proposing to install Scott connected transformers at feeding stations connected to traction substations if M/s Railway is willing to deposit the required expense. In addition to this M/s Railways should also consider options for availing alternate feeding to their traction substations especially from 220kV Substations for ensuring redundancy.

CGRF had conducted two hearings regarding the petition on 25.05.2022 and 16.06.2022. KSEBL officials had attended the hearing both time but there was no participation from the side of the petitioner, M/s Railways both times. Due to this, the Forum prima facia assessed that the petitioner is incurious to move with the petition and the grievance is set aside.

Response of appellant on the statement of the Respondent

In general, the difficulty faced by KSEBL for arranging supply as demanded by the Southern Railway, this is of least Importance for Southern Railway and the applicant in connection agreement number 04/2017-18. Since Railway is a bulk consumer of electrical energy and focused on running the train

with utmost safety and punctuality. Whereas the licensee the KSEBL, in the same connection agreement number 04/2017-18 is obliged to provide the applicant its share of power as and when demanded without any obstruction or objection.

As such this argument has no meaning in justifying the KSEBL stand against demands raised by the Southern Railway, Palakkad Division. It is the responsibility of the licensee to provide the consumers the power it demands as per the defined tariff.

Indian Railway network spread across the country adopting uniform method of power consumption by drawing power from the grid at 2 phases and converting it into single phase 25kV 50Hz supply approved by the Railway Board and RDSO, Laxmanpuri. This is being practiced all over India without any hindrances in the grid. It is to be mentioned here that Southern Railway Palakkad Division is drawing power from KSEBL right from the year 1998 Fort Kanjikode/TSS. Since then, there was no disturbance in the grid or violation of grid has been mentioned by any authority till date. Further the connectivity to the TSS were granted after conducting Load Flow Study and nature of the Traction load and an agreement for supply of energy (EHT) Number EHT2/2017-18/CEDNM/7/21/17 prepared between Chief Engineer Distribution, North Malabar KSEBL / Kannur and Sr.DEE/Tr.D/Palakkad. The agreement Para 1(a) clearly stipulates that "the Licensee shall continue to supply to the consumer and the consumer shall take from the Licensee all the energy required for operating the consumer's equipment and lighting in his premises at Traction Substation, Uppala Railway Station Southern Railway there by the licensee has already committed up to a total quantity of 5000kVA and the supply to the consumer shall be in the form of 2 phase alternating current and nominal frequency of 50 cycles/ seconds. Thus, the licensee is fully aware that the Railway is drawing power on 2 phases at the time of connectivity. It is to be retreated here that before the connectivity agreement a detailed Feasibility Study as well as Power Quality Study has been conducted and the KSEBL was fully satisfied with load to be drawn by Southern Railway from the grid. As such, it

is surprised to know that suddenly how the load has been so much deteriorated without making any basic changes in the load or connected equipments.

However, the KSEBL is projecting the nature of supply drawn as new phenomena. The KSEBL's demand for Power Quality Study at this stage is un reasonable and unwarranted for as it is not mentioning anywhere in the supply agreement, connectivity agreement, Supply Code 2014. The same is not mentioned in the KSEBL's order dtd.12.12.2019 either. As such it is not acceptable to Southern Railway as a party to the connectivity agreement 04/2017-18. The railway has no infrastructural constrains as it is the age-old practice to draw supply in two phases for the Traction purposes. It is the KSEBL who is having the infrastructural constrains which does not permit it to transmit the power demanded by Railways, in order to cover up their inability and inadequacy in their system they are coming up with silly excuses power quality study, grid discipline, system disturbance etc. which is not desirable.

Southern Railway has already assessed its load and power requirement there by requested KSEBL for the enhancement of-CMD from by the existing 5000kVA to 8000kVA at appropriate time.

KSEBL is trying to divert the attention from matter of importance. The arrangement of power through interstate grid is a matter of concern for the KSEBL only and as a consumer, Railway has the right to ask for more power when needed.

Because of KSEBL's infrastructural deficiencies Railway cannot be made to suffer as number of Trains are increasing along with fast electrification of routes and as per the demand from the public. It is the responsibility of Railways towards the common public to meet their demand as the largest and most economical transporter, always working at the National interest.

The clause 6(4) of Kerala State Electricity Regulatory Commission (Connectivity and Infra-state Open Access) Regulations, 2013 stipulates about the grant of connectivity to Intra state Transmission system for the purpose of open access and it is not applicable in this case. If so, the clause 6 (3) mention about "the STU or the Transmission licensee other than STU shall, in

consultation and through co-ordination with other agencies involved in the intra-state transmission system and/or distribution system and the State Load Dispatch Centre, process the application and carry out the necessary feasibility study in accordance with the provisions of the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 as amended from time to time and IEGC / State Grid Code." before granting a connection and there is no provision in either KSERC (Connectivity and Intra-state Open Access) Regulations, 2013 regulation or Kerala Electricity Supply Code 2014 for any interim feasibility or power quality Study, So far the KSEBL has unable to provide the sufficient proof of violation of grid discipline by Southern Railway and hence enhancement of CMD may be considered early.

KSERC vide order dated 12.12,2019 asked KSEBL to quantify the voltage unbalance load unbalance, Voltage regular, total harmonic distortion, Negative phase sequence current etc., which the KSEBL was not able to reply till date.

The enhancement of CMD was requested because of the increase in the load. As such, if the CMD is enhanced, the problem of over loading will automatically be solved for which the KSEBL is not prepared infrastructurally and hence raising all objections. Since the method of availing power in 2 phases by Railways is not a new phenomenon and it is successfully followed by Indian Railway all over India without any problem in the grid. It is not desirable to change the system which will cost huge revenue expenditure to the National exchequer. As such KSEBL is requested to enhance the CMD immediately.

After approaching the CGRF, Southern Railway had waited too long and there was no response, finally Railway was forced to approach this Authority considering the above facts. In the Public and National Interest, it is prayed that to this Authority to advise KSEBL to enhance the CMD of Uppala/TSS immediately.

Analysis and findings:

The hearing of the case was conducted on 30-09-2022 in the office of the State Electricity Ombudsman, Near Gandhi Square, Ernakulam South. The appellant Sri. Padmanabhan, Sr.DEE/Tr.D of Southern Railway, Palakkad along

with the Advocate Sri. Syju. K. were attended the hearing from the appellant's side and Sri. Justin. R., Special Officer (Revenue), Trivandrum, Sri. Anil Kumar. G., Dy. Chief Engineer, Transmission Circle, Kannur and Sri. Nandakumar. P.P., Assistant Executive Engineer, Electrical Sub Division, KSEBL, Uppala, Kasaragod attended the hearing from the respondent's side. Subsequently, Dy. Chief Engineer, KSEBL has submitted the argument note vide letter dated 18-10-2022. On examining the appeal petition, the arguments filed by the appellant, the statement of facts of the respondent, argument note submitted, perusing the documents attached and considering all the facts and circumstances of the case, this Authority comes to the following findings and conclusions leading to the decision thereof.

Indian Railway is the common man's conveyance mode. As part of the Green Initiative, Indian Railway also converted the Diesel Locomotive to Electric trains and the tracks are getting electrified. Most of the trains are also converted into electric trains, which increases the load of the Electric Traction Substations.

The Contract Demand of Uppala Substation is 5 MVA and the Railway planned to enhance the Contract Demand and accordingly they approached the Licensee, the KSEBL for enhancement of load and the application submitted during January 2020. Licensee responded to Railway, asking the application fee on 29-06-2021 and fees paid by Railway on 07-07-2021 and the enhancement is not sanctioned till date.

The Section 99 of Kerala Electricity Supply Code 2014 "Enhancement of connected load or contract demand" states as: -

99 (1) Consumer shall apply to the licensee for enhancement of contract demand in case of consumers under demand-based tariff and of connected load in the case of others, in the form specified in Annexure -11 to the Code and the licensee shall process the application form in accordance with the relevant provisions of the Code.

99 (2) For site inspection as well as issuance and payment of demand note for the estimated cost of work if any, both the licensee and the applicant shall follow, mutatis mutandis the procedure and timelines as laid down in regulations 77 to 83 of the Code.

99 (3) The licensee shall give a written intimation along with the demand note to the consumer which shall include the following:-

(a) whether the additional power can be supplied at the existing supply voltage or at a higher voltage; (b) addition or alteration, if any, required to be made to the distribution system and the expenditure to be borne by the consumer, on that account; (c) amount of additional security deposit and expenditure for alteration of service line and apparatus, if any, to be deposited in advance by the consumer; (d) change in classification of the consumer and applicability of tariff, if required; and (e) any other information relevant to the issue.

99 (4) The application for enhancement of load shall not be considered if the consumer is in arrears of payment of the dues payable to the licensee.

99 (5) If the enhancement of load is feasible, the consumer shall:-

(a) pay additional security deposit, expenditure for alteration of service line and apparatus, if any, required to be made, and the cost to be borne by the consumer for modification for distribution system if any, within fifteen days of receipt of the demand note; and

(b) execute a supplementary agreement;

99 (6) If the consumer pays the required charges and executes a supplementary agreement, the licensee shall execute the work of modification of the distribution system, service line or meter and other apparatus within the time line specified under regulation 85, mutatis mutandis, and sanction the additional contract demand or connected load.

99 (7) The licensee shall issue order on the application for the enhancement of load within thirty days from the date of its receipt and intimate the applicant whether or not the enhancement of load is sanctioned.

The above Section is very clear about the process to be adopted by the Licensee for the enhancement of Contract Demand. The appellant has submitted the request in time. The Licensee is not in position to sanction the additional demand due to the load restrictions of KPTCL. The Licensee has been communicated that the request for enhancement could not be admitted vide their letter dated 21-01-2022.

As per the Clause 99 (7), the Licensee would have been initiated the sanction, which is not possible within 30 days. In the argument note, it is mentioned that there are three agencies involved in sanctioning the load enhancement i.e., M/s. KTPCL, KSEBL and Indian Railway. For importing power from Karnataka State, the strengthening of Konaje – Thudugoli line is required, which comes under the scope of M/s. KPTCL and is to be arranged by

the Licensee. Though actions were taken, M/s. KPTCL has not shown any interest. The Licensee has to ensure compliance of: -

- (i) availing more power from a third agency;
- (ii) Grid discipline;
- (iii) measure to restrict disturbance; and
- (iv) prevailing Acts and Codes.

In view of the above minimum time-line of 30 days could not be met and the same is acceptable.

The Kerala State Electricity Supply Code 2014, Section 6 states above the three-phase supply level to EHT consumers otherwise need approval of the Commission. Commission in their order dated 12-12-2019 as a judgement against petition No. OP31/19, clearly states that Commission cannot approve the prayer of M/s. Railways to declare that 2-phase supply system existing in Southern Railway has no unbalance effect in upstream 3-phase power grid. Then the traction load is an unbalanced load. Then the traction load is not meeting Section 14 of the Supply Code, which states as follow:

Section 14 “Load balancing”: “All consumers except single phase consumers shall balance their load in such a way that the difference in loading between phases does not exceed five percent of the average loading of the phases.”

The difference between phases should be with 5%. The Section 16 (3) of Supply Code mentioned that instantaneous current demand should be within 1½ times the full load current. As per the data submitted by the Railways, the instantaneous current demand is more than three times and this may affect the power system stability.

The Section 23 of Kerala Electricity Supply Code 2014 “Harmonics dumping” states as: -

23 (1) It shall be obligatory for all consumers to restrict the harmonics dumped by them to the levels stipulated by the IEEE STD 519-1992, and also the standards as may be specified by Central Electricity Authority in accordance with Section 53 of the Act:

Provided that IEEE Standard shall be applicable only till Indian Standards are specified by authorities such as Bureau of Indian Standards and Central Electricity Authority.

23 (2) If the licensee detects that the system of consumer is generating harmonics above the permissible limits, the licensee may require the consumer, to take such effective measures within a reasonable time period, which shall not be less than six months, to control harmonics of his installation in accordance with sub regulation (1) above.

23 (3) Failure to comply with this regulation may attract penal charges, if any, as determined by the Commission and if in the opinion of the licensee, the high harmonics dumping by a consumer is detrimental to other consumers or to the distribution system, the supply to such erring consumers may be disconnected with due notice:

Provided that the supply shall be reconnected as soon as effective measures are taken to comply with this regulation.

The Load Flow Study conducted by M/s. KSEBL shows the harmonics is very high. The total harmonic distortion is found varying from 3 ½ to 10%. It is found that 3rd, 5th & 7th harmonic waves are present in the line and occasionally 2nd harmonics are also occurring. The main issues are: -

- (i) the load is highly unbalanced;
- (ii) the instantaneous current is very high;
- (iii) the harmonics dumping is very high.

M/s. Indian Railway has to take necessary action to control all the above factors. Indian Railway has to conduct details of LFS study to assess the condition of power and also to take steps to limit these parameters within the permissible limit.

The argument of the appellant is that as per the agreement signed between the appellant and Licensee, it is the responsibility of the Licensee to supply the power to the consumer and consumer shall take from the Licensee all the energy required for operating the consumers' equipment. This is not correct. As per the Clause 1 (a) of the agreement, states that all the energy required for operating the consumers' equipment of his premises at up to a total quantity of KVA hereinafter called Maximum Demand. That means, as per the agreement, the Licensee is bound to give only up to contract demand.

The Clause 14 (a) of the agreement states that the consumer shall not make any alteration in the machinery or equipment either by way of addition or substitution or transfer, which may increase the obligation of the Licensee to

supply electrical energy in excess of the agreed contract demand. In the event, consumer want any change, the prior approval of the Licensee is to be obtained. This agreement clause is also seen to be violated by the appellant. However, the Railway being the public utility service, no adverse action could be taken in this regard.

The main allegation of the Licensee is about the high-power demand during the short duration, and high harmonics in the power system. These problems may adversely affect the power system stability. The Railway is taking 2 phase 110 kV supply from KSEBL to their traction substation and converting into 25 kV single phase system for the traction power supply. This is not a balanced three phases system. As the different traction substations are fed from different sources, the overall balancing also not feasible.

During the hearing, the Respondent states that the Recorded Main Demand was lower than the actual maximum demand, which is very instantaneous lasting for less than 30 minutes. The RMD is recorded as the peak lasting for 30 minutes only. If the same is recorded for time less than the time limit of 10 minutes or so, the recorded demand would have been much higher. As per the present system of recording the maximum demand i.e., the maximum demand sustained for 30 minutes or is only recorded as maximum demand and the same system has only been adopted. The alternate system, if any, has to be thought of while modifying the Regulations.

As per appellant, Railway is availing and utilizing the power in the same manner all over India. A technical solution is to be arrived and implemented by Railway for balancing the three-phase power by drawing three phase line from the line and distribute the load of equally by segmenting the traction line. This will be an initiative to achieve electrical power stability in the system.

The Licensee mentioned during the hearing that the additional load enhancement could be able to sanction only by enhancing the power allocation by M/s. KPTCL in the Konaje-Mancheswaram feeder. The Single Circuit tower lines are to be converted into Double Circuit line. The portion of the doubling work within the State of Kerala has been completed by the Licensee. The balance portion is in the State of Karnataka and the same is to be executed by M/s.

KPTCL and M/s. KSEBL has to deposit the amount for the same. The Chief Engineer and Dy. Chief Engineer along with appellant has to follow up with the KPTCL for an early completion of work.

The appellant informed during the hearing that one more traction substation has commissioned in between Uppala and Mangalore and thus the load of Uppala to Mangalore is shared by this new substation. Then overloading as apprehended by the Licensee in this section will be get reduced.

Another question is to consider the prayer of appellant to waive off the penal charges on the maximum demand in excess of the contract demand. As the enhancement is rejected on technical ground, this prayer is not permitted.

The appellant has already submitted Bank Guarantee for Rs.39,84,000/- as the 50% of the Security Deposit for the enhancement of Contract Demand in the Uppala Traction Substation and the same has been accepted by the Licensee.

Decision: -

From the analysis of the arguments of appellant and respondent and the hearing, the decision is taken as follows:

- (1) The Licensee has to make initiative action to complete the doubling of the Transmission line between Konaje – Mancheswaram. The Chief Engineer shall call a meeting of M/s. KPTCL and M/s. Southern Railway and appreciate the importance of this project and impress upon them for an early completion. The enhancement of CMD may sanction accordingly.
- (2) The appellant shall divert a portion of traction load from Mangalore to Uppala to the newly commissioned substation to reduce the overloading of Uppala.
- (3) The appellant has to take initiative to modify the Traction Distribution System to balance the load in three phase and also to achieve power system stability.

- (4) The appellant has to conduct a detailed LFS and assess the distortion and take necessary steps to control these parameters within the permissible limit.
- (5) The prayer of waiver of penal charges of the excess of contract demand is denied.

Having concluded and decided as above, it is ordered accordingly. No order on costs.

ELECTRICITY OMBUDSMAN

P/051/2022/_____ dated _____.

Delivered to:

1. Sri. M. Padmanabhan, Sr. Divisional Electrical Engineer, TRD, Southern Railway, Palakkad Dist. 678 002
2. Chief Engineer, Transmission-North, KSEB Ltd., Vydhyuthi Bhavanam, Kozhikode
3. Deputy Chief Engineer, Transmission Circle, KSEB Ltd., Kannur Dist.
4. Special Officer (Revenue), KSEB Ltd., Pattom, Thiruvananthapuram-4.
5. Asst. Executive Engineer, Electrical Sub Division., KSEB Ltd., Uppala, Kasaragod Dist.

Copy to:

1. The Secretary, Kerala State Electricity Regulatory Commission, KPFC Bhavanam, Vellayambalam, Thiruvananthapuram-10.
2. The Secretary, KSE Board Limited, Vydhyuthi Bhavanam, Pattom, Thiruvananthapuram-4.
3. The Chairperson, Consumer Grievance Redressal Forum, Vydhyuthi Bhavanam, KSE Board Ltd, Gandhi Road, Kozhikode