

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

I.A.No.1 of 2015
in
M.P.No.34 of 2015
and
M.P.No.34 of 2015

Indian Oil Corporation Ltd.
NH-45, Near Kilometer Stone 211
SIDCO Industrial Estate
Ulunderpettai Taluk
Villupuram District
Tamil Nadu – 606 305
Represented by its Chief Operations Manager
Mr.C.Satyanarayana

... Petitioner
(Thiru Ravi
Advocate for the Petitioner)

Vs.

1. Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO)
Represented by its Chairman and Managing Director
No.144, Anna Salai
Chennai – 600 002.
2. The Superintending Engineer
Tamil Nadu Generation and Distribution Corporation Limited
Kallakurichi Electricity Distribution Centre
Kallakurichi – 606 202.

... Respondents
(Thiru M.Gopinathan
Standing Counsel for Respondents)

Dates of hearing : 05-10-2015; 13-11-2015; 11-02-2016;
01-08-2016; 26-10-2016; 29-08-2017;
25-10-2017; 15-03-2018; 14-08-2018
and 18-09-2018

Date of Order : 30-11-2018

The I.A.No.1 of 2015 in M.P.No.34 of 2015 and M.P.No.34 of 2015 came up for final hearing on 18-09-2018. The Commission upon perusal of the petition, counter and connected records and after hearing the submissions of the applicant passes the following:-

ORDER

1. Prayer of the Petitioner in M.P.No.34 of 2015:-

(i) The prayer of the Applicant in the above I.A.No.1 of 2015 in M.P.No.34 of 2015 is to –

- (a) direct TANGEDCO not to levy surcharge in the form of compensation for harmonics, as far as Indian Oil Corporation Limited is concerned, till such time a final decision is taken by CEA on the revision of the Technical Standards for Grid Connectivity Regulation.
- (b) direct TANGEDCO to refund / adjust the harmonic surcharges of Rs.30,79,013/- already collected upto July 2015 from Indian Oil Corporation Limited based on the Regulation under review.
- (c) to impose costs may be allowed if deemed fit.

(ii) Prayer of the Petitioner in I.A. No.1 of 2015 in M.P.No.34 of 2015:-

The prayer of the Petitioner in I.A.No.1 of 2015 in the said M.P.No.34 of 2015 is to restrain the Respondent from levying any surcharge (in the form of compensation) for Harmonics pending disposal of this petition with effect from August 2015.

2. Facts of the Case:-

The Petition has been filed to direct TANGEDCO not to levy surcharge in the form of compensation for harmonics and refund / adjust the harmonic surcharges of Rs.30,79,013/- already collected upto July 2015.

3. Contentions of the Petitioner:-

3.1. The collection of compensation is not being practiced or followed in any part of the country by any concerned State Electricity Boards. The compensation collected is huge with no prescribed sanction method of assessing harmonics distortion and without correlation to degree of variation. This causes huge burden on the Public Sector Undertaking which is catering to the essential services of the public and where profit motive is not primary.

3.2. Indian Oil Corporation Limited is registered as Factories under Factories Act, Industrial Power tariff is being adopted by TNEB and the tariff is as follows:-

Tariff Order	Date with effect from	Category	Demand Charges Rs./kVA	Energy Charges Rs./kWh
T.O.1of 2012	01.04.2012	HT-1A	300	5.50
T.O.9 of 2014	12.12.2014	HT-1A	350	6.35

3.3. The Tamil Nadu Electricity Supply Code in regulation 4 (1) (iv) provides as follows:-

“(iv) Additional charges for harmonics dumping

Where any equipment installed by a consumer generates harmonics, the consumer shall provide adequate harmonic suppression units to avoid dumping of harmonics into Licensee's distribution system and the Licensee is at liberty to provide suitable metering equipment to measure the harmonic level pursuant to such harmonic. Where the

consumer fails to provide such units, he shall be liable to pay compensation at such rates as the Commission may declare from time to time.”

3.4. The Central Electricity Authority has set out certain limits for harmonics in their "CEA (Technical Standards for Connectivity to the Grid), Regulation 2007 at Part IV, Regulation (3) as reproduced below;

“Voltage and Current Harmonics:-

(1) The total harmonic distortion for voltage at the connection point shall not exceed 5% with no individual harmonic higher than 3%.

(2) The total harmonic distortion for current drawn from the transmission system at the connection point shall not exceed 8%.

(3) The limits prescribed in (1) and (2) shall be implemented in a phased manner so as to achieve complete compliance not later than five years from the date of publication of these regulations in the official Gazette.”

3.5. There are no clear guidelines in respect of type and accuracy of equipment to be used for measurement, method of measurement and duration of measurement etc., either in CEA Regulation or in the TNERC Supply Code.

3.6. Until the year 2014 the permissible limit for harmonics distortion was 15% and the Petitioner Undertaking was functioning within the permissible limit. However, with the introduction of stringent slab of 8% limit brought in by the TANGEDCO with a consequence of collecting compensation is casting a huge burden on the Public Sector Undertaking.

3.7. Subsequent to the inspection carried on 24-09-2014 by TANGEDCO, we were intimated that we should comply with the standard set by CEA within a period of 3 months and in default, the Petitioner were to pay compensation @ of 15% of CC charges. This compensation mechanism is arbitrary and has no basis in law to fix such a huge amount for compensation and will amount to levying penalty.

3.8. Further, it may be noted that when TANGEDCO granted 3 months time to reduce harmonics to desirable level on 31-10-2014 which will come to an end on 31-01-2015. However, since measures on the part of the Petitioner to mitigate the harmonics was on the process, TANGEDCO imposed compensation charges calculating from October 2014 which is unacceptable in law for the reason time was permissible for mitigating till end of January 2015. Hence imposing compensation retrospectively is grave error on the part of TANGEDCO. There was very poor response to our tender floated on through web for participation and establishing technical services to mitigate harmonics. The TANGEDCO being aware of the fact that technical experts' availability of mitigating harmonics is scarce in the market and therefore should have given reasonable time (atleast 1 year) for complying CEA standards on harmonics.

3.9. Even though no clear guidelines are available for the method of measurement in the TNERC regulation, in whatever way the measurement is done by TANGEDCO, the Harmonic distortion in voltage as recorded by TANGEDCO are

1. Individual Voltage harmonic distortion (Max)-0.5%
2. Total Voltage harmonic distortion -1.26%
3. Total current harmonics distortion 9.76%

While harmonics in respect of voltage at above 1 & 2 are well within the prescribed limit of 3 & 5%. The 3rd parameter is exceeding the limit marginally. Hence there is no compelling need for imposing high level of surcharge for harmonics in current, causing serious financial implications. TANGEDCO have raised a demand for Rs.17,35,877/- towards compensation charges against Harmonics at a rate of 15% per month on the total current charges in the current consumption bills of March 2015 with retrospective effect from October 2014. Similarly, the Respondent,

TANGEDCO have continued raising the compensation charges against harmonics of Rs.2,99,193/- , Rs.2,97,174/-, Rs.3,70,830/-, Rs.3,75,939/- in the monthly bills of April 2015, May 2015, Jun 2015 and July 2015 respectively. Since the bills are to be paid within 7 days to avoid power disconnection, the Petitioner has paid the bills under protest. However, the amounts being paid as compensation against harmonics as above since October 2014, which has caused huge financial burden on Indian Oil Corporation Limited, Asanur.

3.10. Indian Oil Corporation Limited, Southern Region Pipelines has implemented and was certified under Energy Management system (ISO 50001:2011). Therefore, the Petitioner is highly concerned in maintaining the power quality, conservation and is committed to the same.

3.11. M/s. Central Power Research Institute, Bangalore, a premier Central Government Institute has been engaged for measurement, studying the harmonics and suggesting the remedial measures. The job was completed and specifications for the harmonics filters have been finalized.

3.12. Since Indian Oil Corporation Limited is a public sector undertaking, as per guidelines we have floated Open tenders for the same. The harmonic filters will be in place within four months and the Total Current Harmonic Distortion (TDD) will be brought down to the acceptable limits set by CEA. Similar Penalty for reduction in harmonics was imposed to Southern railway and Southern railway has represented to Central Electricity Authority for review of the methods of measurement and Set levels. Finding prima facie merit in the submissions of Railways that there are

shortcomings in the very regulations regarding stipulation of harmonic levels, method of measurement etc., CEA vide their Office Order No.CEA/5-41(02)/Secy-2014/448 dated 28.01.2014 have constituted a Committee for reviewing the "Central Electricity Authority (Technical Standard for Connectivity to the Grid) Regulations, 2007" under the Chairmanship of Chief Engineer (Distribution Planning & Development), CEA with Chief Engineer (Grid Management), CEA as Co-Chairman and representatives from various power sector entities, which includes STU of Tamil Nadu TANTRANSOCO and Railways among other things to evolve a mechanism for determining the contribution of various consumers to the harmonics levels at interconnection point in the grid,

3.13. It has been submitted that when the very fundamental issues which form basis of this surcharge are under comprehensive review by the competent authority, TANGEDCO should not rush to impose compensation without waiting for the outcome of the committee's finding which may have consequence on the issue of levying, compensation for harmonics distortion.

4. Contentions of the Respondent:-

4.1. The above Miscellaneous Petition is neither maintainable in Law nor on facts, among other things, on the grounds that the impugned demand was raised in terms of Regulation 4(1)(iv) of the Tamil Nadu Electricity Supply Code, 2004 and the Tariff Order No.1 of 2012 dated 30.03.2012 and Tariff Order vide T.P.No.1 of 2013 dated 20.06.2013 issued by the Commission, the statutory authority under the Electricity Act, 2003 and as such the impugned demand does not call for any interference as the same in accordance with the commission's order in force. The Petitioner has also

failed to avail the alternate efficacious remedy of approaching the Consumer Grievances Redressal Forum and the Tamil Nadu Electricity Ombudsman created under section 42 of the Electricity Act, 2003 and regulation 18 of the Tamil Nadu Electricity Supply Code instead of rushing to file Miscellaneous Petition; and that the Petitioner has filed the above Miscellaneous Petition, unmindful of the safety of the grid consequent on the introducing of Harmonics to the Grid by the Petitioner. It is further submitted that against the provisions of the Tariff Orders, the Petitioner has the remedy before APTEL. Therefore, Miscellaneous Petition will not lie.

4.2. In T.P.No.1 of 2013 dated 20.6.2013, under clause 6.1 (ii) of A6 Tariff Schedule prescribing the General Provisions applicable for High Tension Supply stipulates as below:-

" (ii) Harmonics: As specified in the Supply code, when the consumer fails to provide adequate Harmonic filtering equipment to avoid dumping of Harmonics into Licensee's network beyond the permissible limits as specified by CEA Regulations, the consumer is liable to pay compensation at 15% of the respective tariff. As and when the consumer brings down the Harmonics within the limit, compensation charges shall be withdrawn. The measurement of Harmonics shall be done by the Distribution Licensee using standard meters/equipment in the presence of consumer or their representatives. This compensation charges is applicable to HT-I & HT-III category of consumers. TANGEDCO shall give three months clear notice to all consumers under these categories stating that they shall pay 15% compensation charges if Harmonics introduced by their load is not within the limits set by CEA. The TANGEDCO shall implement the compensation provision after three months period from the date of measurement if the Harmonics measured is more than permissible limits".

Accordingly, notices have been issued to all HT-I & III category of consumers in order to implement the Tariff order.

4.3. As per CEA (Technical Standards for Connectivity to the Grid) Regulation, 2007, under part IV, Grid Connectivity Standards applicable to the Distribution

systems and bulk consumers, the limits for current and voltage harmonics are stipulated as hereunder:-

“Para 3. Voltage and Current Harmonics

(1) The total harmonic distortion for voltage at the connection point shall not exceed 5% with no individual harmonic higher than 3% .

(2) The total harmonic distortion for current drawn from the transmission system at the connection point shall not exceed 8%.”

The above regulation mandates that the harmonic distortion in the “Distribution System” and bulk consumers should be within the above limits. In order to maintain the harmonics within permissible limits in “Distribution System” it is mandatory to insist the consumers who have Harmonic loads to provide adequate harmonic suppression equipments.

4.4. Notices have been issued to all HT I & III category of consumers as per the provisions contained in the Tariff Order No.1 of 2012 dated 30.3.2012 and the above provision was continued in the subsequent Tariff Order issued vide T.P.No.1 of 2013 dated 20.6.2013 and SMT Order No.9 of 2014 dated 11.12.2014 (Clause 6.1 (ii)).

4.5. In view of the fact that the Regulations of the Commission (regulation 4 (1) (iv) of the Tamil Nadu Electricity Supply Code) is having a provision on the Harmonic Injection and levy of surcharge and CEA regulation have come into force, such a levy of penalty for Harmonic injections is authorised by law and it is with authority. Hence, it is the statutory provision having the source of law under the Electricity Act, 2003 and as such the same cannot be challenged.

4.6. Regulation 4 (1) (iv) of Tamil Nadu Electricity Supply Code on Additional charges for harmonics dumping states as follows:-

“Where any equipment installed by a consumer generates harmonics, the consumer shall provide adequate harmonic suppression units to avoid dumping of harmonics into Licensee’s distribution system and the Licensee is at liberty to provide suitable metering equipment to measure the harmonic level pursuant to such harmonic. Where the consumer fails to provide such units, he shall be liable to pay compensation at such rates as the Commission may declare from time to time.”

The above regulation mandates installation of harmonic suppression equipment by the consumer irrespective of voltage class and payment of compensation charges as per the Commission’s Tariff Order.

4.7. Regulation 9 (1) of the Tamil Nadu Electricity Distribution Code, inter-alia, species that no item of electrical equipment shall be allowed to remain connected to the distribution system unless it is covered by appropriate protection scheme. Regulation 13(4) of the Tamil Nadu Electricity Distribution Code specifies the monitoring mechanism to be adhered to by the Licensee including by imposing Special condition as detailed below:-

“(4) Special conditions: Special conditions shall be incorporated in the connection agreement for loads with high harmonic content, low power factor and unacceptable supply voltage and frequency fluctuations, so that the consumer shall be forced to install appropriate correction equipments to meet the requirements of this Code.”

4.8. The Commission has specified the Tamil Nadu Electricity Grid Code, 2005. Regulation 2 (70) of the said regulations defines the expression "User" as "A person including the STU, Generating Company, Licensee and Power Grid corporation of India or any such entity that uses the Transmission system and who must comply with the provisions of the Grid Code. The Petitioner being the user of the Grid is estopped to dispute the impugned demand. In this connection, Regulation 3(2) of the

Tamil Nadu Electricity Grid Connection, inter-alia, specified the objective of the Tamil Nadu Electricity Grid Code is to define the services rendered by each wing in the overall electric system and also for identifying the responsibility and performance factor and measurement points for each one of them; that the documentation of the principles and procedures, which define the relationship between various users of the Intra State Transmission System and State Load Despatch Centre as well; and to ensure economy and efficiency in the operation of the power system in the State. Regulation 4 of the Tamil Nadu Electricity Grid Code stipulates the General requirement as follows:-

"(4) General Requirements: The Grid Code contains procedures to permit equitable management of day to day technical situations in the Electricity Supply System, taking into account a wide range of operational situations and requirements likely to be encountered under both normal and abnormal conditions.

It is nevertheless necessary to recognize that the Grid Code cannot predict and address all possible operational situations. Users must therefore understand and accept that, in such unforeseen circumstances, the State Transmission Utility (STU) who has to play a key role in the implementation of the Grid Code may be required to act decisively for maintaining the Grid regimes for discharging its obligations. Users shall provide such reasonable co-operation and assistance as the STU may request in such circumstances. "

4.9. The Regulation 5 of the said Code, inter-alia, specifies that system planning include removing operating constraints and maintain standards of security. Regulation 6 (1) of the said Code, inter-alia, specifies the objectives of the grid connectivity conditions that are to be ensured include that connections shall neither suffer unacceptable effects due to its connection to the transmission system nor impose unacceptable effects on the system of any other connected agency and the user has to ensure the standard and parameters of the existing system with which his system has to be interfaced and the electrical environment in which his system

has to operate. Regulation 6 (4) of the said Code, inter-alia, stipulates that the user's system to protect the Grid from the faults originating in the user's system and that no user of the Grid shall exceed the Harmonic Distortion Level specified in the CEA (Grid Connectivity) Regulations. In view of the aforesaid provisions, the HT consumers are liable to restrict the dumping of Harmonics and they cannot escape from the responsibility of restricting their dumping of Harmonics for the safety of the grid and in public interest as well. It is a settled position in law that the private interest should give way for public interest.

4.10. In the light of the aforesaid provisions stated above, that there is no infirmity or illegality in raising the impugned demand for the introduction of Harmonics into the Grid, in terms of the provisions of the Tamil Nadu Electricity Supply Code, Tamil Nadu Electricity Distribution Code and the Tariff Orders issued during the year 2012 and 2013.

4.11. The impact of harmonics introduced by this type of consumers severely affects the TANGEDCO's grid power quality and it is the responsibility of the Petitioner to reduce the harmful effects of harmonics and maintain within the CEA limits as per the TNERC tariff orders.

4.12. It is most relevant to note that the MRT wing inspected the service on 24.09.2014 and measuring the harmonics level in presence of the Petitioner's authorized representative, the harmonics level in the Petitioner service was found exceeded the limits specified by CEA as follows:

HT SC No.	Voltage Class	Voltage				Current	
		Individual Harmonics Distortion in %	Total Harmonics Distortion (THD) in %	Total Harmonics Distortion (THD) in %		Total Harmonics Distortion (THD) Value in %	
		CEA limits	Measured values	CEA limits	Measured Values	CEA Limits	Measured Values
407	11 KV	3%	0.5%	5%	1.26%	8%	9.76%

Hence, the Petitioner was informed vide letter dated.31.10.2014 that it is liable to pay compensation at 15% of the CC charges of the respective tariff, if any action has not been taken within 3 months from the date of measurement to bring down the level of Harmonics within the limits set by CEA. In this connection, as the Petitioner has not brought down the level of harmonics within three months from the date of measurement, the second respondent has raised the demand towards the Harmonics compensation charges at 15% of the respective tariff from the month of October 2014 for Rs.17,35,877/- in the Current Consumption bill of March 2015. Similarly, second respondent has raised the harmonics compensation charges of Rs.2,99,193/-, Rs.2,97,174/-, Rs.3,70,830/- and Rs.3,75,939/- in the monthly C.C bills of April 2015, May 2015, June 2015 and July 2015 respectively and the same paid by the Petitioner. Further, it is relevant to mention that the levy of compensation charges for Harmonics is being done in accordance with regulation 4 (1) (iv) of the Tamil Nadu Electricity Supply Code, 2004 and the TNERC Tariff Order (T.O.No.1 of 2012 dated 30-03-2012, T.P.No.1 of 2013 dated 20-06-2013 and SMT Order No.9 dated 11-12-2014 and the aforesaid tariff orders are issued after conducting public hearing by the Commission thereby the Harmonics provision is well known by the Petitioner and hence the levy of compensation could be implemented only after expiry of three months from the date of measurement is not acceptable one. Further, it is stated that such levy has been calculated on the gross energy consumption

charges (i.e) recorded energy and recorded demand charges of the respective tariff. This procedure is followed towards levy of harmonics compensation charges in accordance with the orders issued by the Commission. Further, it is stated that the compensation charges for harmonics dumping as per the TNERC order is to protect not only the Grid but also the neighboring non-polluting consumers from getting distorted harmonics containing electric supply. Therefore, the impugned notice issued by the second respondent is in order. Hence, this petition is neither maintainable in law nor on facts.

4.13. The equipment used by TANGEDCO is a Class-A instrument as per the International Standard recommendation (IEC 61000-4-30) and is the best category instrument for such measurement in the field Methodology used for measurement by TANGEDCO and recognized by the Commission in Tariff Order dated 20.06.2013 (Clause 2.422 of Tariff Order dated 20.06.2013). Hence, the contention of the petitioner that there are no clear guide lines in respect of type and accuracy of equipment to be used for measurement, method of measurement and duration of the measurement etc., either in CEA regulation or in the TNERC Supply Code is not acceptable one.

4.14. The Commission has ordered in the Tariff orders that CEA limits should be taken for mitigating harmonics. In this connection, CEA had issued (Technical standards for connectivity to the Grid) Regulation, 2007. Under Part IV, Grid connectivity standards applicable to the Distribution systems and bulk consumers, the limits for current and voltage harmonics are stipulated in the above regulation.

4.15. It is submitted that the inspection was carried on 24.09.2014. It was noticed that the Petitioner had exceeded the limit of harmonics set by CEA. Hence, the Petitioner had been informed vide letter dated.31.10.2014 that the Petitioner is liable to pay compensation at 15% of the CC charges of the respective tariff, if the Petitioner have not taken any action within 3 months from the date of measurement to bring down the level of Harmonics within the limits set by CEA. In this regard, it is relevant to mention that the Petitioner admittedly had not brought down the harmonics within the limits set by CEA within three months; hence, compensation charges for the month of October 2014 to March 2015 had been included in the CC bill of March 2015. From the above, it is clearly observed that TANGEDCO had followed the Commission's order correctly.

4.16. The Petitioner has claimed that Individual and Total Voltage harmonics are within the permissible limits and only the total current harmonics which is a least significant parameter has only slightly above the permissible limit. This claim is again wrong and current harmonics is a stringent parameter, which is responsible for the following ill effects in the system.

- a. The load current and its harmonics originate from the consumer loads.
- b. It distorts Voltage due to drawal of distorted current.
- c. It overheats the Transformers and Motors
- d. It increases Hysteresis (magnetization) losses in steel and iron cores of transformers, motor and magnetic trip units of circuit breakers
- e. It heats the Neutral Conductors
- f. It aids to Skin Effect → Increased amount of current flowing on the outside of conductors (overheating)

- g. It leads High Neutral currents.
- h. It leads to Mal operation of protective devices.
- i. It increase the eddy current losses in the core steel of the metallic strip.
- J.It causes low power factor (Reactive) in loads.

From the above, it is clearly observed that the contention of the Petitioner that individual voltage and the total voltage harmonic distortion are within the permissible limits except the 3rd parameter (total current harmonics distortion) which is slightly above the permissible limit and also least significant parameter therefore TANGEDCO should not have imposed any compensation charges at all is misconceived one.

5. Contentions of the Petitioner in the Rejoinder dated 29-08-2017:-

In the Rejoinder filed by the Petitioner on 26-08-2017, he has made the following submissions, namely:-

5.1. The allegation that Petitioner failed to avail alternative remedy both under consumer grievances redressal forum available under section 42 of Electricity Act, 2003 or under Tamil Nadu Electricity Ombudsman under regulation 18 of Tamil Nadu Electricity Supply code and hence should be non-suited is not legally correct. The issue of levying surcharge @ 15% on current consumption for harmonics dumping is a serious question of law infringing the right of consumer and the same needs to be agitated in the highest forum available under Electricity Act, 2003; as question of levying surcharge @ 15% of current consumption is itself being questioned as to its quantum without any correlation to degree of dumping. Only the Commission will be the competent authority to decide such serious issue of law under Electricity Act, 2003. In fact, these questions are being raised and wrestled by various aggrieved

party under Article 226 of Constitution of India before the Hon'ble High Court, Madras by passing all authorities created under Electricity Act, 2003.

5.2. All the surcharge that has been raised along with the Current consumption Bill has been settled scrupulously by the Petitioner though under protest. Therefore, no prejudice is palpably is caused to respondent on disputing the legal basis of levying 15% surcharge on Current Consumption as compensation for harmonics dumping.

5.3. Tamil Nadu Electricity Supply Code only provide that when consumer generates Harmonics the consumer shall provide adequate harmonics suppression units to avoid dumping of harmonics into licensee's distributions system and only if the consumer fails to provide such units he shall be liable to pay compensation at such rates as the commissions may declare from time to time. Thus the Supply Code envisages a calibrated system of collecting compensation for harmonics dumping declared by commission from time to time. Therefore, the commission is mandated with formalizing a scheme of rate in the nature of compensation and not penalty to enforce employment of adequate harmonics suppression units to reduce harmonics dumping into license's distributions systems. The scheme of rate for justifying compensation factor and at the same time providing opportunity for consumer to employ adequate harmonics filter to reduce dumping should be correlated in a transparent and justifiable scale of rates. The fixation of compensation should take into consideration the awareness of harmonics dumping among consumer, the availability of technology and institution to suggest suitable remedies to reduce harmonics dumping, the cost of implementing the measures etc. without paying attention to the nuances involved In evolving a program for

compensation the Commission fixing flat 15% on Current Consumption as compensation is untenable in law and violates the constitutional scheme of fair administration and rule of law.

5.4. In T.P.No.1 of 2013 dated 20.06.2013 issued by the Commission provides the bulwark of justification for levying 15% surcharge on Current Consumption as compensation for harmonics dumping. It is the elementary principle of law that compensation cannot be decided by the entity who suffers injury and enforce the same against the damage causer. It is akin to prosecutor himself being judge in his own case. Therefore, the fixation of 15% surcharge on Current Consumption as compensation for harmonics dumping by commission is non est in law.

5.5. In T.P.No.1 of 2013 dated 20.06.2013 provide a margin of 3 months from the date of measurement (Actual date of measurement is 24.09.2014 and communication to the Petitioner is dated 31.10.2014) to remedy the situation of excess harmonic beyond permissible level. However, respondent issued notice dated 31.10.2014 for the measurement carried out on 24.09.2014 calling upon Petitioner to rectify harmonic dumping within 3 months from the date of measurement. Thereafter, respondent on failure of Petitioner to comply with reducing harmonics dumping imposed penalty from October 2014 which is palpably wrong. Even the Commission's order provides for 3 months time from the date of measurement which is only actual date of formalizing measurement (31-10-2014) and 3 months will commence from such communication and the same expires on 30.01.2015. If there is failure to implement rectifications within the above statutory period expiring on 30.01.2015 then alone cause of action for claiming damages will

arise. However the respondent on expiry of 3 months on 23.12.2014, levied surcharge from the date of measurement (24.09.2014) which is not legal even according to T.P.No.1 of 2013 dated 20.06.2013.

5.6. The contention of respondent since the Central Grid Code 2007 contains limits for harmonics dumping and supply code provides for levying surcharge for non-complying limits of harmonics dumping, collection of surcharge has legal basis is an unwarranted conclusion. If at all the power of Collection of damages is traceable to legal source, it should be found either in Electricity Act, 2003 or Central Grid Code 2007 in which collection of damages for harmonics dumping is not found. Only the Tamil Nadu Electricity Supply Code bestows itself with the power to collect the damages for harmonics dumping without any corresponding power or authority traceable to above Parent Act or Regulation. Therefore collection of surcharging is illegal and ultravires the rules and regulations and Act.

5.7. After the receipt of notice dated 31.10.2014 from the Respondent cautioning the Petitioner with serious consequences if harmonics dumping is not reduced within permissible limit the petitioner immediately set on a course of action.

5.8. TANGEDCO advised IOCL to install Harmonic filters within 3 months on October 14 to correct the Harmonics. However, IOCL being a Government of India undertaking has its own system and procedures in line with Government guidelines. Therefore, lining up party for study and correction of the Harmonics took time and Active Harmonic Filters were installed on November 2015 and Harmonics was brought within the limit. The effectiveness of Harmonics filter installed by the

Petitioner was demonstrated in the presence of TANGEDCO on 28.11.2015 and all the parameters under Harmonics distortion were well below the permissible limits.

5.9. It has been stated that roughly a sum of Rs.13,11,000/- (Rupees Thirteen Lakhs and Eleven Thousand only) was spent in installing the Harmonics filter the first of its kind in the Indian Oil Corporation Limited.

5.10. Vide letter dated 20.05.2009, M/s.Indian Oil Corporation Ltd had submitted Rs.1,38,13,400/- (Rupees One Crore, Thirty Eight Lakhs, Thirteen Thousand and Four Hundred only) for providing a dedicated 33 KV supply. (TNEB Receipt No.299123 dated 17.12.2009). But TNEB instead of providing a dedicated 33 KV supply, provided at HT line which is tapped at Pali (in between Ulundurpet and Asanur sub-station) and extended to IOCL's Asanur pump station. As this is not a dedicated line, continuous power supply could not be ensured at Asanur pump station. Due to frequent power interruptions our pumping is getting disturbed and in turn our product-though put is adversely affected @ 95 kl/hr which makes feeding the demand centers in Tamil Nadu difficult and also causes us revenue loss to the tune of Rs.57,000/-hr.

5.11. Taking into account all the above factors and foremost IOCL is a Government of India undertaking and power utility at Asanur pump station is for public service i.e., for transportation of essential petroleum products through underground pipelines (safest mode of transportation). It is prayed that the Commission pleased to waive the Harmonic Penalty charges amounting to Rs.44,44,811.02/ - and refund the same to the Petitioner. Also a dedicated line, should be ensured for Asanur Pump Station

to augment effective functioning of the Pump Station for the Public Welfare and thus render justice.

6. Hearing held on 15-03-2018:-

In the hearing held on 15-03-2018, Commission has directed the Respondent, TANGEDCO to file the procedure adopted in the process of levy of penalty for harmonics injection beyond the specified limits. Accordingly, the TANGEDCO has filed an affidavit on 14-08-2018.

7. Affidavit filed by the Respondent on 14-08-2018:-

In the affidavit filed by the Respondent on 14-08-2018, the Respondent has submitted the following namely:-

7.1. Based on the tariff order No.1/2012 dated 30.03.2012, a Circular Memo dated 31.03.2012, detailing the working instructions to implement the tariff related issues was issued to the field from Director (Distribution)/ TANGEDCO.

7.2. Necessary instruction has been issued to the Superintending Engineers from Director (Distribution)/ TANGEDCO vide Memo dated 27.04.12, towards the implementation of Compensation charges for dumping of harmonics beyond prescribed limits.

7.3. Based on the above instructions, respective EDCs had given three month clear notices to all the HT-Tariff I & HT-Tariff III consumers, towards the harmonic compensation provisions indicating the points as mentioned in the Tariff order.

7.4. Procurement of Standard meter (Class A) was then carried out and Harmonic level measurements at consumer's premises were started from 12/2013, at the Point of Common Coupling (PCC) of the respective service, adopting the methodology framed by TANGEDCO. The same methodology has been recognized by the Commission in its order in M.P.No.22 of 2011 dated 28.09.2012 and mentioned in clause 2.422 of the Commission's view in the Tariff order dated 20.06.2013.

7.5. When the measurements were taken after the expiry of the notice period of three months, compensation charges were levied for the erring consumers from the date of measurement itself.

7.6. Subsequently, based on the clarifications requested by some of the Superintending Engineers as to the date from which the compensation charges are to be levied, the Chief Financial Controller /Revenue had clarified vide letter dated 05.11.2014 as follows:-

- (a) The Superintending Engineer /EDCs are requested in the first instance, to confirm whether the 3 months clear notices have been issued to all the HT Tariff I & HT Tariff III consumers with regard to levy of harmonic compensation charges.

On expiry of 3 months notice period, the measurement shall be made and if the measurement is found beyond the limit as specified by the Central Electricity Authority, then the measurement notice may be issued to the HT consumers that, they are liable to pay the compensation charges at 15% of the respective tariff from the date of measurement itself.

- (b) In rare cases, where the measurement has been taken in the HT service connection and the consumers have not been given three months notice and the harmonics limit are found to be beyond the limit prescribed by the CEA a three months notice shall be issued to the consumer. The consumer has to bring down the harmonics level within the limit before the expiry of three months notice and duly intimating TANGEDCO. If the consumer fails to do, then the harmonics compensation charges shall be levied from the date of measurement.

7.7. The above procedure was being followed upto 10.08.2017. However, after issue of Tariff Order dated 11.08.2017, the levy of compensation charges shall commence from the date of completion of 3 months notice period acknowledged by the consumer irrespective of the date of measurement. Instructions for adopting the procedure w.e.f. 11.08.2017 has been issued vide Circular Memo.No.CFC/REV /DFC /REV/ AS.3/D.NO.374/17, dated.24.08.2017.

8. Memorandum filed by the Petitioner on 14-08-2018:-

In the Memorandum filed by the Petitioner on 14-08-2018, the Petitioner has *inter-alia* stated as follows:-

8.1. The relief in this petition was canvassed on various grounds including the following:

- (i) That the Tamil Nadu Electricity Regulatory Commission has fixed flat 15% on Current Consumption charges as compensation amount is

untenable in law and violates the constitutional scheme of fair administration and rule of law.

- (ii) It is the elementary principle of law that compensation cannot be decided by the entity who suffers injury and enforce the same against the damage causer. It is akin to prosecutor himself being judge in his own case. Therefore the fixation of 15% surcharge on Current Consumption as compensation for harmonics dumping by commission is non est in law.

8.2. The various grounds of challenging imposition of 15% charge for dumping harmonics by TANGEDCO is not pressed and the ground that is chiefly pressed is as follows:-

8.3. The Tariff order issued vide T.P.No.1 of 2013 dated 20.06.2013 under clause 6.1(ii) of A6 Tariff Schedule prescribing the General Provisions applicable for High Tension Supply stipulates as below:-

“(ii) Harmonics: As specified in the Supply Code, when the consumer fails to provide adequate Harmonic filtering equipment to avoid dumping of Harmonics into Licensee's network beyond the permissible limits as specified by CEA Regulations, the consumer is liable to pay compensation at 15% of the respective tariff. As and when the consumer brings down the Harmonics within the limit, compensation charges shall be withdrawn. The measurement of Harmonics shall be done by the Distribution Licensee using standard meters/equipment in the presence of consumer or their representatives. This compensation charges is applicable to HT- I & HT- III category of consumers. TANGEDCO shall give three months clear notice to all consumers under these categories stating that they shall pay 15% compensation charges if Harmonics introduced by their load is not within the limits set by CEA. The TANGEDCO shall implement the compensation provision after three months period from the date of measurement if the Harmonics measured is more than permissible limits”.

8.4. TANGEDCO failed to adhere to the above provisions by not issuing 3 months clear notice and further 3 months notice after date of measurement of harmonics and

finding the same to be beyond the permissible limits and therefore imposition of penalty falls foul of the above provisions.

9. Findings of the Commission:-

9.1. The initial prayer of the petitioner was to direct TANGEDCO, the Distribution licensee:

- (i) not to levy surcharge in the form of compensation for harmonics as far as the petitioner is concerned till a decision is taken by CEA on the revision of Technical Standards for Grid Connectivity Regulations.
- (ii) to refund/adjust the compensation charges of Rs.30,79,013/- collected upto July 2015 due to creation of harmonics, based on regulation under review.

9.2. The petitioner subsequently filed a Memo on 14.08.2018 restricting the claim only with respect to date of commencement of compensation charges for failure to adhere to the permissible limits of harmonics and has not pressed other charges.

9.3. The petitioner's pumping station at Asanur is availing supply at 33 KV from the Distribution licensee TANGEDCO, the respondents herein, through their service connection HT SC No.78 under industrial tariff HT TF I A with a demand of 1200 KVA. The petitioner states that subsequent to the inspection carried out by TANGEDCO on 24.09.2014, an intimation was sent on 31.10.2014 by the licensee to comply with the standards set by the Central Electricity Authority (CEA) for harmonics within 3 months

and on default, they were to pay compensation charges at 15% of current consumption charges. Even when the measures to mitigate the harmonics was under process TANGEDCO imposed compensation charges of Rs.17,35,877/- with retrospective effect from October 2014 in the Current Consumption(CC) bills of March 2015. TANGEDCO continued raising the compensation charges in the monthly bills of April 2015, May 2015, June 2015, July 2015 for amounts of Rs.2,99,193/-, Rs.2,97,174/-,Rs.3,70,830/-, Rs.3,75,939/- respectively. The petitioner has paid the bills under protest to avoid disconnection and has approached the Commission. The petitioner states that they engaged Central Power Research Institute for measurement of harmonics, suggestion of remedial measures and consequently finalized the specification for harmonic filters. The petitioner being a Public sector organization had floated open tenders to procure harmonic filters which was to be in place within four months.

9.4. In the affidavit filed initially, the petitioner citing a Committee constituted by CEA to review the harmonic levels in CEA (Technical Standards of Connectivity to the Grid) Regulations, 2007, contended that TANGEDCO should not impose compensation charges unless revised regulations are issued by the CEA.

9.5. The respondents relied on the provisions in the TNE Supply Code, Grid Code that confers power on the Licensee to levy compensation charges on failure of the consumer to suppress harmonics, to maintain harmonic distortion levels within prescribed limits and on the agreement signed between the licensee and the consumer, wherein the consumer has undertaken to comply with the requirements of applicable Acts, Regulations, Grid Code, Supply Code and Distribution Code. They

have cited the Tariff orders of 2012, 2013, 2014 issued by the Commission for levy of compensation charges of 15% for not complying with the limits of harmonics. It is the contention of TANGEDCO that the provisions for levy of harmonics is well known to the petitioner, through the various regulations and Tariff orders and the consumer cannot feign ignorance of the same, and that the Committee formed by CEA had met once, and any revised regulations issued by CEA would take prospective effect.

9.6. Since the prayer of the petition has been amended seeking directions with respect to the date of commencement of compensation charges, Commission considers it deemed fit to restrict the order to the revised prayer.

9.7. However, since the very levy of compensation charges was contested initially, it is necessary to reproduce the Regulations of the Commission that provide for levy of compensation charges on failure of the consumer to provide adequate harmonic suppression units for reference. The relevant Regulation is extracted below:

Regulation 4(1)(iv) of the Supply Code is as follows:

“4. Charges recoverable by the Licensee-

The charges, recoverable by the Licensee from the consumers are: -

(1) Tariff related charges, namely,—

(i)

...

(iv) Additional charges for harmonics dumping

Where any equipment installed by a consumer generates harmonics, the consumer shall provide adequate harmonic suppression units to avoid dumping of harmonics into Licensee’s distribution system and the Licensee is at liberty to provide suitable metering equipment to measure the harmonic level pursuant to such harmonic. Where the consumer fails to provide such units, he shall be liable to pay compensation at such rates as the Commission may declare from time to time.”

From the above, it is clear that the Regulation in the Supply code provides for levy of compensation charges for failure to provide adequate harmonic suppression units.

9.8. Commission notified the compensation charges of 15% in effect from the Tariff order 1 of 2012 dt.31.3.2012 and since then has been consistently notifying the compensation charges for failure to limit the harmonics in all of its retail Tariff orders.

9.9. Provisions in the Tariff orders 1 of 2012 and 1 of 2013 relevant to this case are reproduced below:

Para 10.1.2 of Tariff order No.1 of 2012 is reproduced below:

“Harmonics: As specified in the Supply Code, when the consumer fails to provide adequate harmonic suppression equipment to avoid dumping of harmonics beyond the limits as specified by CEA regulations into Licensee’s distribution system, he is liable to pay compensation at 15% of the respective tariff. As and when the consumer brings down the harmonics within the limit, compensation charges shall be withdrawn. The measurement of harmonics shall be done by the Distribution Licensee using standard meters/equipments in the presence of consumers or their representatives. This compensation provision is applicable to HT-I & HT-III category of consumers. The TANGEDCO shall give three months clear notice to all consumers under these categories stating that they shall pay 15% compensation charges if the harmonics introduced by their load is not within the limits set by CEA. The TANGEDCO shall implement the compensation provision after the three months period if the measured harmonics is more than the limits”

9.10. Para 6.1.(ii) of Tariff order No.1 of 2013 is reproduced below:

“ii. Harmonics: As specified in the Supply Code, when the consumer fails to provide adequate harmonic filtering equipment to avoid dumping of harmonics into Licensee’s network beyond the permissible limits as specified by CEA regulations, the consumer is liable to pay compensation at 15% of the respective tariff. As and when the consumer brings down the harmonics within the limit, compensation charges shall be withdrawn. The measurement of harmonics shall be done by the Distribution Licensee using standard meters/equipment in the presence of consumers or their representatives. This compensation charges is applicable to HT-I & HT-III category of consumers. TANGEDCO shall give three months clear notice to all consumers under these categories stating that they shall pay 15% compensation charges if the harmonics introduced by their load is not within the limits set by CEA. The

TANGEDCO shall implement the compensation provision after three months period from the date of measurement if the harmonics measured is more than the permissible limits.”

9.11. In the case of the petitioner, TANGEDCO has measured the level of harmonics on 24.9.2014 using Class A instrument as per IEC 61000-4-30. The measurements are as follows:

Individual Voltage Harmonic distortion (max)-0.5%.

Total Voltage Harmonic distortion – 1.26%

Total Current harmonics distortion – 9.76%.

9.12. The limits on harmonics prescribed in CEA's Technical Standards of Connectivity to the Grid Regulations, 2007 is as follows:

“Part IV – Grid Connectivity Standards applicable to the Distribution Systems and Bulk Consumers

3. Voltage and Current Harmonics

(1) The total harmonic distortion for voltage at the connection point shall not exceed 5% with no individual harmonic higher than 3%.

(2) The total harmonic distortion for current drawn from the transmission system at the connection point shall not exceed 8%. ...”

9.13. Measurement of harmonics on 24.9.2014 show that total current harmonics distortion in the petitioner's service connection exceeded the permissible limits prescribed in CEAs Technical Connectivity Regulations. A notice dt.31.10.2014 has been issued by the Respondent TANGEDCO to the petitioner granting a three month period to bring down the harmonic limits within permissible levels from the date of measurement. After issue of such a notice, TANGEDCO has levied compensation charges of Rs.17,35,877/- in retrospect from October 2014 to 31.3.2015 by including the amount in the petitioner's Current Consumption bill of March 2015. TANGEDCO has continued levy of compensation charges until July 2015. The petitioner has

remitted the compensation charges upto July 2015, after which this petition has been filed.

9.14. TANGEDCO contends that notices were issued to all HT consumers under category I & III as per the provisions in the Tariff order 1 of 2012 dt.31.03.2012 and in the subsequent tariff orders viz. 1 of 2013 and 9 of 2014, and therefore levy of compensation charges in retrospect is in order. Commission had directed TANGEDCO to file the procedure followed for levy of compensation charges. The procedure submitted by TANGEDCO brings to light the following:

- (i) A circular memo. dt.31.03.2012 has been issued to follow the provisions in the Tariff order dt.30.03.2012 that included levy of compensation charges for failure to bring down the harmonic levels within prescribed limits.
- (ii) Another circular memo. dt. 27.04.2012 has been issued to measure harmonics using standard equipments and to implement levy of compensation charges after the three month period.
- (iii) After procurement of standard meters, measurement of harmonics have commenced from 12/2013. Compensation charges were levied from the date of measurement of harmonics for the erring consumers.
- (iv) To the clarifications raised by few Superintending Engineers as to the date of levy of Compensation charges, the following instructions have been issued on 05.11.2014:
 - (a) Direction to the Superintending Engineers of Distribution circles to confirm in the first instance issue of three month notices to all consumers under HT TF I and HT TF III categories. If the notices were not issued, to make arrangements to issue immediately a three month notice intimating that measurement of harmonics will be made after expiry of three months.
 - (b) On expiry of three month clear notice period, to take measurement of levels of harmonics and if the measurement is found beyond the limits specified by CEA, to issue notice that they are liable to pay compensation charges at 15%

of respective tariff from the date of measurement itself. Such levy has to be calculated on the gross energy consumption charges and continued till the consumer suppresses dumping of harmonics within the limits specified by CEA.

9.15. The procedure followed in the petitioner's case do not conform to TANGEDCO's own instructions. TANGEDCO has conceded to the fact that in rare cases measurements have been taken without issue of three month notice and the petitioner's case is one such where the level of harmonics was measured on 24.9.2014 and a notice dt.31.10.2014 issued to provide adequate harmonic filtering equipments within three months from the date of measurement. Inasmuch as there is no proof of service of prior notice before taking measurement as per the procedure followed by the licensee vide its Circular Memo dated 27-04-2012, the date of taking measurement on 24-09-2014 may be construed as the date of first notice. Therefore, three months notice period would expired on 23-12-2014.

9.16. Having issued a notice of three months to correct the level of harmonics in petitioner's service on 31-10-2014, Commission holds that the levy of compensation charges by TANGEDCO retrospectively before the expiry of the three month period in the notice dt.31.10.2014 which is the period granted to the consumer to rectify the limits of harmonics is not in order. The compensation charges collected prior to the date of expiry of the three month period i.e prior to 24.12.2014 is liable for refund.

9.17. The petitioner themselves have stated that harmonic filters were installed in November 2015. The measurement of harmonics made by TANGEDCO in the presence of the petitioner on 28.11.2015, extracted below, show harmonics within permissible limits. :

Individual Voltage Harmonic distortion (max)- 1.02%
Total Voltage Harmonic distortion – 1.35%
Total Current harmonics distortion – 4.67%.

9.18. Therefore, the petitioner is liable to pay compensation charges for the period after the date of expiry of the three month notice on 23.12.2014 to the date of rectification of limits of harmonics which is 28.11.2015. In other words, the petitioner is liable to pay compensation charges for the period from 24-12-2014 to 28-11-2015. The Respondent TANGEDCO is directed to adjust/ refund the compensation charges collected prior to the date of expiry of the three month notice i.e. prior to 24-12-2014 to the petitioner in accordance to the relevant provisions in the Commission's regulations in the Electricity Supply Code.

With the above orders, the petition is disposed.

10. 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)
(Dr.T.Prabhakara Rao)
Member

(Sd.....)
(G.Rajagopal)
Member

(Sd.....)
(S.Akshayakumar)
Chairman

/True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission