

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

PRESENT:

Thiru M. Chandrasekar

... **Chairman**

and

Thiru K. Venkatasamy

... **Member (Legal)**

M.P. No.22 of 2020

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

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

Vs.

M/s. PQ Welfare Consortium
Coimbatore.

.... Impleader

Dates of hearing : 25-08-2020; 06-10-2020; 01-12-2020;
02-02-2021; 09-03-2021; 15-04-2021;
20-04-2021; 22-06-2021 and
10-08-2021

Date of Order : 05-04-2022

The M.P.No.22of 2020 came up for final hearing on10-08-2021. The Commission, upon perusal of the petition and after hearing the submissions of the petitioner hereby makes the following order:-

ORDER

1. Prayer of the Petitioner in M.P No. 22 of 2020:-

The prayer of the petitioner in this petition is to-

- (i) Approve the new methodology discussed in para 9 above for measurement of Harmonics with the HT/EHT consumers as per the following Central Electricity Authority Regulations:
 1. Technical standards for connectivity to the Grid (Amendment) Regulations, 2019 and
 2. Technical Standards for connectivity below 33 kilovolts (Amendment) Regulations, 2019;
- (ii) Fix the compensation at 15% of the respective tariff in respect 11 kV and 22 kV consumers as fixed for bulk consumers of voltage level of 33 kV or above, 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;
- (iii) To instruct all the HT/EHT consumers by the TANGEDCO to install power quality meters by themselves within 12 months from the date of commencement of the amended Regulations as prescribed in this CEA Regulations so as to share the recorded data with the TANGEDCO as per the periodicity specified by the Commission as stipulated in the CEAmended Regulations.;
- (iv) To effect new HT / EHT service connections by the TANGEDCO only on installation of power quality meters by the applicant in their premises.

2. Facts of the Case:-

This petition has been filed in the matter of methodology for measurement of Harmonics in respect of HT / EHT services based on the Central Electricity Authority (1) Technical standards for connectivity to the Grid (Amendment) Regulations, 2019 and (2) Technical Standards for Connectivity below 33 kilovolts (Amendment) Regulations, 2019.

3. Contentions of the Petitioner:-

3.1. This petition has been preferred by the petitioner consequent to the amendments made to the following Regulations on 06-02-2019 by the Central Electricity Authority, a body established under section 3 of the Electricity (Supply) Act, 1948 and exercise functions and perform duties as per the provisions of the Electricity Act, 2003.

- (i) Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007
- (ii) Central. Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013 (now renamed as Technical Standards for Connectivity below 33 kilovolts Regulations, 2013)

3.2. The Commission in Order in T.P. No.1 of 2017 dated 11-08-2017 has observed that levying harmonic penalty is not applicable for the HT consumers connected at 11 kV and 22 kV, in accordance with the Judgment dated 05.06.2017 of the Hon'ble High Court of Madras in W.P. No. 25 of 2015 & Others.

In the said order, the Hon'ble High Court of Madras had observed that until the Central Electricity Authority (CEA) prescribes any standard for harmonics for 11kV/22 kV supply lines consumers and makes them also obligatory for harmonic controls, no obligation can be cast upon the 11 kV / 22 kV supply lines consumers for compliance.

3.3. TANGEDCO has filed appeal before the Hon'ble Division bench of High Court of Madras vide W.A.No. 388 of 2018 against the order of the single judge of High Court of Madras in W.P.No. 25 of 2015 & others and the same is pending till date. Further, TANGEDCO has also filed appeal before the Hon'ble Appellate Tribunal for Electricity (APTEL) against the Retail Tariff Order issued by the Commission vide T.P.No. 1 of 2017, dated 11-08-2017 for non-inclusion of harmonic penalty for 11 kV / 22 kV consumers and the appeal is yet to be numbered. The present miscellaneous petition is filed before the Commission without prejudice to the outcome of the orders of the Hon'ble High Court of Madras and the Hon'ble APTEL.

3.4. TANGEDCO measures the Harmonics only in respect of bulk consumers (who avails supply at 33 kV or above level) as prescribed by the Commission vide order in T.P.No. 1 of 2017, dated 11-08-2017 based on the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007. As per the above Regulations of the Central Electricity Authority, TANGEDCO follows the following limits of Voltage and Current Harmonics in respect of the bulk consumers:

- (i) The total harmonic distortion for voltage at the connection point shall not exceed 5% with no individual harmonic higher than 3%.
- (ii) The total harmonic distortion for current drawn from the transmission system at the connection point shall not exceed 8%.

3.5. As per the above retail tariff order of the Commission, 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.

3.6. As per the amendments to the CEA Regulations on Technical Standards for Connectivity to the Grid, 2007, all the existing bulk consumers (Consumers drawing power at 33 kV or above level) shall comply with the provisions of maintaining harmonics within the limit as prescribed in the IEEE 519-2014 standards. The Regulations has the following provisions for measurement of Voltage and Current Harmonics:

"(3) Voltage and Current Harmonics:-

(i) The limits of voltage harmonics by the distribution licensee in its electricity system, the limits of injection of current harmonics by bulk consumers, point of harmonic measurement, i. e. point of common coupling, method of harmonic measurement and other related matters, shall be in accordance with the IEEE 519-2014 standards, as amended from time to time;

(ii) Measuring and metering of harmonics shall be a continuous process with meters complying with provisions of IEC 61000-4-30 Class A.

(iii) The data measured and metered as mentioned in sub-paragraph (ii) with regard to the harmonics, shall be available with distribution licensee and it shall also be shared with the consumer periodically.

(iv) The bulk consumer shall install power quality meter and share the recorded data thereof with the distribution licensee with such periodicity as may be specified by the appropriate Electricity Regulatory Commission:

Provided that the existing bulk consumer shall comply with this provision within twelve months from the date of commencement of the Central Electricity Authority (Technical Standards for connectivity to the Grid) (Amendment) Regulations, 2019.

3.7. As per the amendments to the Technical Standards for Connectivity below 33 kV Regulations, 2013, the limits of injection of current harmonics at the point of common coupling by the user, method of harmonic measurement and other such matters, shall be in accordance with the IEEE 519-2014 standards. This regulation is applicable to all the generating companies or persons owning distributed generation resources, charging stations, prosumers or persons who are connected to or seeking connectivity with the electricity system below 33 kV voltage level. This Regulation has the following provisions for measurement of Voltage and Current Harmonics:

"11. Standards for distribution generation resources and prosumers, when acting as a generator. - Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519.

11 A. Standards for charging station, Prosumer, or a person connected or seeking connectivity to the electricity system.-

(1) The applicant shall provide a reliable protection system to detect various faults and abnormal conditions and provide an appropriate means to isolate the faulty equipment or system automatically.

(2) The applicant shall ensure that fault of his equipment or system does not affect the grid adversely.

(3) The appropriate licensee shall carry out adequacy and stability study of the network before permitting connection with its electricity system.

(4) The limits of injection of current harmonics at the point of common coupling by the user, method of harmonic measurement and other such matters, shall be in accordance with the IEEE 519-2014 standards, as amended, from time to time.

(5) The measuring and metering of harmonics shall be a continuous process with power quality meters complying with the provisions of IEC 61000-4-30 Class A.

(6) The data measured and metered as mentioned in sub-regulation (5), shall be available with the distribution licensee and be shared with the consumer periodically.

(7) The applicant seeking connectivity at 11 kV or above shall install power quality meters and share the recorded data thereof with the distribution licensee with such periodicity as may be specified by the appropriate Electricity Regulatory Commission:

Provided that the user connected at 11 kV and above shall comply with the provision of this sub-regulation within twelve months from the date of commencement of the Central Electricity Authority (Technical Standards for connectivity of the Distributed Generation Resources) (Amendment) Regulations, 2019.

3.8. In view of the above amendments to the Regulations of the Central Electricity Authority, it is proposed to follow the following methodology for measurement of Harmonics in respect of <33 kV / >33 kV electricity service connections of the TANGEDCO:

- (i) In order to impose new standard for measurement of harmonics as per the IEEE 519-2014, TANGEDCO shall give advance three months notice to all HT/EHT consumers. On measuring the harmonics after three months notice period at the consumer site and

if the limit of the harmonics is found in excess of the limit prescribed in IEEE 519-2014, TANGEDCO may levy the penal charges from the date of completion of three months notice period.

- (ii) Till finalization of new methodology for measurement of harmonics, TANGEDCO proposes to follow the existing methodology for measurement of harmonics with the consumers of voltage level of 33 kV or above.
- (iii) The periodicity, method of measurement, etc. proposed by the TANGEDCO considering IEEE 519-2014 standards for both categories of consumers (below 33 kV and 33 kV or above) are as below:

A. Instrumentation:

Portable Power Quality Analyzer of Class A type. (Based on IEC 61000 Part 4-7 & IEC 61000 Part 4-30)

B. Measurement Procedures

- (i) Point of Evaluation: (Based on IEC 61000-3-6)

The Point of Evaluation shall be at the Point of Common Coupling or at the control room for measurement convenience due to longer period of measurement and safety of the measuring equipments. When measurement is undertaken at the control room it shall be representative of the voltage class of PCC.

- (ii) Duration of Measurement (Based on IEC/TR 610003-6)

- a. The duration of measurements shall be 4 hours
- b. The duration shall be extended if necessary to capture the harmonics in a minimum of two operating cycle of the respective service.

(iii) Current at the time of Measurement

The measurement shall be undertaken while the consumer services are operating at a minimum of 75% of their average maximum demand current of the respective HT / EHT service.

The average maximum demand shall be calculated based on the past 12 months readings or from the number of months for which they were in service, if the service period is less than one year.

(iv) Parameter to be measured

The "Average" values of the following parameters shall be measured with 10 minutes aggregation, for the duration specified above.

- 1) Individual Harmonic distortion - Voltage (IHD_v)
- 2) Total Voltage Harmonics - Voltage (THD_v)
- 3) Total Harmonic Distortion - Current (THD_i)

From the value of Total Harmonic Distortion - Current (THD_i), through the Power Log software, Total Demand Distortion (TDD) may be calculated by giving I_L (average maximum demand current calculated based on the past 12 months readings) as an input.

95% probability value of the Individual and Total harmonic Distortion of the voltage (IHD_v & THD_v) and Total Demand Distortion (TDD) shall be arrived and compared with the limits specified in IEEE 519.

The highest 95% value of a parameter, amongst the phases, shall be reported as the respective harmonic level of that parameter, for the service under measurement.

C. Limit Values

The limit of individual and Total harmonic Distortion of the voltage (IHD_v & THD_v) shall be as per Table 1 of IEEE 519, which is given below:

Table 1- Voltage distortion limits		
Bus Voltage V at PCC	Individual harmonic (%)	Total harmonic Distortion THD (%)
$V \leq 1.0$ kV	5.0	8.0
1 kV $< V \leq 69$ kV	3.0	5.0
69 kV $< V \leq 161$ kV	1.5	2.5
161 kV $< V$	1.0	1.5

The limit of the Total Demand Distortion of the current (TDD) shall be as per IEEE 519, as rewritten in the following Table:

I_{sc}/I_L	TDD	
	11/22/33 kV	110 kV
Type equation here. < 20	5.0	2.5
$20 < 50$	8.0	4.0
$50 < 100$	12.0	6.0
$100 < 1000$	15.0	7.5
> 1000	20.0	10.0

IsC/IL	TDD
	230 KV
<25	1.5
25<50	2.5
≥ 50	3.75

D. Calculation of I_{sc} / I_L

The value of I_L (average maximum demand current) may be calculated based on the past 12 month's readings. The value of % impedance and the value of upstream source impedance may be considered for the calculation of I_{sc} and the following procedure shall be followed:

1. The rating, voltage ratio, secondary current and % impedance values from the name plate of the upstream transformer (one transformer from which the HT industry under consideration is fed from the respective sub-station) may be noted for calculation.

For example, let us consider a 11 kV industrial consumer, drawing an average demand current of 25 A fed from a 33 kV source sub-station via a 8 MVA rating, 33 / 11 kV voltage ratio, 420 A secondary current and $Z = 7\%$;

2. The upstream source short circuit apparent power shall be considered from the Table 2 of IEC 60076-5 specified for the 'European Practice', which is reproduced here for immediate reference.

Rated Voltage	Highest system voltage	Short circuit MVA
11, 22 kV	12, 24 kV	500
33 kV	36 kV	1000
110 kV	123 kV	6000
230 kV	245 kV	20000

3. Model Calculation:

Rated voltage of the consumer	11 kV
Sub-station voltage, where the consumer is fed from	33 kV
Upstream transformer rating at the sub-station	8 MVA
Rated secondary current of the transformer	420 A
% impedance of the transformer	7%
Short circuit MVA of the 33 kV source as above	1000 MVA
% impedance of the source with respect to the consumer side of the transformer	$\{8/1000\} \times 100 = 0.8\%$
Total impedance (Transformer + source)	$7\% + 0.8\% = 7.8\%$
I_{SC} calculated	$\{420 \times 100\}/7.8 = 5385 \text{ A}$
I_L (Average demand current) of the industry	25 A
I_{SC} / I_L of the respective industry	$5385 / 25 = 215.4$
<u>Conclusion</u>	
(i) Individual voltage harmonic limit	3%
(ii) Total voltage harmonic limit	5%
(iii) Total demand distortion limit	15%

E. Compensation charges:

Compensation charges shall be imposed, as per the recommendation of the Commission, if the values of the measured harmonic parameter exceed the limit stipulated in IEEE-519, in any of the following in any phase of the consumer service:

- Total Demand Distortion as % of I_L
- Individual Voltage Distortion as a % of fundamental V.
- Total Voltage Distortion (THD) as a % of fundamental V.

F. Periodicity:

Measurement to be carried out once in a year or as per requirements in specific cases.

3.9. In the suggested methodology for measurement of harmonics, the Committee after studying the entire procedure prescribed in IEEE 519-2014, has suggested a slightly modified procedure, which is suitable for practical implementation and requires approval of the Commission and the suggested procedure will not have any drawbacks to the consumers. The proposed modifications are summarized as below:

- (i) Instead of measuring individual current harmonics, TANGEDCO proposes to measure only Total Demand Distortion (TDD) since TDD is a collective representative of all the individual current harmonics. Further, converting the individual current harmonic measured with the base of fundamental current to the base of I_L (Maximum average demand load current for 12 months) will be a cumbersome process.
- (ii) Statistical evaluation - The IEEE 519-2014 states that very short and short time harmonic values should be accumulated over periods of one day and one week, respectively. For very short time harmonic measurements, the 99th percentile value should be calculated for comparison with the recommend limits. For short time harmonic measurements, the 95th and 99th percentile values should be calculated for comparison with the recommended limits. These statistics should be used for both voltage and current harmonics with the exception that the 99th percentile short time value is not recommended for use with voltage harmonics.

To study the measurement variations in different durations, a Committee was formed by TANGEDCO comprising officers from the various wings and the Committee made the following observations:

The measurement readings taken for 24 hours along with the split readings in the 6 x 4 hours were taken for analysis. During the analysis, it was found that the harmonic readings are not deviating much at 24 hours sample and 4 hours sample. Therefore, considering the practical feasibility and considering the safety of the measuring equipments at the consumer premises, the Committee suggested having 4 hours measurements with 10 minutes aggregation and with 95 percentile probability is suitable.

4. Additional Affidavit filed on behalf of the TANGEDCO:-

4.1. The Commission during hearing on 25.08.20 admitted the M.P.22 of 2020 filed by TANGEDCO and directed TANGEDCO to webhost the petition seeking comments from the stakeholders. The case was posted on 6.10.2020.

4.2. Based on the daily order issued by Tamil Nadu Electricity Regulatory Commission on 25.08.2020, TANGEDCO webhosted the Miscellaneous petition M.P.22 of 2020 in the TANGEDCO website on 28.8.2020 and the requested the comments of stakeholders on or before 11.9.2020.

4.3. The stakeholders have requested time extension for submitting the comments on new methodology for measurement of Harmonics. Based on the representation, the time was further extended up to 25.9.2020.

4.4. The Southern India Mills' Association (SIMA), PQ WELFARE CONSORTIUM, M/s TASMA, M/s TECA, Thiru A.D.Thirumurthy, (Member of Code Review Panel Committee) and Thiru. Umed Veda have submitted their comments on the Miscellaneous petition M.P.22 of 2020 and the details of

stakeholders comments and the remarks of TANGEDCO are enclosed in the Booklet containing action taken report Annexed to this additional Affidavit.

4.5. In the course of hearing on 6.10.2020, the TANGEDCO express their difficulties in submitting the remarks and requested extension time for submitting the counter affidavit.

4.6. The Commission issued the following directions to the licensee to conduct sample measurements at industries duly following the guidelines as mentioned below and posted the case to 01.12.2020 for further hearing.

- i) Measurement shall be made at the Point of Common Coupling (PCC) at the HV side or the LV side as the case may be as cited in the IEEE 519-2014.
- ii) The short circuit current at PCC and the average maximum load current (as specified and arrived in the IEEE STANDARD) shall be furnished along with the detailed report.
- iii) The report shall contain measurement methodology, duration of measurement, measurement of individual harmonic from 5th to 50th, for arriving the multiplier so as to give relief in respect of the individual harmonics limited within 25% of the values specified against the individual harmonics. All these shall be as per the CEA Regulation read with IEEE STANDARD 519-2014.

- iv) The duration of measurement shall be strictly adhered to as per IEEE STANDARD, otherwise the current harmonic distortion value arrived by measurement may drift from the true value and lost the precision.
- v) The measurement shall be done with a class A meter which will fully (not partially) complaint as per the specifications of both standards viz, IEC6100-4-7(edition 2.0)., IEC 6100-4-30(Edition3.0).The existing meters may be connected in parallel and the recordings of both the meters shall be furnished. The difference between the measurement suggested by TANGEDCO and the CEA methodology to be studied in detail.
- vi) Measurements shall be taken at least two or more industries likely with more harmonic generation in each voltage level of (HT)11 KV, 22 KV, 33KV, and EHT and especially measurement at electric traction, induction and arc furnaces and welding, IT parks, variable drive frequencies load etc., shall be done.
- vii) The measurement shall be done when industry is working with a load current nearer to maximum demand average current arrived as per the IEEE definition so as to get a real representative current harmonic distortion value
- viii) The measurement shall be done in the presence of the consumer or his authorised representative.

- ix) The report shall invariably mention the period of measurement, the meter details, like make, sl.no., compatibility with both the IEC STANDARDS, with its full specifications.
- x) The licensee shall be in a position to clarify any queries raised on measurement and its report.
- xi) The report shall be in hard copy (in duplicate) and all measurements and loggings by the meter in soft form for analysis purpose.
- xii) Such a field measurement report will help the Commission to take proper decision.

4.7. The case was heard on 01.12.2020 and extension time was granted by the Commission and the case was adjourned to 02.02.2021 for filing report on the remarks received from the stakeholders for further hearing.

4.8. Again the case was heard on 02.02.2021 and the case was adjourned to 09.03.2021 for filing affidavit for further hearing.

4.9. TANGEDCO had conducted the sample measurements at different industries as per the TNERC direction duly following the CEA guidelines i.e. IEEE 519-2014 standards and Booklet containing action taken report Annexed to this additional Affidavit.

4.10. As per the revised regulation for the Technical Standards for Connectivity below 33 kV Regulations, 2013, dated 08.02.2019, the distribution licensee shall install Power Quality Meters in a phased manner within 3 years from the date of

commencement of the regulation, covering of at least 33% of the 33 KV SS each year.

4.11. TANGEDCO proposes to install Power Quality Meters at 110 KV bus ends of 110/33KV & 110/11KV sub-stations (where the Distribution system gets interconnected to the Grid – under the purview of CEA) and the same will be programmed in a phased manner in a span of 3 years, from the date of commission's order, with at least 33% each year. However, TANGEDCO submits to have a field measurement on all 110 KV substation ends, and arrange to install permanent PQA on priority, in substations where the harmonics level are more than the IEEE prescribed limit.

4.12. Under the said circumstances, it is prayed that the Commission may pass an appropriate order to adopt the new methodology for measurement of Harmonics in respect of EHT/HT consumers as discussed as a consequent to the revised amendments made to the regulations by the CEA, which are reiterated below:-

- 1) Approve the new methodology discussed in para 9 in M.P.No.22 of 2020 for measurement of Harmonics with the HT/EHT consumers as per the following Central Electricity Authority Regulations:
 - i) Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007

- ii) Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013 (now renamed as Technical Standards for Connectivity below 33 kilovolts.
- 2) As per CEA Regulation, all the HT Consumers have to install the permanent Power Quality Analyzer in their premises within one year, and provide periodical report to TANGEDCO on a regular basis, with the periodicity assigned by the Hon'ble Commission.
- a) Once permanent installations of Power Quality Analyzers are made by the consumers, getting a uniform report from all the HT/LT consumers, getting a uniform report from all the HT/EHT consumers (about 9900 Nos) will have to be ensured for easy verification by TANGEDCO.
 - b) Once permanent Power Quality Analyzers are installed and periodical reports in a specific format as decided by TANGEDCO is obtained from the consumers, then TANGEDCO need not take separate measurement in the consumer premises.
 - c) TANGEDCO role of measurement at the consumer premises is thus limited to such a period, prior to the installation of permanent Power Quality Analyzer.
 - d) TANGEDCO may be permitted to continue the measurement of Harmonics, with Ed-2 Analyzer, with 10m aggregation with 4h duration at the consumer premises,

- i. Till such time the HT Consumers are installing the permanent Power Quality Analyzer in their premises, before the time span of one year.
 - ii. If the consumer fails to install the permanent Power Quality Analyzer in their premises, beyond the time span of one year, and levy of compensation of 12 months period as specified by the Commission.
 - e) If the consumer fails to submit the power quality report from the permanent Power Quality Analyser, as per the periodicity to be specified by the Commission, Distribution Licensee may be permitted to disconnect the supply by giving one month notice to the HT/EHT consumer.
- 3) Fix the compensation at 15% of the respective tariff in respect 11 kV and 22 kV consumers as fixed for bulk consumers of voltage level of 33 kV or above, 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.
 - 4) To instruct all the HT/EHT consumers by the TANGEDCO to install power quality meters by themselves within 12 months from the date of commencement of the amended Regulations as prescribed in this CEA Regulations so as to share the recorded data with the

TANGEDCO as per the periodicity specified by the Hon'ble Commission as stipulated in the CEA amended Regulations. However, since already 24 months of time has lapsed from the date of commencement of the amended regulation, it is humbly requested that the implementation of installation of Power Quality Meters by the HT/EHT consumers at their premises may be ordered within 12 months from the date of the order from the Commission.

- 5) To effect new HT / EHT service connections by the TANGEDCO only on installation of power quality meters by the applicant in their premises;

5. Impleading petition filed on behalf of M/s. PQ Welfare Consortium:-

5.1. The Petitioner states that the present impleading petition has been preferred on behalf of M/s.PQ Welfare Consortium, Coimbatore to implead in the Miscellaneous Petition No.22 of 2020 - In the matter of methodology for measurement of Harmonics in respect of HT/EHT services based on the Central Electricity Authority (1) Technical standards for connectivity to the Grid (Amendment) Regulations, 2019 and (2) Technical Standards for connectivity below 33 kilovolts (Amendment) Regulations, 2019.

5.2. M/s.PQ Welfare Consortium is a group of Engineering professionals persons working in Power Quality and especially Harmonics. Individually all the

members are conversant with the Power Quality especially rich knowledge in Harmonics and thorough in all applicable relevant Standards too.

5.3. As our group is consisting of passionate Engineers in PQ, Consortium's representation to PQ is Nationwide with the Interest in the Quality of Nation's Electricity Network.

5.4. The petitioner has more than 40 years of experience in the Power filed and experienced in the field of Power Quality especially Harmonics. Individually petitioner is engaged in involving and advising many industrial houses and Industrial Associations in the field of Power and Power Quality. Also, technical consultant for APQI (Asea Power Quality Initiative), which involved with Forum of Regulators for framing PQ Regulations and the petitioner submitted and presented many papers about Power Quality in India and many other countries.

5.5. M/s. PQ Welfare Consortium is interested in propagating Power Quality and interested in protecting the interest of Utility and here TANGEDCO and simultaneously the interest of Consumers. Hence M/s.PQ Welfare Consortium submits to the Commission permission to implead in MP.22 of 2020 to express its views and suggestions. M/s.PQ Welfare Consortium submitted its stakeholder comments to TANGEDCO on 14-09-2020 and conducted sample study at various industries as per Commission's Daily Order dated 6-10-2020 and submitted the report well in time on 30th November, 2020 and the second report on 8-03-2021.

5.6. In view of the above, the petitioner prayed to the Commission to allow M/s.PQ Welfare Consortium to get impleaded in MP. 22 of 2020 for offer their views and to allow the Petitioner to appear through video conferencing the Commission's hearing considering Petitioner's age and the prevailing Pandemic.

ORDER

The above petition having been kept pending pursuant to the direction of the Hon'ble High Court of Madras in its order dated 08-09-2021 in W.P. Nos.18128 and 18139 of 2021 to keep the proceedings in the present petition pending until final order are passed by the Central Electricity Authority and the said authority which is the first respondent in the said Writ Petitions having passed final orders and pursuant thereto, the Commission having invited comments from the stakeholders for amending the TNERC Supply Code and finalized the same to provide adequate safeguards on harmonic dumping in line with the guidelines of CEA, the present petition has become infructuous.

Accordingly, the petition is dismissed as infructuous.

(Sd.....)
(K.Venkatasamy)
Member (Legal)

(Sd.....)
(M.Chandrasekar)
Chairman

/True Copy /

Secretary
Tamil Nadu Electricity
Regulatory Commission