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Part VI—Section 2

Notifications of interest to a section of the public issued by Heads of Departments, etc.

NOTIFICATIONS BY HEADS OF DEPARTMENTS, ETC.

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NOTIFICATIONS BY HEADS OF DEPARTMENTS, ETC.

TAMIL NADU ELECTRICITY REGULATORY COMMISSION, CHENNAI

Amendments to the Tamil Nadu Electricity Supply Code

(Notification No. TNERC/SC/7 – 47 dated 29.03.2022)

(Lr.No. TNERC/Legal/1030/2022)

No. VI(2)/98/2022

WHEREAS the Tamil Nadu Electricity Regulatory Commission specified the Tamil Nadu Electricity Supply Code under section 50 of the Electricity Act, 2003 (Central Act 36 of 2003) and notified the same in the *Tamil Nadu Government Gazette*, dated the 1st September, 2004;

AND WHEREAS it is considered necessary to issue certain amendment to the Tamil Nadu Electricity Supply Code and such amendment shall be subject to the condition of previous publication and accordingly undergone previous publication.

NOW THEREFORE, in exercise of the powers conferred on it by section 181 read with section 50 of the Electricity Act, 2003, and all other powers enabling it in this behalf, the Tamil Nadu Electricity Regulatory Commission hereby makes the following amendment to the Tamil Nadu Electricity Supply Code (hereinafter referred to as the Principal Code), namely. –

AMENDMENTS

In the said Supply Code, –

(1) in regulation 4, in sub-regulation (1), forclause (iv), the following shall be substituted, namely: –

"Current Harmonic control:

a) Nonlinear loads change the sinusoidal nature of the ac power current (and consequently the ac voltage drops), thereby resulting in the flow of harmonic currents in the ac power system that can cause many ill-effects to the power system and to the consumers' installations. Hence the harmonic currents generated by the loads of consumers/ prosumers connected to electricity system at 11kV, 22kV, 33k Vand above and charging stations have to be brought within limits.

b) The CEA (Amendment) Regulations 2019 stipulate the same provision in respect of current harmonics that "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 Std. 519-2014, as amended, from time to time".

c) Measurement of current distortion / harmonic currents shall be made at the point of common coupling (PCC) of the Installation.

d) Power quality meter complying with the IEC Standard 61000-4-30 edition 3.0 class A – shall be used.

e) The Licensee shall use his portable power quality meter for one week for each installation of consumer/prosumer/charging station to measure the harmonic currents.

f) All three total demand distortion (TDD) values at 99th percentile very short time (3s) value, 99th percentile short time (10 min) value, 95th percentile short time (10 min) value shall be measured and compared with the values specified in IEEE Std. The highest value among the above three shall be considered for levying penalty.

g) If the measured values exceed the limits, a notice shall be issued to the consumer/prosumer/ charging station by the Licensee to install adequate harmonic filters within 6 months. The notice shall also convey that in case of non – compliance, penalty at the rate mentioned in the following sub-regulation h) will be levied by the Licensee for the subsequent 12 months and there after supply to the service shall be disconnected in case of noncompliance even after the said 12 months.

h) A penalty of a maximum of 10% in steps of 1% increase will be levied on the monthly current consumption charges as shown below:

TDD excess over and above the limit	***Penalty on the monthly current consumption charges***
Up to 3%	*1%*
Above 3% up to 6%	*2%*
Above 6% up to 9%	*3%*
Above 9% up to 12%	*4%*
Above 12% up to 15%	*5%*
Above 15% up to 18%	*6%*
Above 18% up to 21%	*7%*
Above 21% up to 24%	*8%*
Above 24% up to 27%	*9%*
Above 27% up to 30%	*10%*
Above 30 %	*10%*

If the excess TDD over and above the limit involves decimals and if the decimal is from 0.1 to 0.4, the whole number may only be reckoned. If it is from 0.5 and 0.9, the next whole number will be reckoned.

i) The levying of penalty shall be stopped by the Licensee upon installation of filters by the consumer/prosumer/charging station and testing by the Licensee. If it is confirmed by testing that the harmonic currents are brought within the limits specified in the IEEE Standards, the levy of penalty will have to be stopped from the date of intimation of the consumer/prosumer/charging station to the effect that the installation of filters are fully completed and ready for testing by the Licensee. If the measured values exceed the limits, the penalty would continue. The Licensee shall issue a notice to the consumer/prosumer/charging station forthwith to this effect. It is open to the consumer/prosumer/charging station to rectify/re-install the filters again and intimate the Licensee forthwith for re-testing before expiry of said 12 months.

j) Even after 12 months penalty period, if the consumer/prosumer/charging station does not come forward to install the required harmonic filters or unable to bring the values within prescribed limits, the Licensee shall issue a 30 days disconnection of supply notice to the consumer/prosumer/charging station for non – compliance. If the consumer/prosumer/charging station installs the filters and makes them ready for testing by the Licensee during the notice period, the Licensee shall test them before disconnection. If the measured values are within limits, the supply shall not be disconnected. If the measured values exceed limits, supply to the service shall be disconnected by the Licensee after expiry of the 30 days' disconnection notice period under report to the Commission.

k) During subsequent measurement by the Licensee, if the current distortion limit as specified in IEEE standard is not maintained, the Licensee is at liberty to disconnect the supply to the consumer/prosumer/charging station service by issuing 30 days' disconnection of supply notice under report to the Commission.

l) In case of new supply connectivity, a self-declaration by the applicant that adequate harmonic filters will be installed, shall be enclosed with the application requesting supply. The supply may be initially given and after 12 months the current distortion shall be measured and if it is found to be exceeding the limit, the further course of action shall be as per sub-clauses from (g) to (k), summarized above.

m) The Licensee is at liberty to conduct current harmonic distortion measurement at any time at the installation of consumer/ prosumer/charging station to check as to whether the current harmonic distortion is maintained within the limit by the consumer/ prosumer/charging station.

n) This Regulation shall apply to all bulk consumers at 33kV and above, consumers and prosumers at 11kV and 22kV and charging stations .This regulation is not applicable to HT tariff IV (Lift Irrigation)".

(By order of the Tamil Nadu Electricity Regulatory Commission)

C.VEERAMANI,
Secretary,
Tamil Nadu Electricity Regulatory Commission.

Chennai-600 032,
15th September 2022.

EXPLANATORY STATEMENT

The Electricity Act 2003 mandates that the basic need of consumers with regard to continuous, reliable and quality supply shall be fulfilled by the Distribution Utilities. Clause (i) of sub-section (1) of section 86 of the Electricity Act, 2003 confers powers to the State Electricity Regulatory Commission to "Specify *or enforce standards with respect to quality, continuity and reliability of service by licensees".*

2. The Tariff Policy of Ministry of Power notified on 28th January 2016 provides as:

"8.0 DISTRIBUTION

Supply of reliable and quality power of specified standards in an efficient manner and at reasonable rates is one of the main objectives of the National Electricity Policy. The State Commission should determine and notify the standards of performance of licensees with respect to quality, continuity and reliability of service for all consumers. It is desirable that the Forum of Regulators determines the basic framework on service standards. A suitable framework could be provided for the licensees to reach the desired levels of services as quickly as possible. Penalties may be imposed on licensees in accordance with section 57 of the Act for failure to meet the Standards".

3. Therefore, in order to ensure quality of power, the Commission is required to specify and enforce the standards to be maintained by consumers / prosumers / charging stations in regard to harmonics in pursuit of quality, continuity and reliability of service as mandated by the Act and Tariff Policy. Though the maintenance of standards on harmonics and the measures to deal with the dumping of harmonics have been prescribed in the Tamil Nadu Electricity Supply Code, a need has arisen to re-visit the provision in view of the latest developments on the subject. The question as to whether any penalty can be levied on the consumer categories below 33kV has been a subject matter of litigation before Hon'ble High Court of Madras and the issue having attained finality by the issue of Regulations by the CEA , the present exercise seeks to enforce the standards laid down by the CEA.

4. The CEA has amended the (Technical Standards for Connectivity to the Grid), Regulation 2007 *vide* (Technical standards for connectivity to the Grid) (Amendment) Regulations 2019, mandating compliance of IEEE 519-2014 standards in regard to limit of Harmonics, methodology of measurement of Harmonics and other related matters.

5. The CEA has also amended the (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013 *vide* (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2019, substituting the words "Connectivity below 33kilovolts" in place of "Connectivity of the Distributed Generation Resources" applicable to the generating companies or persons owning distributed generation resources, charging stations, prosumers or persons who are connected to or seeking connectivity with the electrical system below 33kV voltage level, mandating harmonic control in accordance with IEEE519-2014.

6. In order to comply with the above set of Act, policy and provisions of CEA Regulations, there is an imperative need to incorporate the required statutory provisions in Regulations of the Tamil Nadu Electricity Supply Code stipulating harmonic limits, Methodology of measurements, Meter standards, measures for non compliance etc., to be followed by the consumers/ prosumers/ charging stations to control harmonic pollution in the grid and ensure quality of supply to consumers.

7. The amendment seeks revision of regulations accordingly.

(By order of the Tamil Nadu Electricity Regulatory Commission)

C.VEERAMANI,
Secretary,
Tamil Nadu Electricity Regulatory Commission.

Chennai-600 032,
15th September 2022.

ANNEXURE

Tamil Nadu Electricity Supply Code

Sl. No.	*Existing regulation*	*Regulation as amended*
1.	**4. Charges recoverable by the Licensee –**	**4. Charges recoverable by the Licensee** –
	1(i)	1(i)
	(ii)	(ii)
	(iii)	(iii)
	(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.	*(iv) " Current Harmonic control :* *a) Nonlinear loads change the sinusoidal nature of the ac power current (and consequently the ac voltage drops), thereby resulting in the flow of harmonic currents in the ac power system that can cause many ill-effects to the power system and to the consumers' installations. Hence the harmonic currents generated by the loads of consumers/ prosumers connected to electricity system at 11kV, 22kV, 33kV and above and charging stations have to be brought within limits.*
	(v)	
	(vi)	*b) The CEA (Amendment) Regulations 2019 stipulate the same provision in respect of current harmonics that "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 Std. 519-2014, as amended, from time to time".* *c) Measurement of current distortion / harmonic currents shall be made at the point of common coupling (PCC) of the Installation.* *d) Power quality meter complying with the IEC Standard 61000-4-30 edition 3.0 class A – shall be used.* *e) The Licensee shall use his portable power quality meter for one week for each installation of consumer/prosumer/charging station to measure the harmonic currents.* *f) All three total demand distortion (TDD) values at 99th percentile very short time (3s) value, 99th percentile short time (10 min) value,95th percentile short time (10 min) value shall be measured and compared with the values specified in IEEE Std. The highest value among the above three shall be considered for levying penalty* *g) If the measured values exceed the limits, a notice shall be issued to the consumer/prosumer/ charging station by the Licensee to install adequate harmonic filters within 6 months. The notice shall also convey that in case of non – compliance, penalty at the rate mentioned in the following sub-regulation h) will be levied by the Licensee for the subsequent 12 months and there after supply to the service shall be disconnected in case of noncompliance even after the said 12 months.*

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