

CENTRAL ELECTRICITY AUTHORITY

Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations – 2013

Dated: 30th September, 2013

Sl. No.	Description	Summary
1.	Short Title and Commencement	<ul style="list-style-type: none"> • Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013.dated the Dated: 30th September, 2013 • Regulations to come into force on the date of their publication in the Official Gazette of India.
2.	Definitions	As per Regulations.
3.	Applicability	<ul style="list-style-type: none"> • Regulations shall be applicable to all the generating companies or persons owning distributed generation resource, which are connected to or seeking connectivity with the electricity system • In case a licensee owning the electricity system to which connection is to be made also owns the distributed generation resource, these regulations shall be applicable <i>mutatis mutandis</i>
4.	General Connectivity Conditions	<ul style="list-style-type: none"> • Applicant to make a formal request to the licensee for connection to electricity system of the licensee/generating station . • Applicant shall be responsible for the planning, design, construction, reliability, protection and safe operation of its own equipment subject to the regulations for construction, operation, maintenance and connectivity and other statutory provisions. • Applicant and the user to furnish data as prescribed by the licensee • Applicant and the user to provide necessary facilities in the distributed generation resource for communication and storage of data and other parameters • The applicant and the user shall coordinate with the appropriate licensee on the issues including but not limited to protection, safety, and metering. • Licensee to carry out the inter-connection • Every connection of an applicant's system to the electricity system to be covered by a connection agreement between the applicant and appropriate licensee, • Licensee to inform the concerned State transmission utility (STU) within thirty days of acceptance of application for connectivity of a generating station to electricity system operating at voltage level below 33 kV. STU shall in turn inform the State Load Despatch Centre with details of installed capacity, generator capabilities, connectivity and likely date of commissioning or date of commercial operation.
5.	Standards and Codes of Practice	<p>(1) Applicant to follow the industry best practices and applicable industry standards in respect of the equipment installation and its operation and maintenance.</p> <p>(2) The equipment including overhead lines and cables to comply with the relevant Indian standards issued by Bureau of Indian Standards (BIS).</p> <p>(3) In case BIS has not issued relevant standard, IEC standard or British Standards or American National Standards Institute (ANSI)/ any other equivalent International Standard to be followed in that order:</p> <p>In case a standard other than Indian Standard is followed, necessary corrections or modifications shall be made for nominal system frequency, nominal system voltage, ambient temperature, humidity and other conditions prevailing in India before actual adoption of the said standard.</p> <p>(4) The effects of wind, storms, floods, lightning, elevation, temperature extremes, icing, contamination, pollution and earthquakes must be considered in the design and operation of the connected facilities.</p>

		<p>(5) Installation, operation and maintenance of the equipment by the applicant shall conform to the relevant standards specified by the Central Electricity Authority as and when they come into force.</p> <p>(6) Safety. - Applicant to comply with the Central Electricity Authority (Measures Relating to Safety and Electricity Supply) Regulations, 2010 for the proposes of safety under these regulations.</p> <p>(7) Sub-station Grounding. - Sub-station grounding shall be done in accordance with IS 3043, the code of practice for earthling issued by BIS.</p> <p>(8) Metering. –</p> <p>(i) Meters shall be provided as specified in the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006</p> <p>(ii) Measurement of harmonic current injection , Direct Current injection and flicker shall be done with calibrated meters before the commissioning of the project and once in a year in presence of the parties concerned and the indicative date for the same shall be mentioned in the connection agreement:</p> <p>In addition to annual measurement, if licensee/ generating company, desires to measure harmonic current injection or Direct Current injection or flicker, it shall inform the other party in writing and the measurement shall be carried out within five working days</p> <p>(9) Schematic Diagrams. - Applicant and user to prepare single line schematic diagrams of its system facility and make available to the appropriate licensee.</p> <p>(10) Inspection, Test, Calibration and Maintenance prior to connection.</p> <p>(i) Before physical connection, the applicant shall complete all inspections and tests finalised in consultation with the licensee/ generating station to which his equipment is getting connected.</p> <p>(ii) Applicant to make available all drawings, specifications and test records of the project equipment to the appropriate licensee or generating station as the case may be.</p> <p>(11) Standards for distributed generation resources. –</p> <p>(i) Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519.</p> <p>(ii) The distributed generating resource shall not inject Direct Current greater than 0.5% of the full rated output at the interconnection point.</p> <p>(iii) The distributed generating resource shall not introduce flicker beyond the limits specified in IEC 61000:</p> <p>(iv) Every distributed generating resource shall be equipped with automatic synchronisation device:</p> <ul style="list-style-type: none"> • Provided that induction generators, except self-excited induction generators, shall not require a synchronising device: • Distributed generation resources using inverters not required to have separate synchronising device, if the same is inherently built into the inverter. <p>(v) For three-phase generators, the circuit breakers shall be three-phase devices with electronic or electromechanical control.</p> <p>(vi) Distributed generation resource operating in parallel with electricity system shall be equipped with the following protective functions to sense abnormal conditions on electricity system</p> <p>(a) Over and under voltage trip functions if voltage reaches above 110% or below 80% respectively with a clearing time upto two seconds; however, appropriate licensee may prescribe a narrower range of voltage for the purpose.</p> <p>(b) Over and under frequency trip functions, if frequency reaches 50.5 Hz and below 47.5 Hz with a clearing time upto 0.2 seconds; however, appropriate licensee may prescribe a narrower range of frequency for the purpose.</p> <p>(c) Distributed generation resource shall cease to energise the circuit to which it is connected in case of any fault in this circuit</p>
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