

R8-17 STANDARD VOLTAGE

(a) Each electric supplier shall adopt and file with the Commission standard average service voltages available from its distribution class facilities. The filing shall contain the nominal voltage, base voltage, lower limit, and upper limit. The voltage maintained at the point of delivery shall be reasonably constant and variations therein should not normally exceed the limits set forth in this rule.

- (1) The standard nominal voltage adopted by the electric supplier shall be a voltage indicated by the version of ANSI Standard C84.1, Electric Power Systems and Equipment-Voltage Ratings (60 Hz), or equivalent ANSI standard as later amended, in effect at the time of adoption of nominal voltages. The following standard nominal service voltages are hereby adopted by the Commission as the preferred standard nominal service voltages:

NOMINAL SYSTEM VOLTAGE****		
Two-wire	Three-wire	Four-wire
Single-Phase Systems		
120*	120/240*	
Three-Phase Systems		
		208Y/120***
		240/120
	240	
		480Y/277
	480	
	600**	
	2400	
	4160	4160Y/2400
	4800	
	6900	
		8320Y/4800
		12000Y/6930
		12470Y/7200
		13200Y/7620
	13800	13800Y/7970
		20780Y/12000
	23000	22860Y/13200
		24940Y/14400
	34500	34500Y/19920

*see (a)(2) below

**This classification covers the range of nominal voltages from 550 to 600 volts.

***A modification of this three-phase, four-wire system is available as a 120/208YV service for single-phase, three-wire, open-wye applications.

****Preferred system voltages are in bold-face type.

- (2) An electric supplier may adopt different nominal voltages to serve specific customers if such action does not compromise prudent transmission and distribution system operation.
- (b) In order to promote harmony between the service of electric suppliers and the utilization of voltage requirements of presently manufactured equipment, the following service voltage variations are permitted:
- (1) For service rendered for individual residential use or specifically for lighting purposes, the voltage variations shall not exceed five percent (5%) above or below the standard base voltage.
 - (2) For other service the voltage variations shall not exceed ten percent (10%) above or below the standard base voltage.

- (c) An electric supplier may elect to deliver service at a nominal voltage that is not standard on its system. The variation in the nonstandard voltage shall not exceed the limits set forth above for the type of service being rendered.
- (d) Upon approval of the Commission and proper notification to its customers a utility may cease to deliver a particular voltage.
- (e) Variations in voltage in excess of those specified that are caused by the following shall not be construed a violation of this rule:
- (1) Addition of customer equipment without proper notification to the electric supplier.
 - (2) Operation of customer's equipment.
 - (3) The action of the elements.
 - (4) Infrequent and unavoidable fluctuations of short duration due to system operations.
 - (5) Conditions that are part of practical operations and are of limited extent, frequency, and duration.
 - (6) Emergency operations.
- (f) Customers shall select, install, maintain and operate their electrical equipment so as to cause the least interference with the regulation of the electric supply system. Three phase motors in excess of 20 horsepower, single phase motors in excess of five horsepower and other apparatus with high starting or fluctuating currents must be installed in accordance with the supplier's filed tariffs and rules and regulations.
- (g) Greater variations in voltage for service to installations that permit greater variations than those required above may be allowed upon specific authorization by the Commission.

(NCUC Docket No. E-100, Sub 9, 4/25/72; NCUC Docket No. E-100, Sub 153, 11/27/2019.)