



**CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
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NEW YORK, NY 10003**

DISTRIBUTION ENGINEERING, SYSTEM DESIGN

**SPECIFICATION EO-2065
REVISION 8
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OCTOBER 15, 2015**

LOW TENSION A.C. SERVICE VOLTAGE LIMITS

FILE: APPLICATION AND DESIGN MANUAL NO. 4

TARGET AUDIENCE	DISTRIBUTION ENGINEERING DISTRIBUTION SERVICES REGIONAL CONTROL CENTERS REGIONAL ENGINEERING
NESC REFERENCE	NONE

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1.0 **PURPOSE**

This specification provides both the maximum and minimum limits for low tension A.C. service voltages. These voltages are based on ANSI C84.1 which defines these limits for both first and second contingency design areas when all supply feeders are in service or a single supply feeder is out of service. In the case of the loss of a second feeder, ANSI C84.1 does not define voltage limits for this level of contingency. This is an additional level of reliability that ANSI does not call for that is available in the Con Edison service territory.

2.0 **REGIONS APPLICABLE**

All Regions

3.0 **DEFINITIONS**

Service Voltage - The service voltage is the voltage at the point where the electric systems of the supplier and user are connected (usually called the point of common coupling).

4.0 **SERVICE VOLTAGE LIMITS**

The service voltage limits for first and second contingency are listed in the table below titled "Customer (PCC Meters) Voltage Limits" for the various secondary distribution systems available in the Con Edison service territory (see EO-2006, Preferred Secondary Distribution Systems).

The voltages listed in the table below are the ANSI mandated standards for service voltage, also referred to as customer point of common coupling.

The service take-off voltage is calculated in PVL. These PVL limits are higher than the ANSI standard for service voltage limits. This is to account for a 4V drop, which is applied to calculate the customer service voltage, and is to account for the impedance from the service take-off to the service voltage.

A graphic of this is shown in Attachment A.

5.0 **REFERENCES**

EO-2006 Preferred Secondary Distribution Systems Application and Design Manual No. 4

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TABLE: Customer (PCC Meters) Voltage Limits

NOMINAL (Volts)	NORMAL CONDITIONS WITH ALL SUPPLY FACILITIES AVAILABLE (Volts)	FIRST CONTINGENCY (Volts)	SECONDARY CONTINGENCY (Volts)
120	126-114	126-110	126-105
208	218-198	218-191	218-182
240	252 - 228	252 - 220	252 - 210
265	278 - 252	278 - 243	278 - 232
460	483 - 437	483 - 422	483 - 402

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REVISION 8: Updated 4.0 to better explain customer voltages, simplified Table 1, and added Attachment A.	FILE: Application and Design Manual No. 4
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ATTACHMENT A

Service Take-Off and Service Voltage Example

