

NYSEG/RGE has examined the current 2017 National Electric Safety Code (NESC) related to communication ground clearance as well as documenting our Desired Practices for efficient utilization of existing pole space. There is one area of the NESC where we believe stakeholders may be interpreting the code differently and thus leading to the need to develop a common understanding. In 1987 the stated clearances in NESC Table 232-1 were revised from the nominal conditions of 60 degrees Fahrenheit to a worst case condition. If we reference figure 230-1 on page 94 of the 2017 NESC, the State of New York falls in Zone 1. Then referencing Rule 232 (Exhibit 1 pictured below) we see the conditions that constitute a worst case condition. For NYSEG / RGE the worst case condition is Rule 232 A 3 which states 32 degrees F with a radial thickness of ice. Table 230-1 (Exhibit 2 pictured below) defines the radial thickness of ice as ½ inch for Zone 1. We realize that worst case condition may be looked at by three perspectives listed in Rule 232 (1, 2 or 3).

Since field surveys for 3<sup>rd</sup> party pole attachments are not conducted under the worst case condition of 32 Degrees F with ½ inch of ice on the conductors, we have a need to make a reasonable conversion of the measurements stated in Table 232-1 to measurements that would be appropriate under nominal conditions present during a normal field survey. Utilizing the pre-1987 code conditions of 60 degrees F seems reasonable. The conversion factor we utilize is derived by dividing the worst case clearance of 15.5 feet by the nominal 60 degree F clearance of 18.0 feet, resulting in a conversion factor of 0.8611. This conversion factor is then applied to the various scenarios provided in NESC Table 232-1 to derive a reasonable clearance measurement for determining proper communications ground clearance during a field survey for 3<sup>rd</sup> party pole attachments. These converted measurements are shown in Exhibit 3 below.

NYSEG/RGE has develop this set of guidelines for personnel performing 3<sup>rd</sup> party pole attachments that can be applied efficiently without detailed engineering on each and every pole. We are open to discussing other conversion factors as well as expanding the scenarios listed.

Additionally, NYSEG / RGE has developed a set of Desired Practices that are intended to provide guidance on the efficient use of existing pole space. The Desired Practices are listed as Exhibit 4 below.

# Exhibit 1

## Determining Worst Case Condition

### 232. Vertical clearances of wires, conductors, cables, and equipment aboveground, roadway, rail, or water surfaces

#### A. Application

The vertical clearances specified in Rule 232B1 apply under the following conductor temperature and loading conditions, whichever produces the largest final sag:

1. 50 °C (120 °F), no wind displacement

2. The maximum conductor temperature for which the line is designed to operate, if greater than 50 °C (120 °F), with no wind displacement

3. 0 °C (32 °F), no wind displacement, with radial thickness of ice, if any, specified in Table 230-1 for the zone concerned

*EXCEPTION:* The conductor temperature and loading condition for trolley and electrified railroad contact conductors shall be 15 °C (60 °F), no wind displacement, final sag, or initial sag in cases where these facilities are maintained approximately at initial sags.

*NOTE:* The phase and neutral conductors of a supply line are normally considered separately when determining the sag of each due to temperature rise.

# Exhibit 2

## Radial Thickness of Ice

Table 230-1—Ice thickness for purposes of calculating clearances

	Clearance zone (for use with Rules 232, 233, 234, and 235)				
	Zone 1 see Figure 230-1	Zone 2 see Figure 230-1	Zone 3 see Figure 230-1	Zone 4: Warm islands <sup>①</sup>	
				Altitudes sea level to 2743 m (9000 ft)	Altitudes above 2743 m (9000 ft)
Radial thickness of ice					
(mm)	12.5	6.5	0	0	6.5
(in)	0.50	0.25	0	0	0.25

<sup>①</sup> Warm islands are those located from latitude 25 degrees south through 25 degrees north and include American Samoa (14°S), Guam (13°N), Hawaii (22°N), Puerto Rico (18°N), and Virgin Islands (18°N).



## Exhibit 3

### Conversion Table – Worst Case to Nominal

<b>Vertical Communication to Ground Clearance</b> <b>NESC Worst Case (Zone 1): 232 A3, Page 97 = 32°F</b> <b>and</b> <b>230-1, Page 95 = 1/2inch Ice</b>	<b>Worst Case</b> <b>(32°F, 1/2</b> <b>Ice)</b>	<b>Nominal</b> <b>(60°F)</b>	<b>NESC Code</b> <b>2017</b>
<b>Areas Crossing</b> roads, streets, alleys, commercial/residential driveways, parking lots, farmlands, orchards, and forests <b>subject to truck traffic</b>	15.5ft	18ft	Table 232-1, Row 2, Page 103
<b>Areas Crossing</b> Residential Driveways (Insulated communication service drops)	11.5ft	13.4ft	Table 232-1, Row 3, Note 7, Page 103
<b>Areas Crossing</b> alleys, driveways( Non-residential or Residential), or parking lots not subject to truck traffic	15ft	17.4ft	Table 232-1, Row 3, Note 13, Page 103
<b>Areas Paralleling</b> roads where it's unlikely vehicles will be crossing due to deterrents such as <b>curbs</b>	15ft	17.4ft	Table 232-1 Row 9, Note 24, Page 104
<b>Areas Paralleling</b> roads where it's unlikely vehicles will be crossing (Can include Farmlands/orchards)	13.5ft	15.7ft	Table 232-1 Row 10, Page 104
<b>Areas Paralleling</b> roads where it's unlikely vehicles will be crossing due to deterrents such as <b>fences, ditch lines, embankments, or other terrain features</b>	9.5ft	11ft	Table 232-1 Row 10, Note 10, Page 104
<b>Areas Crossing or Paralleling</b> pedestrian ways, forest, or back yards with restricted traffic. Riders on horses, mobile units, and vehicles > 8ft are prohibited due to regulations or permanent terrain	9.5ft	11ft	Table 232-1, Row 5, Note 9, Page 103

## Exhibit 4

### Practices for Efficient Use of Existing Pole Space

1. In no cases should electric to communications separation be reduced to less than NESC and NYSEG/RG&E minimums.
2. Attempts should first be made to put 3rd. party communications in the Telco Assigned Space. Telco should always have the option to move down if within NESC guidelines.
3. Each party (NYSEG/RGE and Telco) can utilize part of the other parties "Assigned Space" to avoid a pole replacement (viewed as borrowing space). If a future pole replacement is required that would not have been required "but for" the "borrower" being out of its space, then the "borrower" would pay the "lender" Pole Life Credit (remaining value of the old pole) when the pole is replaced.
4. NYSEG/RGE allows third party attachment above the Telco Assigned Space if there is space available or can be made available by rearrangement and we have no definitive plans for using that space.
5. If NYSEG/RGE have definitive plans to use the space we have purchased [Assigned Space] we do not have to allow the reduction of it due to a 3rd party attachment.
6. NYSEG/RGE allows communication to go below the 18'10" [Assigned Ground Clearance Space] as long as the mid span ground clearance is in compliance with NESC and NYSEG/RG&E minimums.