



National Electrical Safety Code®

Interpretation

Section 22. Relations Between Various Classes of Lines and Equipment

Rule 224A3a

Communication Circuits Located Within the Supply Space and Supply Circuits Located Within the Communication Space

(2002 Edition, page 100)
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Question

This pertains to Rule 224A3a, which requires the communication circuit be protected by fuseless surge arresters, drainage coils, or other suitable devices to limit the normal communication circuit voltage to 400 V or less to ground.

We are processing numerous requests from third-party wireless attachers to install wireless antennas on our wood distribution poles. One scenario is to install an antenna at the pole top, above a 12 kV primary line and run an RF transmission line through the supply space to equipment located in the communication space. Does this rule require a voltage regulation device to limit the circuit voltage to 400 V or less to ground, on the RF transmission line?

Rule 224A3a is ambiguous because it does not clearly state what type of communication circuit needs to be protected by fuseless surge arresters, drainage coils, or other suitable devices to limit the normal communication circuit voltage to 400 V or less to ground. One interpretation is a communication line used to transmit data, in voltage form, that is strung from pole to pole. Another interpretation is any line that is related to communication. This would include an RF coaxial cable that transmits data, in RF form, not voltage form. Since this rule was created prior to 1990, it is doubtful it was intended for coaxial cable to support third-party wireless antennas.

Discussion

The following cable is a sample of an RF transmission cable that will connect to an antenna located on the top of a wood distribution pole to a communication box located in the communication space. The cable will be routed in a schedule 40 PVC conduit as it transits the supply space.

Commscope: Part Number FSJ4-50B
Superflexible Foam Coaxial Cable, corrugated copper, ½ in. Black, PE Jacket



Interpretation

The requirement of Rule 224A3a is based on the ability of a communication circuit to transmit voltage greater than 400 V into the communication space, not the type of communication circuit. If the RF transmission line can transmit a voltage greater than 400 V into the communication space, then the answer to your question is yes.

While Rule 224A3a provides examples of devices to use to limit the voltage, it does not specify a particular device.