National Electrical Safety Code®

Interpretation

Section 41.
Supply and communications systems—Rules for employers

Rule 410A3 General Requirements—General
(2007 Edition, page 246)
(14 January 2009) IR557

Does the phrase "on or near energized parts or equipment" intend to include or exclude conductors? Specifically, does this Rule apply to insulated conductors in an underground manhole location? If an employee is working on a de-energized conductor in a manhole, does the employee need arc flash protection for the other energized, but insulated, conductors that are located in the same manhole?

Discussion: All underground primary cable work is performed with the cable being worked on de-energized and grounded. Depending upon the type and number of splices, an employee can be in a manhole location for the entire workday, and much of the work is done bare-handed, or only with leather work gloves. If arc flash protection is required for the other insulated, but energized, cables in the vicinity, it would make routine tasks difficult due to the level of PPE that may be required. If the Rule was meant to include conductors, words similar to "on or near energized lines, conductors, parts or equipment" should be used.

Interpretation

The Interpretations Subcommittee has considered the subject Interpretation Request for Rule 410A3 and has developed a consensus report as follows:

"The Rule 410A3 phrase "on or near energized parts or equipment" includes conductors. In answer to the specific question, the Rule applies to energized insulated conductors (cables) in manholes as well as to overhead plant energized facilities.

Employees working on a de-energized cable in a manhole may or may not require flash protection because of exposure to other energized cables or equipment in the manhole. Rule 410A3 requires an assessment of the potential for an electric arc and the wearing of protective clothing as appropriate. The employer is responsible for determining potential employee exposure, based on what activities will occur and to what extent such activities may potentially initiate an arc.

While it is theoretically possible for an arc to occur whenever parts or equipment are energized, the likelihood—in part—is typically dependent upon the work being performed on energized facilities. Methods for determining potential employee exposure to arc hazards are normally site-specific and beyond the scope of this request for interpretation."
