

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Meter Enclosures with Generator Feed-Through Feeders

Code: 2017 Electrical Code
Section: 230.7

Date: August 12, 2019

Question 1:

Is a meter enclosure defined as a raceway if it is being used to access an interior electrical panel with feed-through feeder conductors supplied from a generator transfer switch?

Answer 1:

No. The definition of a “Raceway” in Article 100 of the State Electrical Code describes a channel such as conduit, gutters, troughs, busways, etc. Just because a panel or cabinet is used in a manner similar to a raceway, does not define the enclosure as a raceway. If a panel or cabinet enclosure can be defined as a raceway, then section 230.7 would prohibit allowing service-entrance conductors from entering a main service panel or transfer switch where branch-circuits and feeders are present.

Question 2:

Are there any sections in the State Electrical Code that specifically prohibit a meter enclosure from being used as a means to access an interior electrical panel with feed-through feeder conductors supplied from a generator transfer switch?

Answer 2:

No. Meter enclosures are referenced in Articles 110, 230, 312, and 551 of the State Electrical Code. None of these articles explicitly prohibit the use of the meter enclosures from the aforementioned installation method.

While the code does not go beyond section 230.7 to address the issue with close proximity between the service conductors and other conductors, there is a logical reason to keep a feeder supplied by a generator or any backup alternate source away from the service conductors. If the transfer switch is in the backup alternate source position (current is on the generator’s feeder) then the service conductors should not have current because the load on the service conductors have been disconnected; and then if the feeder to the interior of the home from that alternate source is tightly bound against the service conductors, the magnetic field encompassing the feeder can induce current on the service conductors (similar to physics of a transformer) and send current back to the utility.

Leaving a 1 inch or so between the service entrance and alternate source conductors in any enclosure reduces that risk because the magnetic field that encompasses a 200-amp conductor with current becomes too weak to induce any significant current; which is something that cannot be accomplished when the conductors are grouped within a raceway. The same thought process should apply in any scenario where these circumstances are present, including the transfer switch.

Question 3:

Would the listing or any manufacturer's installation instructions for a meter enclosure prohibit using the enclosure as a means to access an interior electrical panel with feed-through feeder conductors supplied from a generator transfer switch?

Answer 3:

Yes. The manufacturer's installation instructions provided with the meter enclosure must be complied with in addition to the Code.

Question 4:

Are there any special rules concerning feed-through conductors such as spacing and labeling?

Answer 4:

Yes. All installations must comply with the rules provided in section 312.8(A)(1). No splices are allowed inside the meter enclosure for any feed-through conductors. A label shall be placed on the meter enclosure as described in 312.8(A)(3).

Question 5:

Can the electrical utility regulate the installation of a meter enclosure?

Answer 5:

Yes. The electrical utility can create regulations that are in addition to the State Electrical Code for metering enclosures and other service-related equipment. The electrical utility could prohibit feed-through feeder conductors supplied from a generator transfer switch from entering a meter enclosure; however, the installation may still be approved as Code compliant.

The State Electrical Division has no authority to interpret the regulations of any electrical utility. All interpretations and appeals pertaining to an electrical utility's authority or regulations must be made with the utility itself or North Carolina Utilities Commission.