Disconnection of the telephone grounding bond at livestock farm pedestals

A cooperative procedure developed by:
The Michigan Agricultural Electric Council and the Telecommunications Association of Michigan

By
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In Michigan there are dozens of electric power suppliers and telecommunications providers. Each of these electric utilities and telephone companies provide their respective service to livestock farms, and each had their own installation and maintenance procedures to prevent the possibility of the utility system from becoming a possible source of stray voltage on the farm. Communication and coordination of these procedures were varied and challenging. To provide a consistent procedure and improve communication, the Michigan Agricultural Electric Council(MAEC), based in the Department of Biosystems & Agricultural Engineering at Michigan State University, and the Telecommunications Association of Michigan(TAM), teamed up to develop the following procedure. Members of the MAEC include most of the suppliers of electric power in Michigan, and members of the TAM include most of the suppliers of telephone service in Michigan.

ELECTRIC UTILITY PROCEDURE:

Electric utilities frequently separate primary and secondary grounded neutrals at the transformer serving livestock farm customers. This procedure prevents off-site neutral-to-earth voltage from becoming a possible source of stray voltage at animal contact locations on the associated farm.

NORMAL TELEPHONE COMPANY OPERATING PROCEDURE:

Local telephone companies bond the buried drop shield to the main cable shield(s). The drop shield is also bonded to the electric power ground at the subscriber premise, as required by the National Electrical Safety Code and the National Electrical Code. At locations where the electric power utility has separated their primary and secondary neutrals, the normal telephone company operating procedure may provide a path between the electric primary and secondary neutrals. This path could allow current from the electric power company primary neutral to be present on the farm wiring.

When it has been established that the telephone company's drop shield has become the path for primary/secondary electric power neutral voltages, the telephone company shall

disconnect its bond at the serving pedestal by way of a special procedure and equipment installation.

THE MICHIGAN AGRICULTURAL ELECTRIC COUNCIL RECOMMENDS THE FOLLOWING COOPERATIVE PROCEDURE:

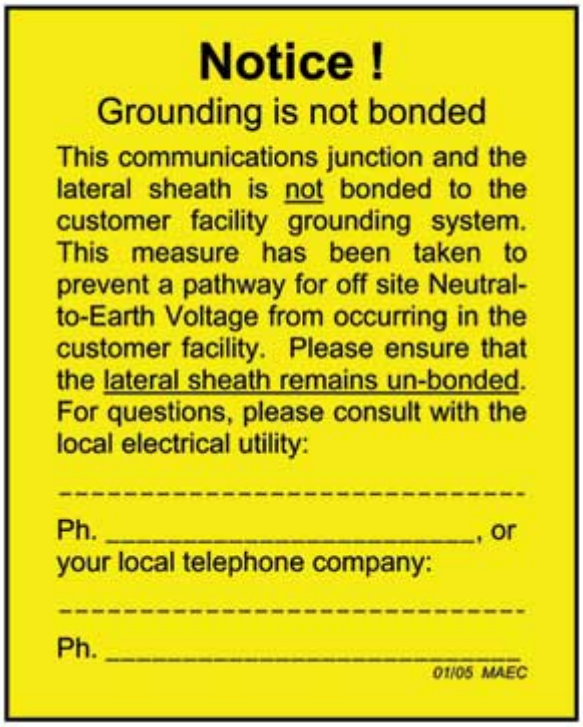
1. The local electric utility, upon determining that it will separate primary and secondary neutrals at the electric service transformer serving a livestock farm customer, will contact the local telephone company to request disconnection of the lateral bonding at the pedestal.

2. The local telephone company will expeditiously consider the electric utility's request, and determine whether to disconnect the shield bond at the pedestal. When the local telephone company has made a determination, it will contact the electric utility to inform it of its decision, and provide an estimated date and time of action it may take. The local telephone company will also notify the electric utility after completing action.

3. In cases where the lateral shield bond is disconnected, the telephone company technician will install a "Notice" decal, provided by the Michigan Agricultural Electric Council, on the outside of the pedestal. (See Telecommunication Grounding Decal below.) The decal will notify the technician that the lateral shield is not bonded. The Telecommunications Association of Michigan provided a recommended procedure to local telephone companies for disconnection of the lateral shield bond, devised by a licensed telecommunications engineer.

4. While accessing pedestals serving livestock farms, the telephone company technician will verify the status of the lateral shield bonding. If the technician finds that the lateral bond has been disconnected, and no "Notice" decal is visible on the pedestal exterior, he/she will apply the "Notice" decal. The technician will also confirm that the disconnecting procedure/equipment has been done in accordance with item 3 above.

Telecommunications Grounding Decal



Notice !

Grounding is not bonded

This communications junction and the lateral sheath is not bonded to the customer facility grounding system. This measure has been taken to prevent a pathway for off site Neutral-to-Earth Voltage from occurring in the customer facility. Please ensure that the lateral sheath remains un-bonded. For questions, please consult with the local electrical utility:

Ph. _____, or your local telephone company:

Ph. _____

01/05 MAEC