

 Oakdale Electric Cooperative		Board Policy
Policy Name: Neutral to Earth Voltages		Policy No: 6.07
Last Reviewed/Revised: 07-27-2023		Page 1 of 1

I. STANDARD SERVICE

The Cooperative provides electric energy and service to its member-consumers utilizing a multi-grounded, current carrying neutral which is solidly connected to all grounds throughout the system, both primary and secondary. The use of a multi-grounded neutral enhances the safe operation of the distribution system by stabilizing voltage under normal, lightning and fault conditions.

The multi-grounded neutral carries current and will, therefore, have a voltage on it with respect to earth. This voltage is a normal system condition and can be measured on all primary and secondary neutral conductors. The level of voltage on the primary neutral will vary depending on its electrical characteristics, the surrounding soil resistivity and energy utilization of the member-consumer and other consumers along the line. The level of voltage on the member-consumer secondary neutral will vary depending upon the energy utilization of the member-consumer, the voltage on the primary neutral and the condition of the member-consumer's wiring, grounding and electrical equipment.

II. SERVICE REQUIREMENTS

Under ideal operating conditions, these neutral-to-earth differences are unnoticeable to humans. However, dairy cattle and other livestock are more sensitive to voltages between points where contact is made. The neutral-to-earth voltages, whether arising on the cooperative or the member-consumer's facilities cannot always be kept at a level necessary to assure they will not affect livestock.

Member consumers involved in dairy or other livestock operation should consider whether their service requirements are more stringent than the standard service with the inherent neutral-to-earth voltages. They are encouraged to construct their own facilities in ways that will satisfy their special requirements. If, however, the member consumer suspects the normal neutral-to-earth voltages are adversely affecting livestock, they shall have the responsibility to inform the Cooperative immediately.

III. NON-STANDARD SERVICE

If after investigation and consideration of other methods of reducing the neutral-to-earth voltage, the Cooperative upon request or otherwise, at its option may, using an appropriate isolating device to separate the primary and secondary neutrals at the service transformer on a temporary basis. During a temporary period of six months, the member-consumer and Cooperative will pursue other methods of reducing the neutral voltage to an acceptable level.

If after six months, the Cooperative is satisfied there are no satisfactory alternative means of reducing the neutral-to-earth voltage to an acceptable level, the Cooperative will at the request of customer provide for the permanent separation of the primary and secondary neutral at the transformer pole. The materials and devices used in providing the non-standard service of neutral separation will be owned and maintained by the Cooperative.

The consumer shall notify the cooperative immediately if he or she suspects the isolating device is not satisfactorily reducing the neutral-to-earth voltage. The consumer is responsible for detection and removal of any man-made bypass of the isolating device such as, but not limited to, connections to water pipes, fences, other utilities.

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