Neutral Isolation

- What is a neutral isolator?
- Typical configuration
- When would we isolate?
- Installation
- Types
- Testing
- Effects

What Is A Neutral Isolator?
Typical Configuration

Why Would We Isolate?
- 90 Days
- Isolation on Demand
Thank You!

Michael T. Haas, PE
Principal Engineer, Ag Services
Michael.Haas@We-Energies.com
Installation - Where do we put the ground rods?
Manufacturer specifications

2012 National Electrical Safety Code

Wisconsin State Legislature

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Other Grounding Ideas

2012 National Electrical Safety Code
Section D: Grounding Methods

1. Multi-grounded systems
   - The primary grounding conductor, or the secondary grounding conductor, shall be installed for 600 V.
   - For single-grounded systems, see Tables 5018, 5019, and 5020.

   - Section D: Grounding Methods

   3. Multi-grounded systems: Generating systems of multi-grounded systems shall not be guarded.
   - Where grounding is required, grounding conductors shall be protected by guards suitable for the exposure to which they may reasonably be subjected. The guards should extend for not less than 2.45 m (8 ft) above the ground or platform from which the grounding conductors are accessible to the public.
Installation (Continued)

- Review:
  - Separated Neutrals
  - Installed the Isolator
  - Properly Grounded
  - Check for bypasses
    - Phone
    - Cable TV
    - City Water

Types of Neutral Isolators

Ronk

Ronk Datasheet:
The BLOCKER has a very low impedance (less than 0.5 ohms) for a voltage level above 12 volts.
2012 National Electrical Safety Code

When Can We Isolate?

- **90 Days**
  1) Installed at utility’s own cost
  2) Not available under level of concern
  3) Safety, grounding, PN voltage
  4) No more than 90 days

- **Isolation on Demand**
  1) Isolation request form
  2) State inspection
  3) Pre/Post stray voltage test
  4) Only for stray voltage concerns
  5) Hold harmless agreement
  6) Utility owns isolator
Additional Thoughts With Isolation

Isolator Testing
- Isolation System

\[ V = I \times R \]

- Isolation System
- Isolator (Open)
Isolator Testing
- Isolation System
- Isolator (Open)
- Isolator (Closed)

Isolation Changes
- How does isolation affect the utility system?

Isolation Changes
- How does isolation affect the farm?
Isolation Changes
- Before Isolation

Before Isolation

Hot/Phase Wire

120V

110V

0V

Neutral Wire

Isolation Changes
- Before Isolation

Before Isolation

Hot/Phase Wire

120V

115V

(110V)

0V

5V

Triplex Neutral

Isolation Changes
- How does isolation affect the farm?

(On-Farm Source)
Isolation Changes

How does isolation affect the farm?

“Isolation gets rid of the utility contribution”

Michael T. Haas, PE
Principal Engineer, Ag Services
Michael.Haas@We-Energies.com

Thank You!