Electrical Grounding Safety & Energy Efficiency Potential for Irrigation

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Michigan Center Pivot Irrigation Systems

Michigan Ag. Electrical Energy Stress

High-Pressure Sprinklers

Low-Pressure Sprinklers

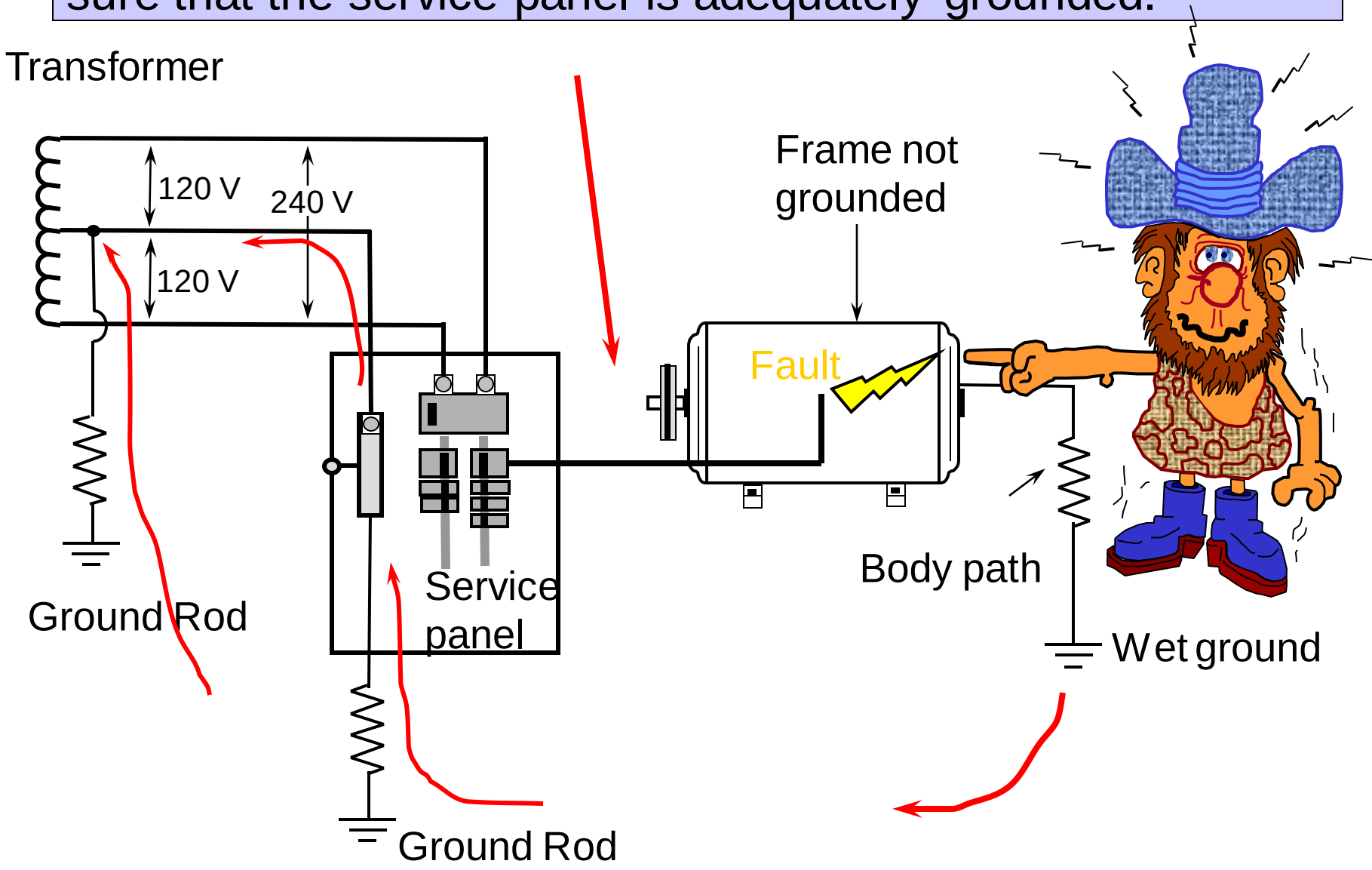
Electric Power to Operate Irrigation Motors

R.D. Schnieder, Nebraska Extension
EC 77-719

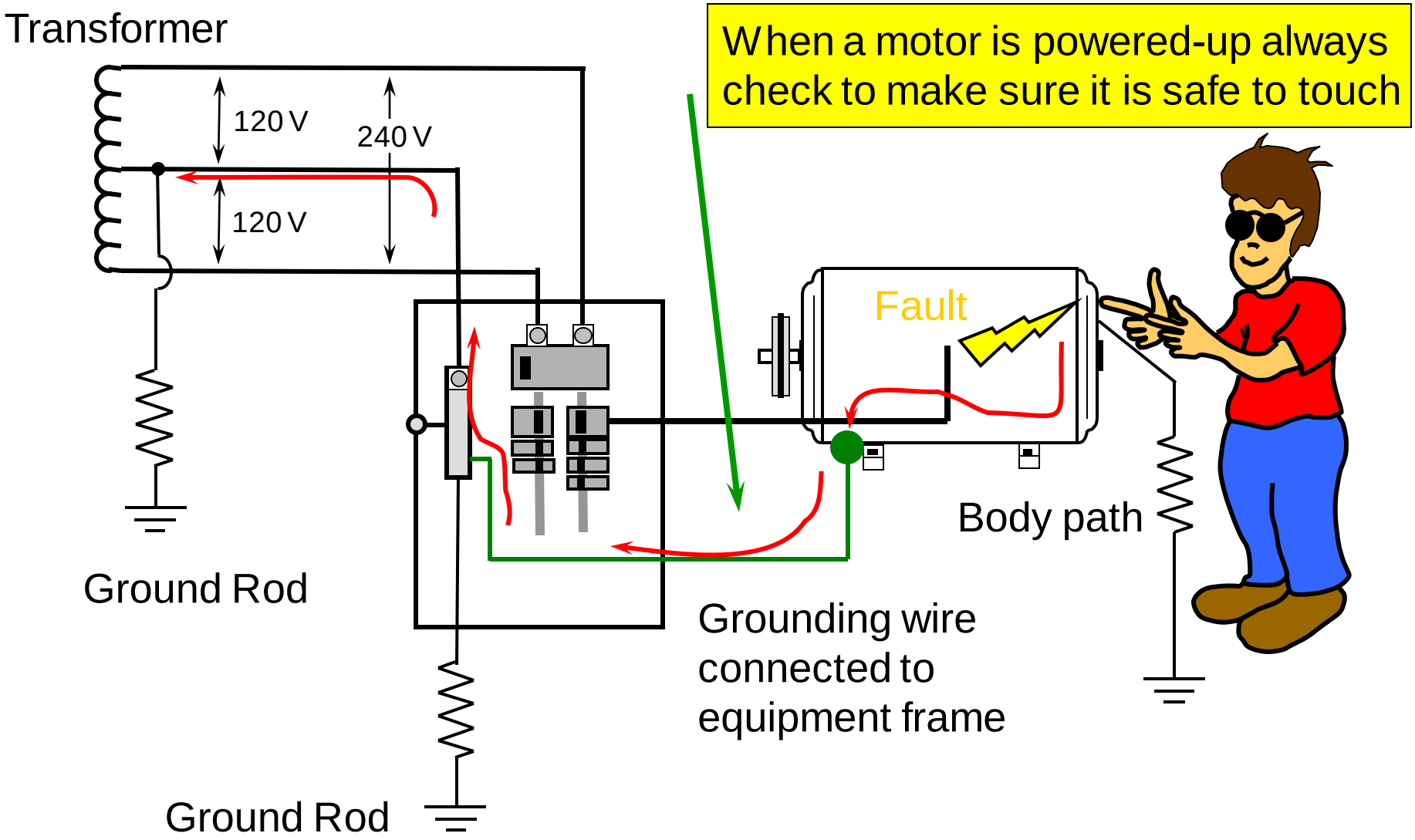
All about proper grounding & having certified electricians install your system

Safety at the Water Pumping Station

Irrigation motors or systems not connected to the service panel ground rods can result in a shocking experience. Be sure that the service panel is adequately grounded.

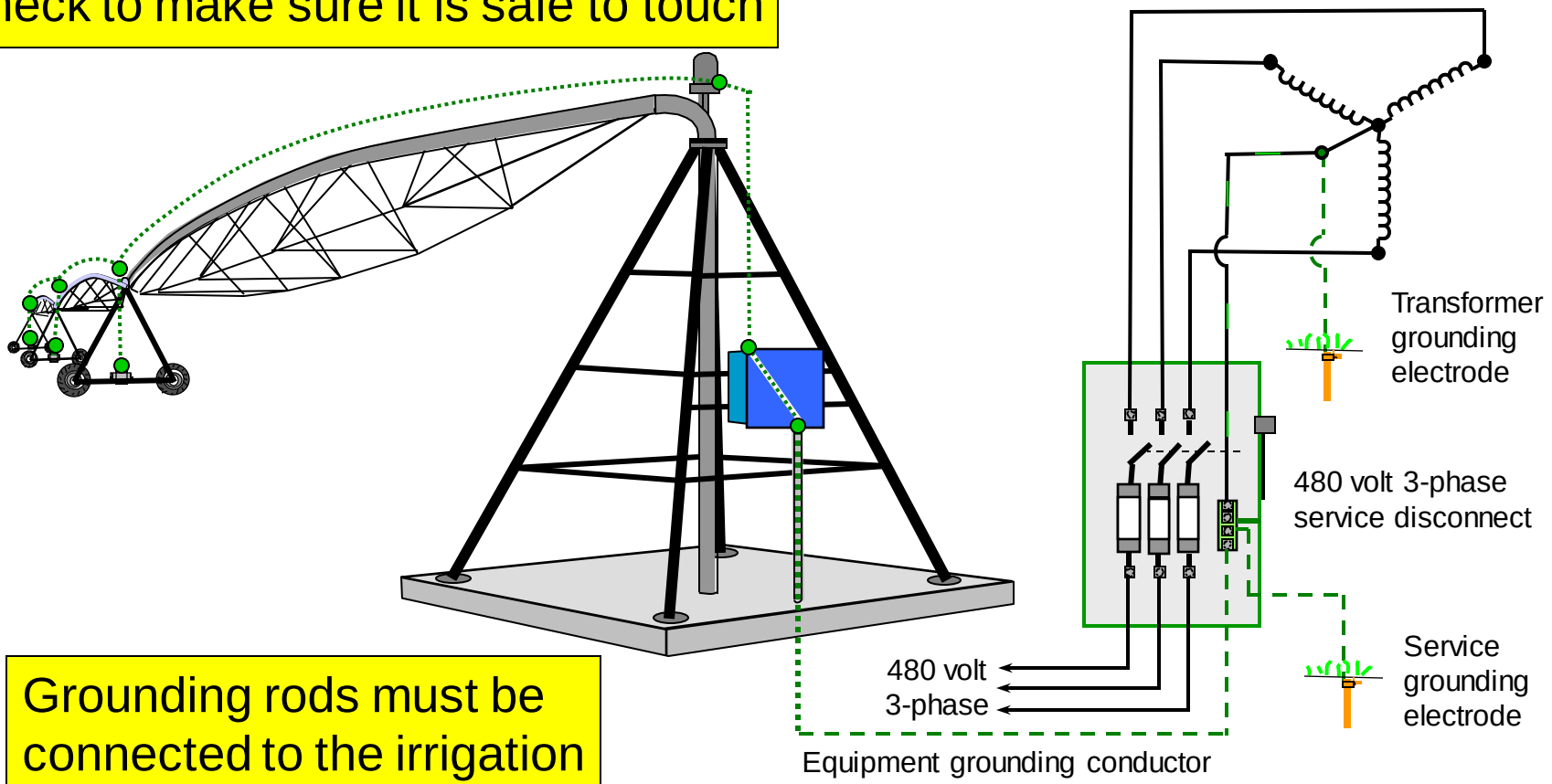


Irrigation motors or systems connected to the service panel ground rods prevents a person from receiving a shock.



Safety at the Center Pivot

When a pivot is powered-up always check to make sure it is safe to touch

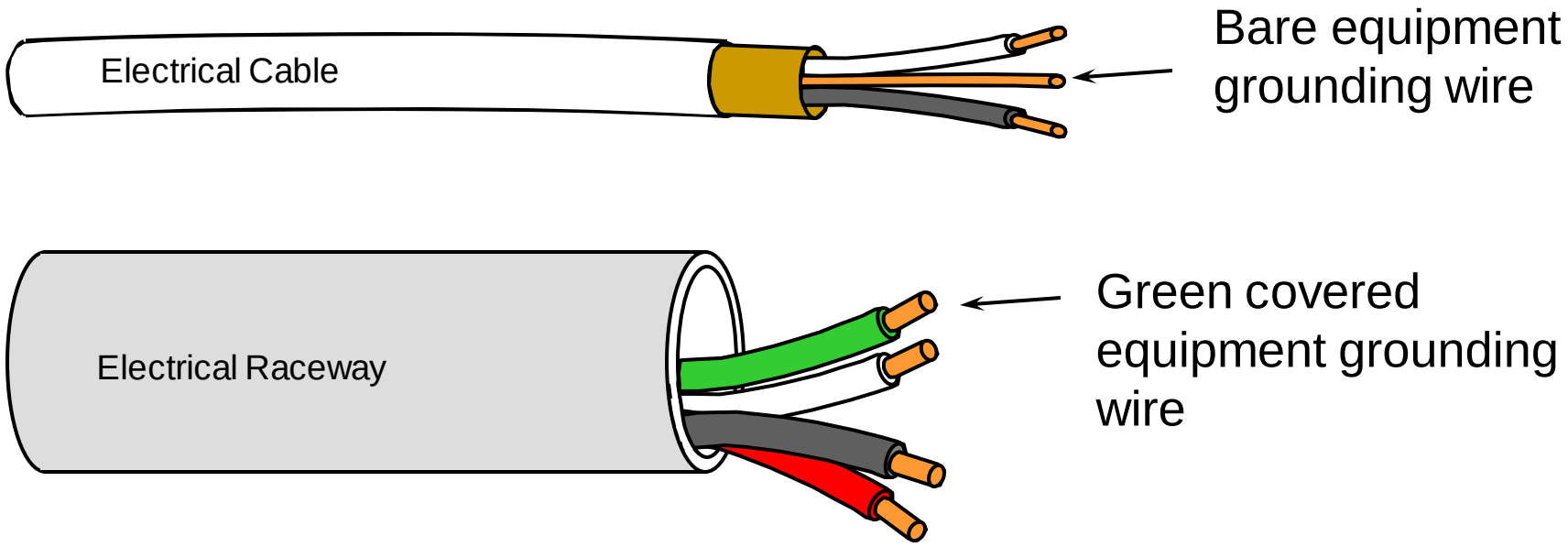


Grounding rods must be connected to the irrigation System electrical system

Recommend 3-4 8 feet connected ground rods 10 feet apart.

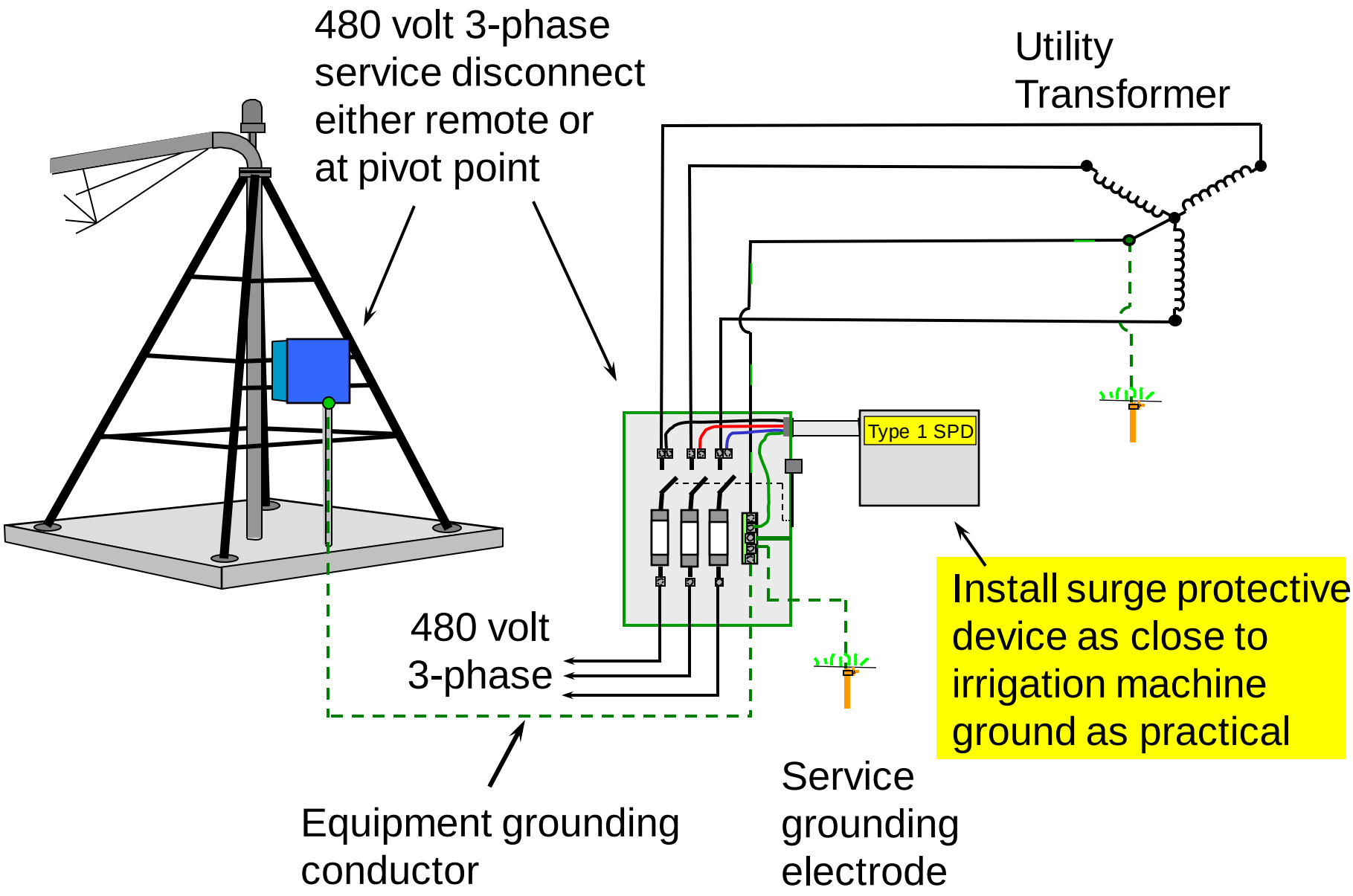
Equipment grounding wire must be run with circuit wires to all electrical loads

Equipment grounding wire must be either bare or with green insulation or green covering



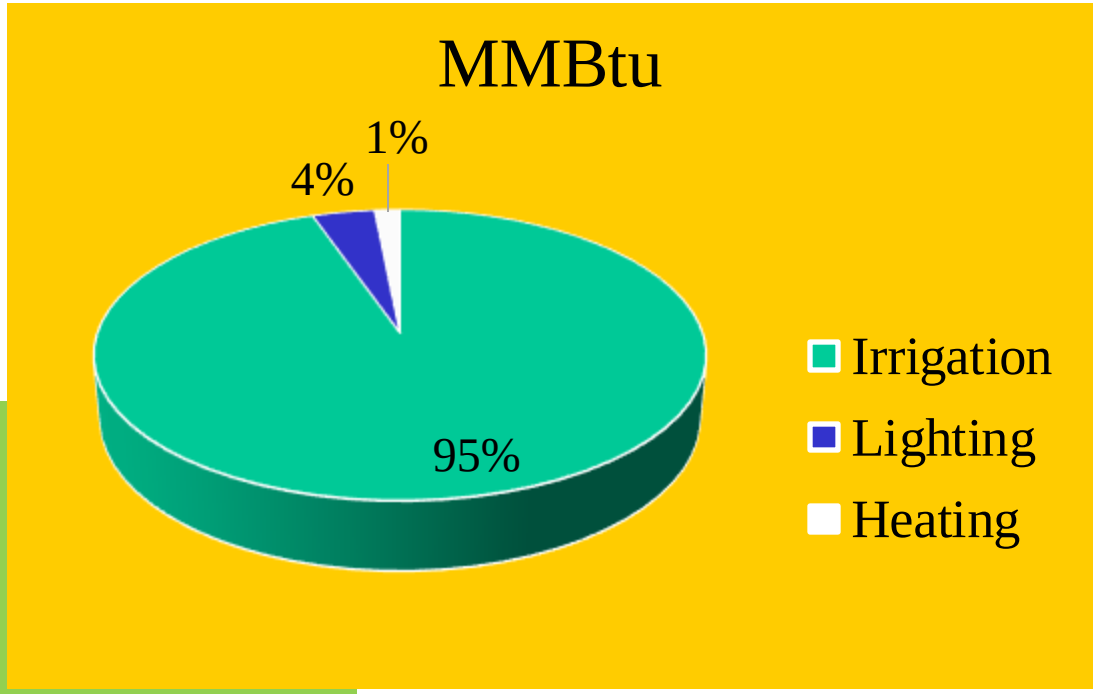
Lightning Protection

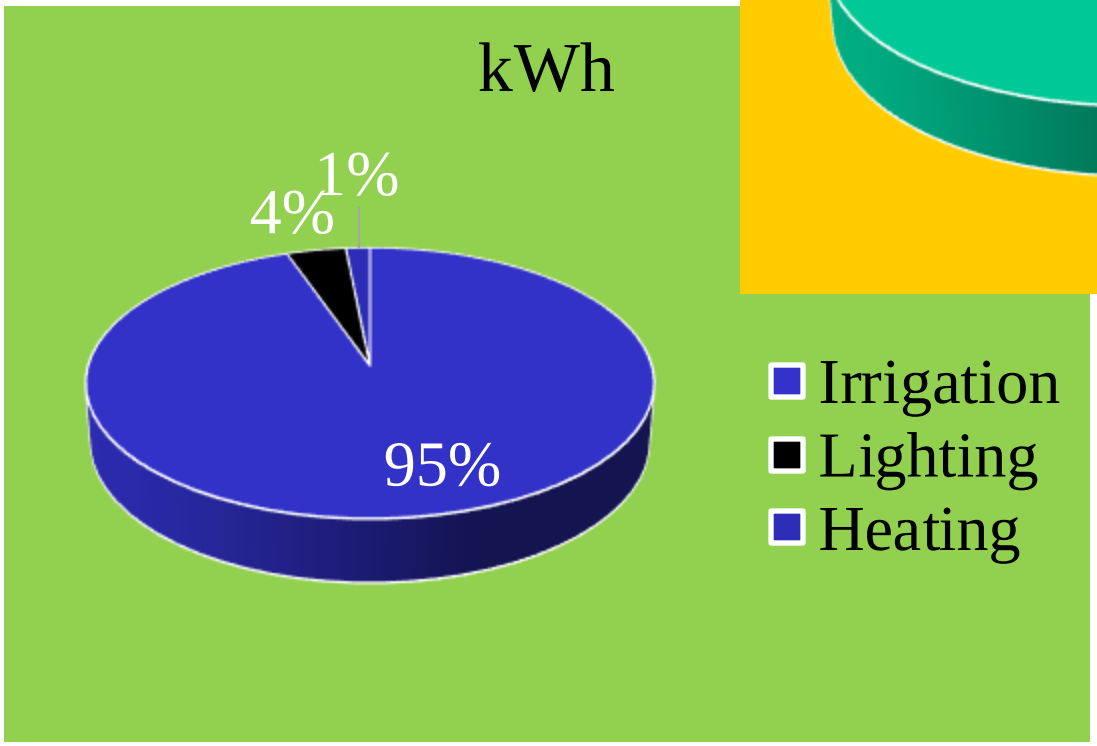
Lightning Surge Protection (SPD type 1)



Energy Efficiency in Irrigation

Irrigation Energy Use Breakdown





Energy Efficiency in Center Pivot Irrigation Systems

Number of Farm Operations: 20

Potential Annual Average Savings: $21,737

Potential Annual Energy Savings: 238,866 kWh

Average Electrical Rate: $0.11 per kWh

Average Implementation Cost: $82,184

Average % Energy Savings: 53%

Average Payback on Investment: 3.8 years

Average Internal Rate of Return (15 years): 25.6%

For an energy audit, contact:
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