**Pump Motor Maintenance and Protection**

**Compiled by Don Lancaster, Farm Advisor Emeritus**

Most growers in Modoc County rely on season long irrigation to maximize crop production and economic returns. Irrigation system failures can be devastating and tremendously expensive. The following are some helpful tips from Lynn Culp - Member Service Manager for Surprise Valley Electrification Corporation.

*Lynn Culp can be reached at (530) 233-3511 if you have any questions.*

**PUMP PANEL MAINTENANCE**

**Tighten Connections**

*Loose connections in the pump panel can cause low voltage and overheating resulting in equipment damage. Be sure that the power is disconnected before tightening all connections in the panel!*

**Seal the Panel**

*Moisture, dust, yellow jackets, and mice nests all cause problems for electrical connections. Be sure to seal all open knockouts and holes. Lightly blow out or vacuum dust and debris from the panel.*

**Refasten Loose Panels**

*Panels that are falling off poles or are loose should be re-attached using lags or screws. Be sure to seal all holes.*

**Exclude Livestock**

*Protect your investment by installing fences or livestock panels to keep cattle from rubbing against and breaking equipment.*

**Install Properly Sized Capacitors**

*Capacitors improve the power factor for systems with 20 horse power or larger motors.*

**POWER PROTECTION EQUIPMENT**

**Three Phase Voltage Monitor/Motor Protector**

*The most common incidents that cause single phase conditions are: Bird nests on pole tops; Tree limbs in power lines; and Bird or animal contacts with power lines. A* **three phase voltage monitor/motor protector** *protects against single phase conditions or phase loss; will not allow the motor to start if a single phase condition is present; and protects against phase reversal, under voltage, and unbalanced voltage.*

**Meter Socket Surge Protector**

*These surge protectors are available for purchase by SVE customers for single phase motor and residential protection.*

**Lightning Protection**

*Make sure that all systems are properly grounded, and install secondary lightning arrestors on power panels and center pivots.*

**Time Delay Restart**

*Turbine motors that could back spin should have a time delay restart. This device is also good for automatic restart after power bumps.*

**Proper Overload Protection**

*The safety factor for most pump motors is generally 15% above motor brake horsepower. Overloads sized higher can allow motor amperage to run high in an overload condition. This could burn up the motor windings.*

**Provide Shade for Pump Motors**

*A simple shade that keeps direct sunlight off motors and provides open sides for good air flow can prolong pump motor life and efficiency.*