

IRRIGATION SERVICE

RULE NO. 23

1. WELL PERMITS:

Before receiving electric service for irrigation pumping, the consumer must possess a well permit from the State Engineer.

2. CONTRACTS:

None.

3. WELL CONSTRUCTION & TESTING:

Consumers will be encouraged to follow a complete well construction, development and testing procedures. The test will provide necessary data on well characteristics, and pumping lift for design of efficient pumping equipment. Furthermore, the consumer or applicant may provide a Specific Well Capacity Test Report, in order to insure adequate power requirements, and to determine proper motor, transformer, switching equipment, and conductor sizes.

4. MOTOR & VOLTAGE REQUIREMENTS (SECONDARY SERVICE):

a. Motor:

Pump motors 10 horsepower and above will be served three phase if available or at the Cooperative's discretion, a phase converter owned and maintained by the consumer may be allowed.

b. Voltage Requirements:

Motors of less than 10 horsepower may be served 120/240 volts, single phase. Three phase motors from 10 horsepower up to and including 25 horsepower will be served at 240 or 277/480 volts, and motors above 25 horsepower will only be served at 277/480 volts.

EFFECTIVE DATE: ~~February 14~~ April 10, 2012

ISSUED BY: _____
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5. SAFETY REQUIREMENTS:

a. Wiring:

Wiring for the secondary service will comply with the National Electrical Code and grounding will be in accordance with National Electric Safety Code or Regulatory Authority specifications.

b. Metering:

All services shall have an interruptible disconnect at the metering site. Consumers with combined irrigation loads ([as determined by adding the total of all hp name plate ratings on pumps, boosters, etc.](#)) which are greater than 75 hp and on one watt-hour meter shall be required to install a CT cabinet and a 13 terminal meter base with appropriately sized interruptible disconnects.

c. Lightning Protection:

Lightning protection for transformer banks and meter poles will be provided by the Cooperative. Lightning protection beyond the meter is recommended and must be provided by the consumer.

d. Motor Protection:

1. Certain protective devices considered necessary by the Cooperative, which shall be supplied and installed by the consumer, for adequate motor protection are recommended hereunder:

a. Line Starting Protection: Any motor which, in starting, might be damaged by the full line voltage requires some type of protective device to disconnect it from the line during interruptions in service, thus protecting the motor when service is restored. The Cooperative further recommends that such a device be equipped with a time delay mechanism so that the motor will not attempt to restart during system interruptions.

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- b. Overload Protection: Since the intense heat caused by overload might seriously damage the motor, Consumer should install a device that will disconnect the motor if overload occurs. Fuses, thermal relays or circuit breakers which are specifically designed to operate when excessive current occurs, are the devices used for this purpose. Where Consumer receives three phase service, the Cooperative requires that such protective devices be connected in all phases.

- c. Single Phasing Protection: Where Consumer receives three phase service, a relay should be installed which will disconnect the motor from the lines in the event one phase of the line becomes open.

- d. Reverse Phasing Protection: For three phase installations of electric cranes, hoists, elevators, pumps and the like, Consumer should install relays which will disconnect the motor from the line in the event of accidental phase-reversal.

6. SECONDARY CAPACITORS:

The consumer must provide a secondary capacitor for each irrigation pumping installation of 35 horsepower or above in accordance with the following:

Horsepower:	Capacitor 3Ø KVAR Rating:*
35	5
40	10
50	15
60	15
75	20
100	25
125	30
150	45

*or as recommended by the motor manufacturer

7. AUXILIARY EQUIPMENT:

- a. Reduced Voltage & Across the Line Starting Equipment:

Reduced voltage starting equipment for pumps normally will not be required nor is it recommended. Loads of 150 horsepower or more will require special consideration at the option of the Cooperative.

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b. Use of Labor Saving & Convenience Devices:

Consumers will be encouraged to employ such labor saving and convenience electronic devices as automatic reset or starting and stopping equipment for pumping plants. Where applicable, non-reserve ratchet type, or equivalent, pump heads should be used. Use of time delay starting equipment is encouraged. The Cooperative shall retain the option of determining the time delay in order to avoid simultaneous starting of numerous pumps, and the consumer may be required to provide the time delay starting equipment.

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