

# Advanced Irrigation Efficiency

Wednesday, March 25, 2009

Sponsored by Wheat Belt Public Power District  
Class at Buffalo Point Restaurant (next to Cabela's)  
Sidney, NE 69162

8:30 a.m. to 4:30 p.m.

Because motors and irrigation systems are a vital part of any farm and ranch operation, all employees must have a working knowledge of their use in the most energy and water-efficient manner. This course will expand your knowledge of how systems work together, parts of the pump and their functions, what types are most commonly used, what factors affect efficiency, how to estimate monthly energy use and how to select the most cost-effective irrigation system. You will also receive instruction on controls and their energy implications, motor protection and learn the best circumstances for employing variable speed drives.

*This course is designed for electric power suppliers and their customers.*

Key account managers, customer service staff, operations personnel, farmers, irrigation suppliers, water, sanitation operators, well drillers, banking personnel, USDA employees and electricians will all find value in this training event. This program will offer an unbiased discussion of fundamentals, with emphasis on practical "real world" applications. The course information will be presented in an easily understood format to accommodate all knowledge levels. Experienced personnel will be able to expand their knowledge and sharpen their skills. New employees, or those with little irrigation experience, will also gain essential information. A manual of valuable reference materials will be provided to each course attendee.



**Class is free**  
Includes materials and lunch

## Sponsors:



## Location

638 Cabela Dr, Sidney, NE

(Building is located across the parking lot and lake from Cabela's)



## To register

Contact Wheat Belt PPD

1-800-261-7114

pamw@wheatbelt.com

Registration Deadline:

March 19, 2009

**Register early — space is limited**

# Advanced Irrigation Energy Course Outline and Agenda

**8:30 a.m. - Noon**

## Introduction and course overview:

- Sponsor and instructor introduction
- Agenda review — how this knowledge can help you
- Why irrigation efficiency will continue to be a key issue

## Review of irrigation system types and key factors:

- Types of gravity irrigation systems — advantages and limitations
- Types of sprinkler systems; advantages and limitations
- Energy implications of each irrigation system

## Understanding the pump and keeping it efficient:

- Parts of the pump and their function
- Ways to lose efficiency, and remedies for each
- Case study examples of efficiency improvements for pumps

## Refreshment break

## Main choices for powering pumps:

- I. Electricity and motors
  - A. Evaluating all the issues (energy cost, controllability, maintenance, etc.);
- II. Fossil fuels (diesel and propane) and engines
  - A. Evaluating all the issues (fuel cost, controllability, maintenance, etc.)

**Noon - 1 p.m. - LUNCH PROVIDED**

## What it takes to modify existing systems:

- Getting a pump test; understanding and using the results
- Low-cost changes and upgrades
- Higher-cost investments; converting to a low-pressure system

## Examples to show savings potential:

- A typical system upgrade for this geographic location
- Considering a conversion to drip irrigation

## Refreshment break

## Standard and emerging irrigation control systems:

- Reviewing the “non-technical methods” to monitor irrigation
- Energy implications of greater control methods
- Available alternatives for greater irrigation control
- Costs and economics

## Review of key points:

- The essential topics to remember
- Final questions and input from participants

**4:30 p.m. - End-of-day wrap-up and adjourn**

*This course developed by the*



## Instructor and class developer

Mr. Leon New recently retired with over 38 years of service to farmers through the Texas A&M Research and Extension program. Throughout his career, Leon has worked with county extension agents and their farmer/rancher clients to conduct results-oriented demonstrations of efficient irrigation systems. This includes LEPA irrigation (Low Energy Precision Application), chemigation systems, and other irrigation methods.

Leon is also co-developer of the North Plains Weather Station Network for irrigation scheduling and management, which has operated since 1995. He has developed computer software for orifice-nozzeling for center-pivot and linear irrigation units, which is used to design demonstrations and provide technical data to dealers and growers.

New is a registered professional engineer in the state of Texas. He is also a National Irrigation Association certified designer for drip/micro, sprinkler and furrow systems.

## Sidney hotels

Holiday Inn  
664 Chase Blvd, Sidney  
(308) 254-2000

Americinn  
645 Cabela Dr., Sidney  
(308) 254-1300

Days Inn  
3042 Silverberg Dr., Sidney  
(308) 254-2121

Comfort Inn Sidney  
730 E. Jennifer Ln., Sidney  
(308) 254-5011

Best Value Inn & Suites  
2115 Illinois St., Sidney  
(308) 254-5262