



CONSERVATION ENHANCEMENT ACTIVITY

E374144Z1

**CONSERVATION
STEWARDSHIP
PROGRAM**

Install variable frequency drive(s) on pump(s)

Conservation Practice 374: Farmstead Energy Improvement

**APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture;
Associated Ag Land; Farmstead**

RESOURCE CONCERN ADDRESSED: Inefficient Energy Use

PRACTICE LIFE SPAN: 10 years

Enhancement Description

Install Variable Frequency Drives (s) (CPS 533 Pumping Plant) with correct sensors on all pumps indicated in the energy audit.

Criteria

- Where required, certify the replacement or retrofit system and related components or devices meet or exceed currently applicable Federal, State, and local standards and guidelines.
- Inform the electric power provider that a Variable Frequency Drive will be installed prior to installation and be responsible for following requirements of the electric power provider.
- Written specifications describing site specific details of installation, including:
- Design flow rate, range of operation heads, and pump type shall meet the requirements of the application.
- Identify and describe replacement or retrofit system and/or related components or devices.



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- Document system energy usage and resulting potential energy savings from the implementation of this enhancement.
- Plan view showing the location of the measures in relation to other structures or natural features, where appropriate.
- Detail drawings of measures and appurtenances, such as piping, inlet and outlet connections, mounting, foundations, and other structural components, where appropriate.
- Control panel shall provide a read out display of flow rate or pressure.
- Unit shall be protected from overheating.
- Electrical wiring shall meet the requirements of the National Electrical Code.
- Power unit(s) shall match pump requirements and be capable of operating efficiency and effectively within the planned range of conditions.
- Power unit(s) shall be sized to meet horsepower requirements of pump, including efficiency, service factor, and environmental conditions.
- Note: 1 horsepower (hp) = 0.75 kilowatts (kW)
- Pump power unit(s) shall be selected based on the availability and cost of power, operating conditions, need of automation and other site specific objectives.
- Operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and safety requirements.

Documentation Requirements

- Where appropriate, complete Farmstead Energy Improvement (CPS 374) or Pumping Plant (CPS 533) documents per the Plans and Specifications for the planned purpose.
- Operation and Maintenance plan specific to each fuel source, including;
 - Proper shut down and startup procedures.



- Inspection and testing of all components including automated controls to assure proper functioning as designed.
- How to protect the unit from overheating.
- Procedure on how to test and inspect.

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