



Conservation Enhancement Activity

E374A

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: Energy

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description

Install Variable Frequency Drive(s) (VFD) on Pumping Plant (Conservation Practice Standard CPS 533) with the correct sensors, on all pumps as indicated in the energy audit.

Criteria

- Implement recommendations for components of a current Type 2 energy audit performed in accordance with the American Society of Agricultural and Biological Engineers (ASABE) Standard S612, Performing On-farm Energy Audits.
- Where required, certify that the replacement or retrofit system and related components or devices meet or exceed currently applicable federal, state, and local standards and guidelines.
- Components of major activities by farm enterprises defined in ASABE S612 will meet the appropriate NRCS or industry standard, such as:
 - NRCS Conservation Practice Standard Farmstead Energy Improvements (Code 374)
 - NRCS Conservation Practice Standard Pumping Plant (Code 533)
 - NRCS Conservation Practice Standard Combustion System Improvement (Code 372)

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- Include written specifications describing the following site-specific details of installation:
 - The replacement or retrofit system and/or related components or devices.
 - Baseline system energy usage and 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.
 - Electrical wiring must meet the requirements of the National Electrical Code.
 - Operation and maintenance plan will be developed that is consistent with the purpose(s) of this practice, its intended life, and safety requirements.



CONSERVATION STEWARDSHIP PROGRAM

Documentation and Implementation Requirements

Participant will:

- Prior to implementation, review current Type 2 energy audit, season of use, existing pump motor needs, and current operation.
- Prior to implementation, evaluate site specific energy alternatives and net benefit of the Variable Frequency Drive(s).
- Prior to implementation, ensure that energy utility provider has reviewed and approved location of installation on pump motor, including needs for electrical harmonic filter.
- Prior to implementation, obtain written documentation of utility approval for site with requirements for installation.
- During implementation, ensure installation meets federal National Electrical Code and any local or state codes.
- After implementation, provide documentation of installation including first season energy use for comparison to prior years (from energy audit) to NRCS for review to verify implementation of the enhancement.
- After implementation, monitor and maintain system for life time of the practice (10 years).

NRCS will:

- Prior to implementation and as needed, NRCS will provide technical assistance.
- Prior to implementation, provide and explain NRCS Conservation Practice Standards Farmstead Energy Improvements (Code 374), Pumping Plant (Code 533), and Combustion System Improvement (Code 372) as it relates to implementing this enhancement.
- Prior to implementation, review with producer the costs and benefits for installation of Variable Frequency Drive(s).
- Prior to implementation, develop written specifications describing site specific details of installation, including:
 - The replacement or retrofit system and/or related components or devices.
 - System energy usage and resulting potential energy savings from the implementation of this enhancement.



- Prior to implementation, develop, provide, and explain to the participant the operation and maintenance plan for this enhancement.
- After implementation, verify installation meets NRCS enhancement criteria.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date