

FARMSTEAD ENERGY IMPROVEMENT

(All Enterprises except Maple Syrup and Nursery /Greenhouse)

INSTRUCTIONS FOR USE OF SPECIFICATION

(374)

1. APPLICABILITY

This Construction Specification 374 is applicable for installation of all types of energy improvements contracted under the Energy Improvement Standard 374 for all enterprises except Greenhouse and Maple syrup. These are covered by separate specifications. This specification includes, but not limited to: CFL bulbs, LED bulbs, linear fluorescent, Pulse Start Metal Halide(PSMH), ventilation exhaust fans, plate cooler, scroll compressor, variable speed drive (VSD), automatic controller system, motor upgrades, radiant heaters, building envelope - attic and wall insulation , attic heating recovery vents, building envelope – sealant, grain dryer, and tunnel door. In order for these to be eligible the following must have been completed:

- Energy audit provided by a TSP. Non-TSP audits require a PE and must be approved by the State Conservation Engineer or designee.
- All Energy audits require a functional review by the field office using the CAP review checklist for the current program year. This review verifies it is complete and the findings properly presented and detailed enough for contract development. Audit writer to address any issues prior to final approval.
- Changes to audit recommendations must be obtained in writing by the landowner from the audit writer prior to implementation.
- Drawings and specifications must be approved by appropriate NRCS staff prior to any installation of contracted energy improvements.
- On more complex installations the qualified professional will provide additional details and product information for verification and “As-built”.

2. SELECTION CONSIDERATIONS

Listed below are some considerations when using certain applications.

Radiant Heaters (Radiant Tubes)

Poultry Houses

The installed radiant heating must meet the integrator’s requirements for capacity. Often, an integrator has two specifications: one for the brood end, and another for the non-brood end (or the house as a whole). If the integrator’s requirements cannot be obtained, then the installed capacity must meet the recommendations of the energy audit.

Radiant heaters should generally be radiant tubes, “radiant quads”, or radiant brooders; however, other types of radiant heaters may be appropriate for other types of agricultural buildings. The radiant heating capacity requirements for other types of agricultural buildings must meet an integrator’s requirements, if applicable, or the recommendations of the energy audit. However, the installed capacity must be consistent with the norms for the type of agricultural building.

The owner needs to be informed that this type of system may pose a greater fire risk, especially for older facilities and the type of litter used.

Motor Upgrades (Electric)

This is typically required when adding a VSD to a vacuum pump. The existing single phase motor must be replaced with a three phase motor.

All classes and horsepower of motors which have a defined NEMA Premium standard must meet the efficiency for NEMA Premium. See the

NEH650-20 Energy supplement for more information.

3. ITEMS TO BE INCLUDED IN SECTION 6 AND/OR DRAWINGS

- A. Cover Sheet
 - a. Landowner Name
 - b. Inspector sign off block
 - c. Address of project
 - d. NRCS design approval block
 - e. Note Landowner to obtain all Federal, State, and Local permits.
- A. Drawing or sketch
 - a. Location where practices to be installed
 - b. Description of practice to be installed as per Energy Audit.
 - c. Specifics for each practice as listed below for those applicable to this project.
 - i. LED bulb wattage, with/without dimmable, and number
 - ii. CFL bulb wattage, with/without dimmable and number
 - iii. Type of Linear Fluorescent and number and with/without fixture or equal or better.
 - iv. PSMH wattage and ballast number w/ fixture
 - v. Radiant heater type and specification for different growing areas
 - vi. Ventilation fan motor size and efficiency and/or cfm rating
 - vii. Plate cooler gpm and one or two stage.
 - viii. Size of compressor
 - ix. Variable Speed Drive for what equipment and Hp
 - x. Details of automatic control system
 - xi. Hp of motor to be upgraded, phase, and on what equipment
 - xii. R value for ceiling insulation, depth and SF.
 - xiii. R value for wall insulation and SF.
 - xiv. Number, location and size of attic inlets
 - xv. Specific location for joint sealing and estimated length
 - xvi. Bushels per hour capacity of the dryer
 - xvii. Location of tunnel door and area in SF.
- B. Certification Sheet including a statement by the qualified professional similar too:
 - a. *I have replaced or installed xx items for landowner. Work was completed on date. The items have been installed in accordance with the manufacturer's recommendations and local building code.*
 - b. *Include signature and date.*
 - c. Each shall be customized for each project.
- C. Pa One Call notification if any digging is required for work.