EMERLING FARMS – PERRY, NY

SYSTEM DESIGN

Reducing electricity costs was the primary reason for constructing an anaerobic digester at Emerling Farm. Since installing the digester, owners have experienced fewer electrical expenses related to fan loads and have generated revenue from sales of excess electricity.

The digester processes 48,000 gallons of waste each day. Manure and used bedding is either scraped or pumped into a gravity flow system that leads to the anaerobic digester influent pit. Wastes in the pit are mixed on a timed schedule using an impeller agitator before being pumped into the plug flow digester.

Biogas is used to fire an engine-generator set and excess gas is flared. The farm utilizes power generated on site and sells the remainder to a local electric company.

Additional information is available in a Cornell University case study.

PROJECT BENEFITS

- Odor and pathogen reduction
- Reduced electricity costs
- Revenue from excess energy sales
- Conversion of nutrients from organic to inorganic form to use as a natural fertilizer

Digester effluent is transferred to a screw-press separator. Separated liquid manure is stored and recycled for land application. Solid manure effluent is used for freestall bedding at the facility.

Photo: Cornell University

- **Population Feeding Digester:** 1,100
- **Baseline System:** Storage Lagoon
- **Digester Type:** Horizontal Plug Flow
- **System Designer:** RCM International, LLC
- **Biogas Generation:** 110,400 ft^3/day
- **Biogas Use:** Cogeneration
- **Generating Capacity:** 230 kW
- **Receiving Utility:** New York State Electric & Gas
- **Project Funding:** USDA