

Lift Station Electrical Design Considerations

University of Wisconsin - Madison

2001 Seminar

*Designing Waste Water
Pumping Systems and Lift Stations*



Forster Electrical Engineering, Inc.

550 N. Burr Oak Ave, Oregon, WI 53575

(608) 835-9009

(608) 835-9039 fax

Power Source

Single Phase or Three Phase?

240 volts or 480 volts?

Phase Converter?

L-C type

Motor-generator

Solid state inverter

Notes:

Backup Power

Alternate Sources

Different substations?

Generator

Fuel System

Natural gas

Diesel

Notes:

Pump Drives

Multi-horsepower systems

Equal horsepower - constant speed

Mechanical speed adjustable

Eddy clutch

Electrical variable speed

 Six step - voltage source

 Six step - constant current

 PWM transistor

Notes:

Generators and VFD's

Isolation Transformers and Line Reactors

Notes:

Control Systems

Floats

Bubbler

Conductive probe

LVDT

Ultrasonic

Notes:

Hazardous Area

NFPA-820

Class 1 Division 1

Motors

Switches and arcing devices

Class 1 Division 2

Motors

Switches and arcing devices

Notes: