

# *Lift Station Electrical Design Considerations*

*University of Wisconsin - Madison*

*2001 Seminar*

*Designing Waste Water  
Pumping Systems and Lift Stations*



***Forster Electrical Engineering, Inc.***

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# 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: