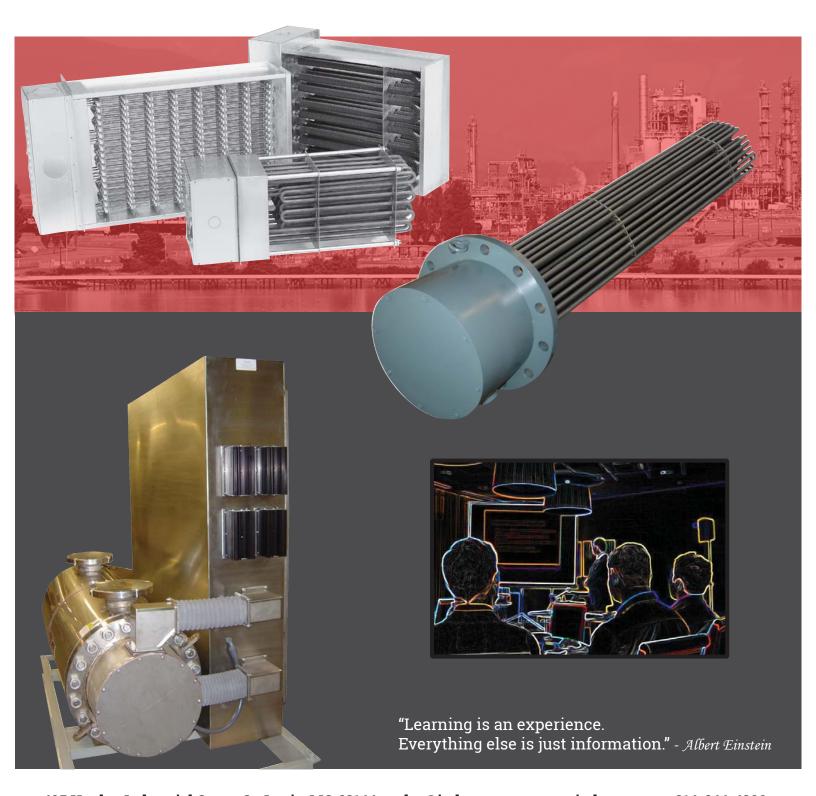


# LUNCH LEARN





# LEARN

60 min

60 min

30 min

50 min

50 min

# General

#### 1-A Electric Heat for Industrial Processes

Introduction to types of heaters, thermal design, applications, basic tips and troubleshooting.

#### **Application Overviews** 1-B

A deeper dive into common electric heat applications. This presentation can be tailored to specific applications upon request.

#### 1-C Protecting Terminal End Seals from Overheating

Advise on selecting the best terminal end seals for air and liquid applications, focuses on balancing moisture resistance with cost and temperature limits. Includes a discussion of the impact of insulation, cold sections and stand offs on terminal temperatures.

#### 1-D Maximizing Heater Life

Tips on prolonging heater life through regular maintenance, and starting your heater after long periods of inactivity or storage.

#### 1-E Calculating kW for various applications 30 min

#### 1-F **Using the Corrosion Guide for Watt** 50 min **Density & Material Selection**

#### 1-G Basic Heater Troubleshooting Techniques 50 min

#### 1-H Considerations for Explosion Resistant 50 min **Heater Applications**

#### **Process Air Heaters**

# 2-A High Temperature Gas Heating

Selecting the best construction type (tubular, finned tubular, open coil) and control options for various applications.

#### **Impedance**

#### 3-A Understanding Impedance pipeline heating 50 min

A discussion of the benefits and advantages of impedance heating, touching on some of the common applications.

#### **Elements**

#### 4-A Introduction to Electric Heating Elements 30 min

Overview of the 3 primary types of elements (tubular, finned tubular, open coil) used in industrial applications, and how to select the best solution for your application.

# **Circulation Heaters**

# Minimizing the Cost of Your Circulation Heater 30 min

Balancing watt density vs. life expectancy, the role of baffles in a circulation heater system, material selection, and cost impact of these decisions.

#### **Testing and Agency Approvals**

30 min

Presentation on Non-Destructive Testing (NDT), Positive Material Identification and ASME certification.

### 5-C Seismic and Wind Load Calculations

30 min

30 min

A brief introduction to design considerations.

#### **Immersion Heaters**

6-A Freeze Protecting Water Tanks

**Maintaining Oil Tank Temperatures** 30 min

6-C NEMA 7 Tank Heating 30 min

# Controlling Electric Heaters

#### 7-A Electric Heater Control Options

60 min

Introduction to control systems for electric heat including SCR, Vernier and basic on/off controls.

#### 7-B Thermocouple Fundamentals

30 min

Examination of the standard types of thermocouples and selection criteria.

