

Flare Training Agenda

Classroom Sessions:

Monday, June 1

Welcome/Introduction by Dan DeArment, VP LFG Specialties (1:00-1:15)

Gas Collection System Overview (1:15 – 2:00)

Presented by Lawrence Derr, Applications Engineer

- Utility Flare Operation
- Enclosed Flare Operation
 - T/C selection (auto, manual)
 - Temp variations
 - Explanation of autotune (demo in workstation #4)
 - Purge blower
- Blower sizing

Controls (2:15 – 3:30)

Presented by George Morgan, Electrical Engineer

- Flare Operation
- Combustion Monitoring
- Automatic Restart after Fault
- Off-Skid Gas Delivery
- Operator Display Review
- Advanced Features of the Control System

Flow Meters (3:45 – 4:30)

Presented by Louis Kalani, Product Manager

- Types of Flow Measurement
 - Thermal Dispersion
 - Annubar
 - Orifice Plate
- Flow Verification
- Troubleshooting

Beneficial Use of Landfill Gas (4:30 - 5:00 pm)

Presented by Robert Johnston, Sales Manager and Russ Keckler, E-Vap Product Manager

- Off-Skid Gas Delivery/Utilization Equipment
- Compressors
- Condensate injection
- Leachate E-Vaps

Workstation Schedule

Tuesday, June 2

Station #1: Operation and Maintenance (1 hour, 45 minutes)

Station #2: Motor Control Equipment (1 hour, 45 minutes)

Station #3: Recording, Instrumentation & Annunciation (1 hour, 45 minutes)

Station #4: Control Panels (1 hour, 45 minutes)

	Station #1	Station #2	Station #3	Station #4	Lunch	Tour
Group A	8:00-9:45 am	10:00-11:45 am	1:00-2:45 pm	3:00-4:45 pm	12:00-1:00 pm	4:45 pm
Group B	3:00-4:45 pm	8:00-9:45 am	10:00-11:45 am	1:00-2:45 pm	12:00-1:00 pm	4:45 pm
Group C	1:00-2:45 pm	3:00-4:45 pm	8:00-9:45 am	10:00-11:45 am	12:00-1:00 pm	4:45 pm
Group D	10:00-11:45 am	1:00-2:45 pm	3:00-4:45 pm	8:00-9:45 am	12:00-1:00 pm	4:45 pm

Station #1: Operation and Maintenance (1 hour, 45 minutes)

Location: Behind Shop

Presented by: Kurt Plapp, LFG Specialties Service Technician
Javier Cortez, Industrial Sales (Houston Service Industries)

Utility Flare skid with Flame-Trol I

- Rental Flares
- SAFETY
- Operational overview
- Startup sequence/proper sequencing
- Operating settings
- Shut down simulations
- Interlocks
- Importance of Preventative Maintenance (Checklist in binder)
- Flow meter maintenance – calibration, cleaning, positioning
- KOP cleaning demo
- Flame arrester cleaning demo, gasket replacement
- Limit Switch
- Flowmeter
 - Functionality
 - Maintenance
 - Verification/Calibration
- Pilot, UV, check valve
- Power monitors
- Testing
 - Tripping events
 - Fault messages – possible problems and solutions
- Hands On Troubleshooting/Problem Solving

H.S.I. Blowers

- SAFETY
- Proper greasing, lube points
- Importance of rotating unused blowers
- Troubleshooting
- Draining
- Effects of bearing temperature, water, misc.
- Demo bad bearings

Aerovent Blowers

- SAFETY
- Proper greasing, lube points
- Troubleshooting

Pressure/Vacuum Transmitters

- Scaling
- Display
- Calibration (Zero)
- Hands on Troubleshooting

Gas Analyzers

Station #2: Motor Control Equipment (1 hour, 45 minutes)

Location: Panel Shop lunchroom

Presented by: Lee Myers, Electrical Engineer
Bill Rinker, Electrical Engineer
Technical Representative, Cutler Hammer and OTP

Motor Control Center

- Safety
- Review of operational parameters
- Motor, Starter, Circuit Protector features
- Fault causes
- Clearing faults
- Resets
- UL

Variable Frequency Drives

- Applications/Benefits
- Overview of components
- Review of monitor mode display
- Use of remote mode
- Use of fault log
- Common faults
- Checking settings
- Restoring keypad settings
- Hands On Troubleshooting

**Station #3: Recording, Instrumentation & Annunciation
(1 hour, 45 minutes)**

Location: Executive Conference Room

Presented by: Ron Silbaugh, Service Manager

Yokogawa Chart Recorder

- Chart rec. setup
- Setup channel display
- Keypad vs. software
- Change time
- Sample frequency
- Data management (flash cards)
- Totalizer function
- Hands On Troubleshooting

Thermocouples

- Functionality

Autodialers

- Guard It
 - Learn/Autoset
 - Changing phone numbers
 - Checking alarm configurations
- Verbatim
 - Learn/Autoset
 - Changing phone numbers
 - Checking alarm configurations
- Alarm Agent

Honeywell Chart recorder

- By Request

Station #4: Control Panels (1 hour, 45 minutes)

Location: Training Room

Presented by: George Morgan, Electrical Engineer

Flame-Trol III and Flame-Trol IV

- SAFETY
- Overview
- EZ store
- Auto/manual operation (features)
- Screen Review
- Hard vs. soft shutdowns
- Beacon for hard shutdowns
- Honeywell controllers
 - UDC1200
 - Louver controls UDC 3300
 - Changing pre-positioned setpoints
 - Past vs. current
 - PID tuning settings
 - Autotune settings (Note: remind to call LFG before doing themselves)
 - Interface with VFD
 - High temp limit – 120L
- UV relay
- Startup sequence (Flame-Trol IV)
- Hands On Troubleshooting

***** LFG Specialties would like to thank**

for co-sponsoring our meals ***

Classroom Sessions

Wednesday, June 3

Wellfield Products (8:00 am - 8:15 am)

Presented by Kevin Mason, Product Manager

- Wellheads
- Orifice Plates
- Vent Flares
- Parts

Flare installation (8:15 am - 8:30 am)

Presented by Lee Zink, Senior Applications Engineer and Larry Hindel, Shop Supervisor

- Installation checklist
- Rigging/setting

Data Acquisition and Remote Supervisory System (8:45 am - 9:15 am)

Presented by George Morgan, Electrical Engineer

Troubleshooting and Service (9:30 am - 10:30 pm)

Presented by Ron Silbaugh, Service Manager, Kurt Plapp, Service Technician, Louis Kalani, Product Manager, and Larry Hindel, Shop Supervisor

- Service Department
- Power Quality effects on flare performance
- Quick reference for Operators
- Process diagnostics
 - Water
 - Electrical
 - Nonskid problems that affect skid operation
- Typical Problems/Problem solving

Problem Solving (10:45 am - 12:00 pm)

Station 1: UV Scanner

Station 2: Blower On/Pilot Off

Station 3: PLC Reset

Station 4: EZ Store

Station 5: Autotune/Louver Preset

Station 6: Multimeter

Station 7: Variable Frequency Drive

Station 8: Remote Access