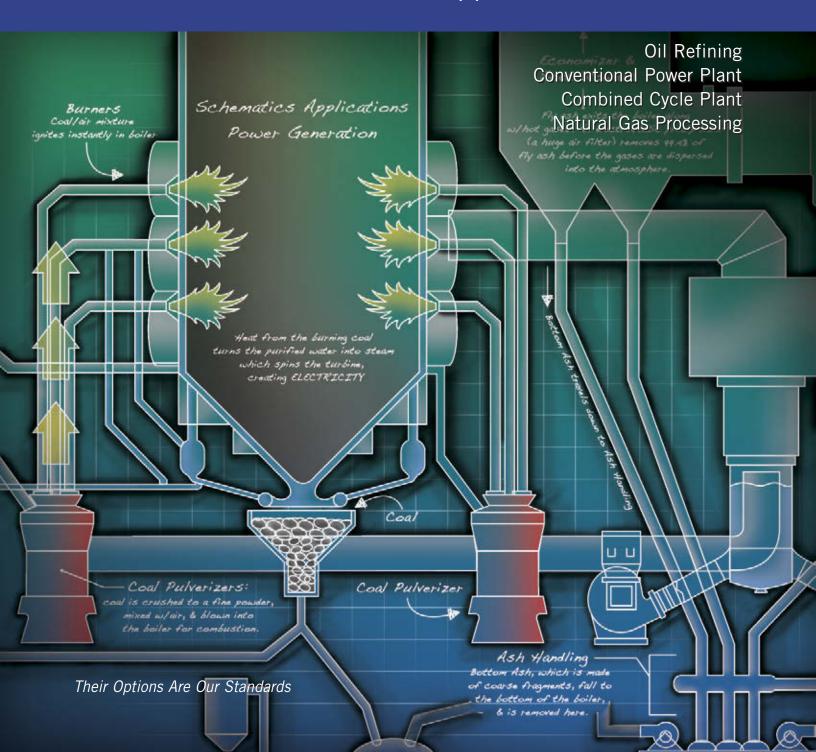
Valve Applications for Processing, Refining and Power Generation

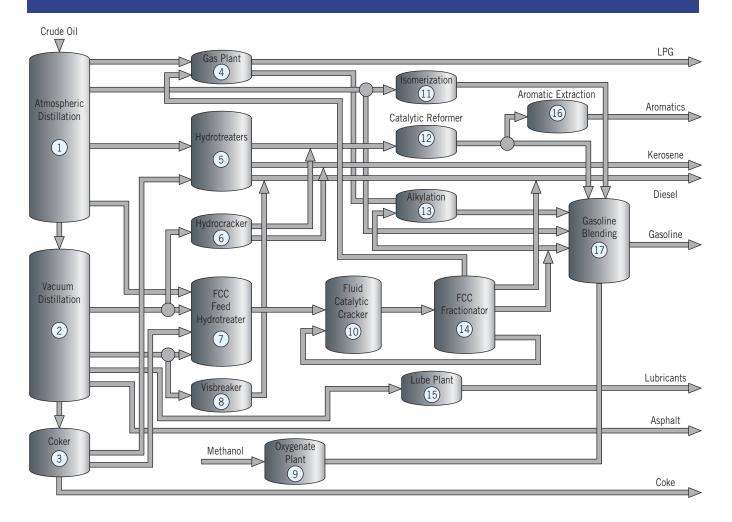


By Union Tech

Valve Application Schematics



Oil Refining



Oil Refining Application, Applicable Valves and Operational Systems

1. Atmospheric Distillation

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

2. Vacuum Distillation

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

3. Coker

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

4. Gas Plant

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

5. Hydrotreaters

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

6. Hydrocracker

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

7. FCC Feed Hydrotreater

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

8. Visbreaker

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

9. Oxygenate Plant

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

10. Fluid Catalytic Cracker

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical
- Service Valves
- Steam Traps • Tank Protection

11. Isomerization

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

12. Catalytic Reformer

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

13. Alkylation

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Steam Traps
- Tank Protection

14. FCC Fractionator

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical
- Service Valves • Steam Traps
- Tank Protection

- 15. Lube Plant • Actuators & Control Systems

 - Check Valves Control Valves
 - Instrumentation Products

 - Isolation Valves
 - Liquid Level Gauges • Pressure Relief Valves:
 - Pilot & Spring Operated
 - Pump Protection Products
 - Safety Selector Valves • Severe & Critical
 - Service Valves Steam Traps
 - Tank Protection

16. Aromatic Extraction

- Pressure Relief Valves:
- Safety Selector Valves
- Severe & Critical
- Steam Traps

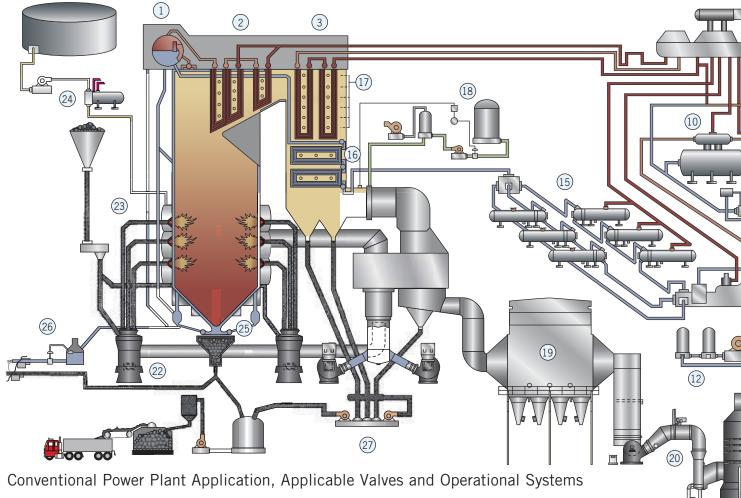
- Control Valves

- Isolation Valves
- Pressure Relief Valves:
- Pump Protection Products
- Severe & Critical
- Service Valves
- Steam Traps Tank Protection

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Gauges
- Pilot & Spring Operated
- Pump Protection Products
- Service Valves
- Tank Protection

17. Gasoline Blending

- Actuators & Control Systems
- Check Valves
- Instrumentation Products
- Liquid Level Gauges
- Pilot Operated
- Safety Selector Valves



1. Drum

- Blowdown Valves
- Check Valves
- Drain Valves
- Elbow Down Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Safety Valves
- Vent Valves

2. Superheater

- Check Valves
- Control Valves
- Desuperheaters
- Electronic Level Detection
- Electronic Relief Valves
- HP By-pass Station
- Safety Valves
- Vent Valves

3. Reheater

- Check Valves
- Control Valves
- Desuperheaters
- Drain Valves
- Electronic Relief Valves
- HRH By-pass Station
- Isolation Valves
- Isolation Device
- Safety Valves
- Vent Valves

4. Steam Turbine With Condenser

- Desuperheaters
- Extraction/Induction
 Check Valves
- Liquid Level Valves & Gauges
- Main Steam Isolation
- Pilot Operated
 Safety Relief Valves
- Safety Relief Valves
- Start-up/By-pass Valves
- Turbine Drain Valves
- Turbine Protection Valves
- Vent Valves

5. Cooling Water Circulation

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

6. Water Intake & Treatment

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

7. Condensate Pumps

- Check Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

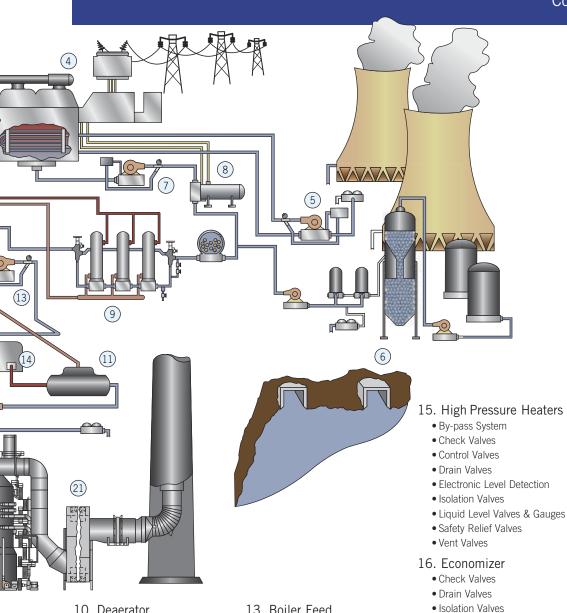
8. Heat Exchanger

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves
- Vent Valves

9. Low Pressure Heaters

- By-pass System
- Check Valves
- Control Valves
- Drain Valves
- Electronic Level Detection
- Isolation Valves
- Liquid Level Indicators
- Safety Relief Valves
- Vent Valves

Conventional Power Plant



10. Deaerator

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Safety Relief Valves
- Vent Valves

11. Evaporator

- Check Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Safety Relief Valves
- Vent Valves

12. Make-up Water

- Check Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Pump Protection Valves
- Safety Relief Valves

13. Boiler Feed **Booster Pumps**

Safety Valves

Vent Valves

17. Soot Blowers

Check Valves

Control Valves

• Isolation Valves

18. SCR Storage &

Injection

Check Valves

Control Valves

Isolation Valves

Pilot Operated

• Liquid Level Valves & Gauges

• Pump Protection Valves

Safety Relief Valves

Safety Selector Valves

Safety Relief Valves

• Drain Valves

• Drain Valves

• Safety Valves

Vent Valves

- Check Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

14. BFWP Turbine

- Check Valves
- Desuperheater
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Pilot Operated Safety Relief Valves
- Safety Relief Valves
- Start-up Control Valves
- Turbine Protection Valves
- Vent Valves

19. Bag House

Isolation Valves

20. Scrubber

Isolation Valves

21. Precipitator

Isolation Valves

22. Coal Pulverizers

Isolation Valves

23. Burners

Isolation Valves

24. Fuel Storage and Distribution

- Check Valves
- Detonation & Flame Arresters
- Drain Valves
- Emergency Vent
- Gauge Hatches & Manhole Covers
- Internal Tank Valves & Operators
- Isolation Valves
- Liquid Level Valves & Gauges
- Pilot Operated Pressure/Vacuum Valves
- Safety Relief Valves
- Tank Blanketing Regulators

25. Mud Drums

- · Blow-off Valves
- Continuous Blowdown Valves
- Drain Valves

26. Flash Tank

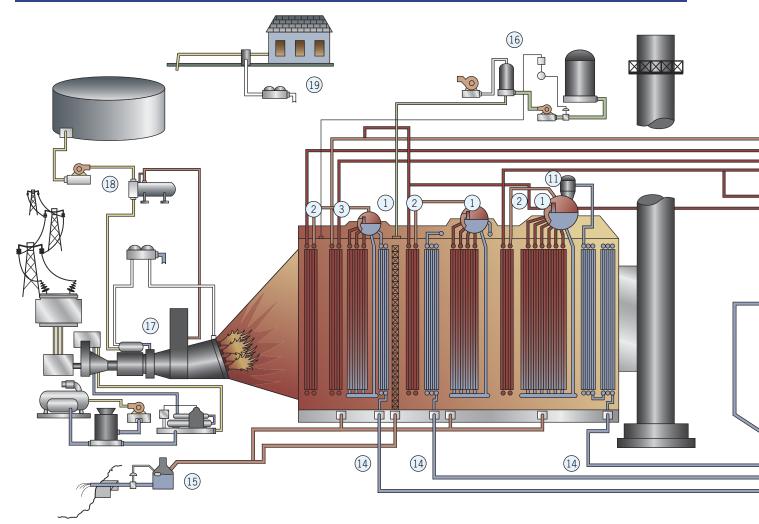
- Check Valves
- Discharge Control Valves
- Drain Valves
- Liquid Level Valves & Gauges
- Safety Relief Valves

27. Ash Handling

- Control Valves
- Isolation Valves
- Pilot Operated Safety Relief Valves
- Transport Valves

1. Thru 27.

- Actuators
- Enclosures
- Hand Valves & Manifolds
- Steam Traps



Combined Cycle Plant Application, Applicable Valves and Operational Systems

1. Drum (HP, IP, LP)

- Blowdown Valves
- Check Valves
- Drain Valves
- Elbow Down Valves
- Electronic Relief Valves
- a la alationa Maluna
- Isolation Valves
- Liquid Level Valves & Gauges
- Safety Valves
- Vent Valves

2. Superheater (HP, IP, LP)

- Check Valves
- Control Valves
- Desuperheaters
- Drain Valves
- Electronic Level Detection
- Electronic Relief Valves
- HP By-pass Station
- Safety Valves
- Vent Valves

3. Reheater

- Check Valves
- Control Valves
- Desuperheaters
- Drain Valves
- Electronic Relief Valves
- HRH By-pass Station
- Isolation Valves
- Isolation Device
- Safety Valves
- Vent Valves

4. Steam Turbine

- With Condenser
 Desuperheaters
- Extraction/Induction Check Valves
- Liquid Level Valves & Gauges
- Main Steam Isolation
- Pilot Operated
 Safety Relief Valves
- Safety Relief Valves
- Start-up/By-pass Valves
- Turbine Drain Valves
- Turbine Protection Valves
- Vent Valves

5. Cooling Water Circulation

- Check ValvesControl Valves
- Control valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

6. Water Intake & Treatment

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

7. Condensate Pumps

- Check Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

8. Heat Exchanger

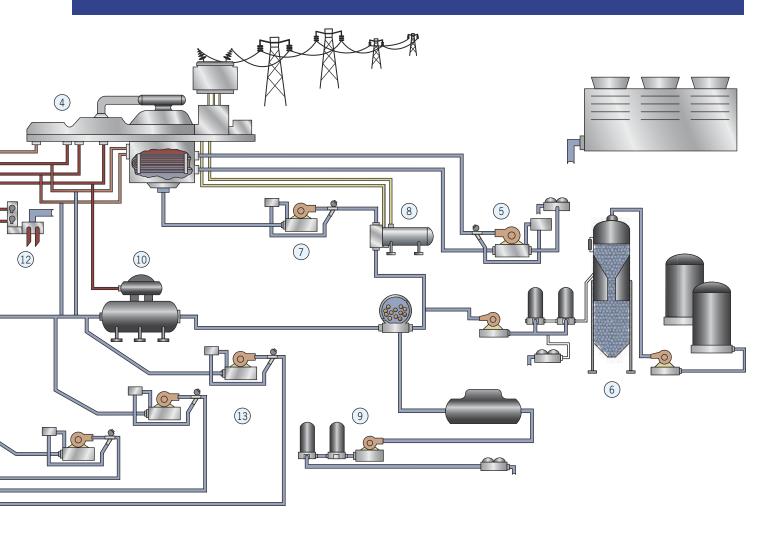
- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves
- Vent Valves

9. Make-up Water

- Check Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Pump Protection Valves
- Safety Relief Valves

10. Deaerator

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Safety Relief Valves
- Vent Valves



11. LP Drum Deaerator

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Safety Relief Valves
- Vent Valves

12. Process & Export Steam

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- · Safety Relief Valves
- Vent Valves

13. Feed Water Storage & Distribution (HP, IP, LP)

- By-Pass System
- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Pump Protection Valves

14. Economizers (HP, IP, LP)

- Check Valves
- Drain Valves
- Isolation Valves
- Safety Valves
- Vent Valves

15. Flash Tank

- Check Valves
- Discharge Control Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves & Gauges
- Safety Relief Valves

16. SCR Storage & Injection

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Liquid Level Valves
- Pump Protection Valves
- Pilot Operated Safety Relief Valves
- Safety Relief Valves
- Safety Selector Valves

17. Combustion Turbine

- Check Valves Control Valves
- Drain Valves
- Isolation Valves
- Pump Protection Valves
- Safety Relief Valves

18. Fuel Storage & Distribution

- Check Valves
- Detonation & Flame Arresters
- Gauge Hatches & Manhole Covers
- Internal Tank Valves & Operators
- Liquid Level Valves & Gauges
- Pilot Operatored Pressure/Vacuum Valves
- Safety Relief Valves
- Tank Blanketing Regulators

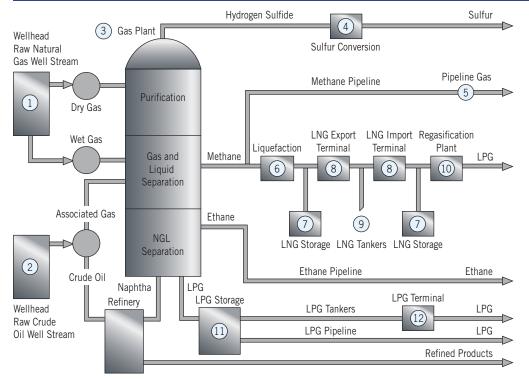
19. Gas Pipeline (Custody Transfer Station)

- Check Valves
- Control Valves
- Drain Valves
- Isolation Valves
- Pilot Operated Safety Relief Valves
- Safety Relief Valves

1. Thru 19.

- Actuators
- Enclosures
- Hand Valves & Manifolds
- Steam Traps

Natural Gas Processing



Natural Gas Processing Application, Applicable Valves and Operational Systems

- 1. Wellhead Natural Gas
 - Instrumentation Products
- 2. Wellhead-Crude Oil
 - Instrumentation Products
- 3. Separation
 - Actuators & Control Systems
 - Check Valves
 - Instrumentation Products
 - Isolation Valves
 - Liquid Level Indicating Systems
 - Pressure Relief Valves: Pilot & Spring Operated
 - Pump Protection Products
 - Safety Selector Valves
 - Tank Protection

4. Sulfur Conversion

- Actuators & Control Systems
- Check Valves
- Instrumentation Products
- Isolation Valves
- Pressure Relief Valves:
 Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves
- Tank Protection

5. Pipeline Gas

- Actuators & Control Systems
- Check Valves
- Instrumentation Products
- Isolation Valves
- Pressure Relief Valves:
 Pilot & Spring Operated
- Safety Selector Valves
- Severe & Critical Service Valves

6. Liquefaction

- Actuators & Control Systems
- Check Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Indicating Systems
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves

7. LNG Storage

- Actuators & Control Systems
- Check Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Indicating Systems
- Pressure Relief Valves:
 Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Tank Protection

8. LNG Export/Import Terminal

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Indicating Systems
- Pressure Relief Valves:
 Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Tank Protection

9. LNG Tankers

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Indicating Systems
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves

• Tank Protection 10. Regasification

- Actuators & Control Systems
- Check Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Indicating Systems
- Pressure Relief Valves: Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Severe & Critical Service Valves

11. LPG Storage &

12. LPG Terminal

- Actuators & Control Systems
- Check Valves
- Control Valves
- Instrumentation Products
- Isolation Valves
- Liquid Level Indicating Systems
- Pressure Relief Valves:
 Pilot & Spring Operated
- Pump Protection Products
- Safety Selector Valves
- Tank Protection

Represented By:



12735 Dairy Ashford Road Stafford, Texas 77477 281.340.5400 Toll Free: 800.256.6193

Fax: 281.340.5499 www.globalflowtech.com