Solutions for Sulfur Unit Problems

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sulfur solutions

The solutions you need to get your Sulfur Recovery Facilities operating properly.

PRINCIPAL® TECHNOLOGY INCORPORATED

Principal Technology is a solutions provider.

We have the experience, the expertise, and the specialized technology necessary to make your existing Sulfur Recovery System operate more reliably, more efficiently, and safer.

- Experience (each member of our key staff averages over 26 years experience)
- Expertise (we've supplied services and technology to more than 117 units ranging from less than 10 to over 500 LTPD)
- Customized equipment and subsystem integration
- Specialized Technology (to enhance startup, stability, reliability, and safety while addressing environmental compliance)

We provide solutions to problems associated with:

- Acid Gas Feed
- Ammonia Salt Plugging
- Analyzer Reliability
- Process Control Systems
- Shutdown and Interlock Systems
- Sulfur Handling & Vapor Recovery
- Operating Procedure Development or Assistance
- Combustion Systems
- Tail Gas Diverter Valves
- Tail Gas Reactor Feed
- Regulatory Compliance

Solution: Combustion and Pilot Systems

Principal Technology has developed combustion control systems utilizing Stackmatch™ pilot components to speed startup and enhance flame stability for furnaces, thermal reactors, tail gas feed heaters, incinerators, and other fired equipment.

We provide and install Flame Scanners that are engineered to ensure reliable flame monitoring.

Thermal Reactor and furnace temperature monitoring is important for reliable measurement in multiple operating modes. Our Thermal Reactor Temperature Monitoring Systems are engineered to provide the appropriate measurement for each unit.

Solution: SRU Burner

Our proprietary Sulfur Recovery Burners are ideal for new or retrofit and replacement projects. They enhance mixing, extend burner life, provide thermal radiation control, and extend the broad operating range for high turndown.

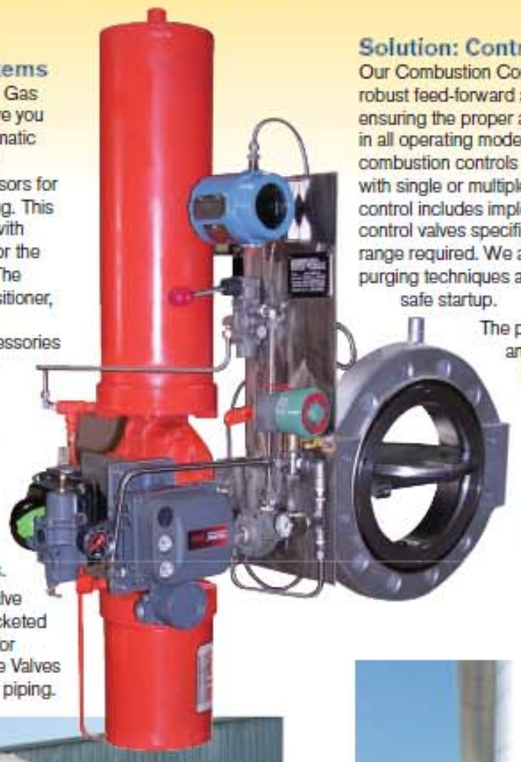
In addition to our SRU Burners, our Burner Safety Shutdown Systems detect both the pilot and the main flame to provide safe operation during startup and shutdown without nuisance interlocks.

Principal Technology provides an Automated Purging System to keep viewing windows and instrument nozzles on the burner and furnace from sooting over.

Solution: Tail Gas Diverter Valve Systems

Principal Technology's Tail Gas Diverter Valve Systems give you exceptionally reliable automatic operation and include our exclusive temperature sensors for continuous valve monitoring. This is an integrated package with specially sized actuators for the SRU tail gas application. The package also includes positioner, solenoid valves, position monitoring, and other accessories to enhance performance. Partial stroke testing functionality is available. Our Tail Gas Valves are available in multiple body styles to simplify the replacement of troublesome valves and to meet piping or maintenance requirements.

The Tail Gas Diverter Valve System includes steam jacketed piping, valving, and traps for thermal maintenance of the Valves as well as for the adjacent piping.



Solution: Control Systems

Our Combustion Control Algorithms provide robust feed-forward and feedback control ensuring the proper airflow to the burner in all operating modes. Principal Technology's combustion controls are well applied to sulfur units with single or multiple feeds. Proper combustion control includes implementation of flow meters and control valves specified to provide the widest operating range required. We also have developed furnace purging techniques and systems that help ensure safe startup.

The proper installation of tail gas analyzers gives you more reliable operations and control. Incinerator stack analyzers are implemented for continuous emission compliance monitoring.

We can also help you with specialized controls for your Tail Gas Feed Heater and can assist your plant with SIL, S84, or PHA reviews of your facilities.

Solution: Sulfur Collection & Vapor Recovery

When a sulfur unit includes a pit for sulfur collection, Principal Technology specifies components to enhance reliability and minimize the typical problems associated with sulfur pits. These enhancements include alloy piping and acid resistant concrete.

Many plants today are installing sealed sulfur collection systems to facilitate sulfur degassing and to eliminate vapor releases and fire hazards. This means that sulfur is collected in a sealed tank that has an external heating system. Our designs provide a Sultrap™ option that eliminates fugitive emissions and, by eliminating seal legs, is easier to construct and to maintain.

Level measurement in a pit or tank is done with a variety of instruments from bubbler systems to non-contact technologies. Principal Technology can provide the instruments you need for maximum reliability and maintainability.

Solution: Integrated System

Principal Technology provides turnkey system design and integration that includes Burner Management Systems, Safety Shutdown Systems, Process Control Systems, and Distributed Controls. We have complete in-house capabilities for system assembly, programming & configuration, and hardware/ software simulation & function testing.

Stackmatch™: Stackmatch Flare Ignition, Inc.
Sultrap™: Sulfur Operations Support

We offer more than sulfur solutions…

Comprehensive Design and Evaluation Tools

Principal Technology uses a wide variety of software tools to provide simulation, analysis, evaluation, and design of the process, equipment, piping, and instrumentation for every sulfur process and system. These include 3D Modeling and our proprietary design tools. We also provide control system integration products supplied by the control system manufacturers.

Static Stress
Finite Element Analysis

Onsite Facility Evaluation Services

We help you identify equipment and operating problems with our complete facility evaluation program. Our evaluation service not only helps you diagnose current problems but also helps identify potential problems in your amine, sour water, sulfur, and tail gas units. Pinpointing the real cause of observed problems is often the valuable result of the evaluation activities.

Site-Specific Operator Training

Our on-site operator training arms your personnel with the knowledge and skills they need to keep your sulfur plant running consistently and incident-free. Our training programs are unique because of the techniques we have developed to provide operators with practical and useful information. Our classes are presented in conjunction with plant operating procedures and practices, emphasizing safety and sound reasons for the direction given.

All Principal Technology training is facility-specific. Before we create a program that exactly meets your needs, we review your requirements and analyze your sulfur facilities from amine and sour water stripper units through the incinerator and sulfur loading facility. Then we create a training program ideal for your sulfur system, working hand in hand with the plant training staff.

OTHER SUCCESSFUL PROJECTS:

- Environmental Control Projects
- Design and Supply of Gas Detection Systems
- Process Review and Control System Engineering
- Process Piping Projects
- Design and Oversight Fabrication for Metering Pump Systems
- Development of Ambient Gas Detection and Monitoring Systems
- Design & Engineering for Specialized Chemical Process Control Equipment
- Other Design/Engineering Projects for the Process and Manufacturing Industries including Refining, Chemical, and Petro-Chemical

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