VALVTRON

Application Data

Gasification Process

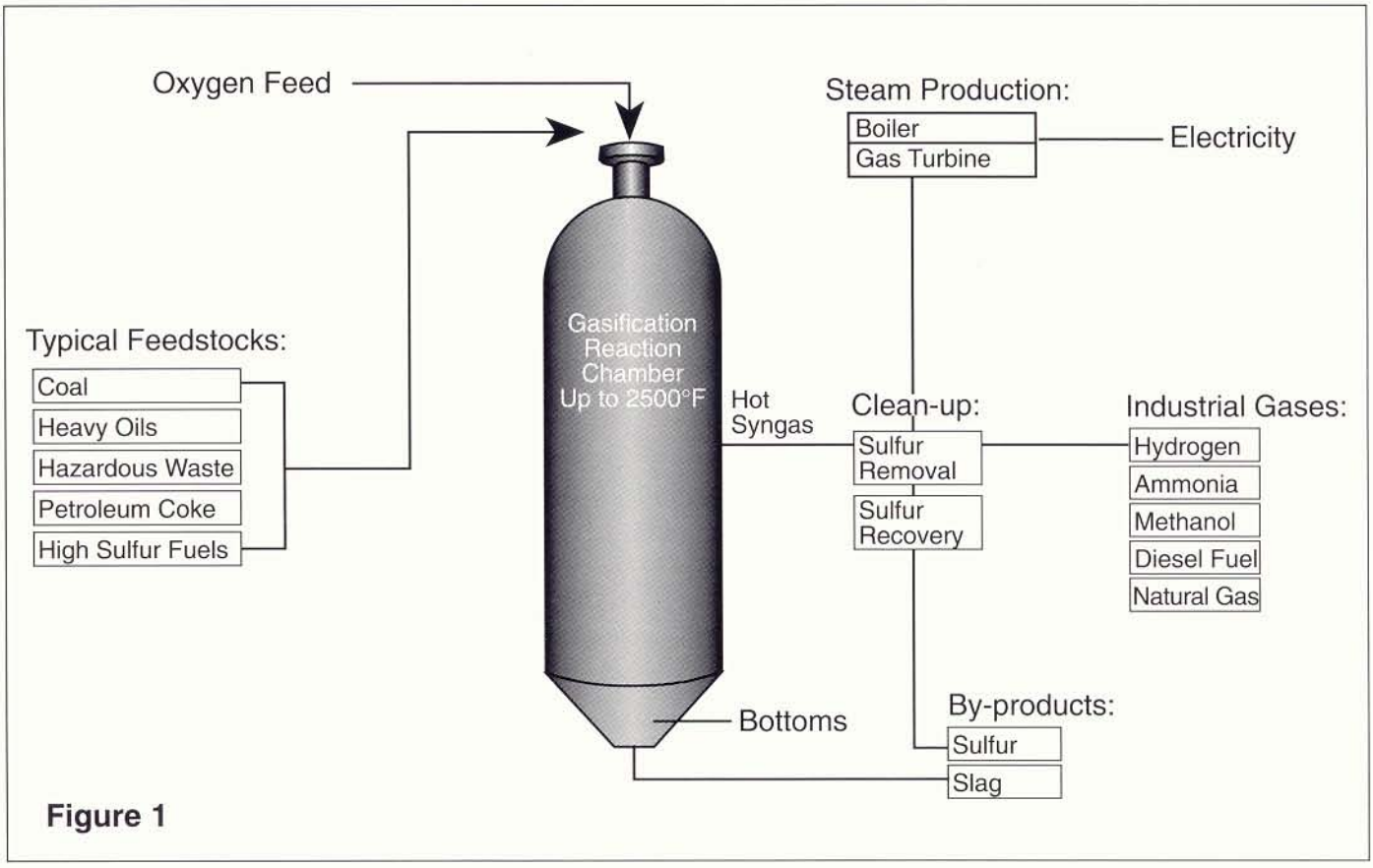

Figure 1

Gasification Technology

Numerous technologies have been developed to increase efficiencies, reduce waste, and regulate fugitive emissions for industrial markets worldwide. Stricter regulations and stronger economic pressures have been the driving force behind these newly developed technologies. The key being, utilities and industrial refiners must choose a process that will easily adapt to existing equipment, provide versatility, and be cost effective to install and maintain. Gasification seems to be one of the most popular among the available process technologies.

The United States Department of Energy (DOE) is probably most widely known for their 'Clean Coal Technologies' program that promotes the research and development of coal technologies. Most systems are designed on a commercial scale, where the government and industry leaders cost-share in the funding. Once the process is proven successful, many are patented, licensed, and made available to assist other plants in meeting their energy and environmental goals efficiently and reliably.

Typical Applications

Valvtron products are successfully being used in the hot gas clean up lines, ash handling, feedstock, and steam lines. Please contact Valvtron for information on specific applications.

Gasification Technology - continued

How Does a Gasification Process Work

The gasification process simply converts feedstock into synthesis gases that are then converted into chemicals, various fuels, power generation, or typical industrial gases (see Figure 1). Some advantages are: reduced emission; more flexibility with feedstocks; and substantial savings in producing their own electricity, steam and various other by-products. Aside from the fact that the processes are designed to meet government emissions regulations, these systems can utilize much of the plant's existing equipment. Unlike its sister technology, Pressurized Fluidized Bed Combustion (PFBC), gasification is created by a chemical reaction occurring in an oxygen-lean environment at high temperatures. PFBC technology is based on combustion of coal and limestone in a boiler. The similarity is that both processes operate at high temperature, produce alternative power/fuel sources, and reduce emissions. Gasification is considered more versatile for most industries due to the fact that virtually any product containing hydrocarbons can be gasified.

Importance of Valve Selection

When you consider the composition of typical feedstocks used in gasification coupled with high temperatures and gases produced, valves become a critical and integral part of the overall efficiency of the process. Valve designs must be able to displace solids, protect seating area from service media, be designed to handle the extremely high temperatures, and be able to continually seal bubble tight. For this reason, most valve manufacturers will find gasification systems extremely challenging. In addition, full ported bores should be considered to minimize turbulence and erosion problems. And probably most importantly, special attention must be given to the stem packing design to assure requirements for fugitive emissions are addressed.

Why Use Valvtron

Based on the severity of services and conditions addressed above, the Valvtron valve is the logical choice for gasification processes. Valvtron has been dealing in highly abrasive and corrosive feedstocks, gases and extreme high temperature services for over 10 years. Our standard valve design incorporates and addresses all of the issues critical to valve performance within these systems. Our integral seat, space age coating technology, fugitive emission stem package, and extended service life features, will ensure you get the most from the gasification technology you select. What this means to you, the customer, is that you have immediate access to a field-proven, economical, and highly engineered product.

Excellent References

Valvtron has been tested, approved, and is currently being **used in numerous licensed gasification processes around the world.** We invite you to contact us and learn more about how we can help you become more efficient and get the most out of your gasification process.

Valvtron products are also utilized in refinery services such as FCCU, CCR, Heavy Oils, Cokers, and Catalyst Handling. Other major markets include Power, Chemical, Aerospace and Mining.

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