



Pipe Heating – Too Often Over Looked

Too often process pipe heating requirements do not receive the attention they deserve until very late in a project's implementation. As with any project, significant time and effort is invested at the beginning of the project defining and engineering the mechanical requirements for a process piping system. Unfortunately, too many times little consideration is given during design to the understanding and selection of the appropriate pipe heating technology to apply. All too often the result is the application of a low cost trace element heating solution that doesn't meet the customer's expectations, provides poor performance and unreliable service during subsequent years of operation. The impact on an end user is a significant increase in total cost of ownership over the life of the system compared to alternate forms of process pipe heating such as impedance pipe heating (IPH).

Living with the frustration of a poorly functioning trace element pipe heating systems can be avoided with modest attention, thought and consideration during the design phase of the piping system. It is at this point that the performance and reliability benefits an impedance pipe heating system can best be captured. By considering an IPH system during the design phase of the project, the design engineer is able to effectively integrate the installation requirements of IPH into the design. With limited application knowledge and a little thought, application of an impedance pipe heating system can be accomplished with minimal and in some cases no additional mechanical piping requirements. Knowing the appropriate locations for IPH system isolating flanges and flanged components allows for proper impedance pipe heating system circuitization, eases field installation requirements and reduces the total cost of a system's installation.

Competent impedance pipe heating system suppliers routinely provide engineering application assistance and guidance for specific piping applications. The key to a successful design and implementation is to get your IPH supplier involved early and prior to the finalization of the piping system's design. A few of the application design considerations needing to be addressed are:

- What purpose does the impedance pipe heating system serve in the process?
 - Does it need to maintain constant elevated temperature from one point on your system to another?
 - Does it need to raise the temperature of your material as it passes through the pipe?
 - Does it need to raise a standby temperature of a tank or pipe to an operating temperature within a defined time?
 - Does it need to perform any combination of these functions?

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- What are the characteristics of the piping system?
 - Is the piping of the same size and material?
 - Is the piping to be insulated with a common insulating material and thickness?
 - Will the impedance heated piping to be located within a common ambient condition?
- What is the most efficient means to circuitize the piping for application of an impedance heating system?
 - Will any insulating flange joints needed and where for proper system circuitization?
 - Circuitization layout so as to minimize impedance system cabling length.

With competent design integration of impedance pipe heating into the process piping system portion of the project, the customer will achieve the full benefits of an impedance pipe heating system. These benefits include precise temperature control, even temperature heating across the entire piping system, no localized hot spots causing product damage, highly reliable operation, and minimal maintenance requirements as there is nothing installed underneath the piping's insulation.

Impedance pipe heating is frequently misunderstood and overlooked when process pipe heating is being considered. With focused attention and modest consideration when designing heated process piping, impedance pipe heating can be integrated into the overall project easily and cost effectively. Following a simple process of addressing the purpose of the IPH system, key characteristics and efficiently circuitizing the piping application you will be able to provide excellent temperature control performance and a highly reliable pipe heating system.

For additional information or assistance with your specific application visit our website, www.banner-day.com or call us at (877) 837-0584

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