

Routing a Flare line to a Knock-Out (KO) Drum

The Brindley Engineering (BE) Mechanical Team was commissioned by a large refinery to provide a new design for rerouting an existing flare line (that was to be increased in diameter) to the inlet of their KO Drum while ensuring the equivalent length of the new route would be shorter than the current route.

BE the Solution

Due to various constraints and the Client's desire for multiple alternatives, BE's piping design group put together nine (9) possible options to be analyzed and then created a program that would calculate and present the client with the total equivalent lengths for each option. The client needed to analyze each option against the existing line configuration so BE performed high-level pipe stress analysis of the existing piping along with each of the 9 possible solutions.

Our Challenges

BE's main goal was to optimize the existing route while improving valve access locations, increasing the line to 24", and relocating existing supports to the new configurations, along with minimizing all additional new supports. Rerouting the new line along with the valve and support location revisions had to pass stress checks, not overload existing steel, and improve the operability of the unit. BE was able to meet and resolve these project challenges by providing a multitude of high-level options then working with the Client to narrow the options to a few select best alternatives for final evaluation, selection, and detailed design.



BE the Result

BE's Team successfully provided our client with two final sustainable solutions to meet all their scope criteria of stress, constructability and operational demands. The project was executed successfully requiring only basic engineering input during construction.

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