

## Time-tested, proven performance provides confidence in ebullated bed applications

### Challenge

In 2003, an internationally known refiner awarded a European valve manufacturer the majority of valves required in their ebullated bed units. Shortly after start-up, the refiner experienced buyer's regret when the plant was not able to stay online as expected. The integral-seated valves, using trunnion and floating ball designs, were plagued by stem leaks, body gasket leaks and other leak-through issues—costing the plant millions of dollars in lost production.

### Solution

Within this ebullated bed unit, MOGAS was initially awarded only the reactor catalyst handling valves and a pair of safety relief isolation valves—because of perceived higher costs. Yet these MOGAS valves performed so well, the refiner ordered 145 valves over two years to replace poorly performing competitor valves.

### Results

In 2007, the refiner presented their prestigious Vendor Excellence Award to MOGAS for their “superior performance above and beyond” the norm in safety, technical capability, commitment to quality, delivery and cost.

Specific to the award was a scheduled turnaround. A MOGAS rapid response service team completed their maintenance work a full 48 hours sooner than anticipated, allowing the refiner to resume production ahead of schedule—saving the refiner millions of dollars in lost production revenue.

The exceptional performance of the MOGAS valves, coupled with the rapid response of the support team, led to MOGAS being awarded the sale of 350 valves (100 single-sourced and 250 completely bid) in 2008 for an expansion unit. Additionally, from 2011 to 2015 the refiner ordered 113 valves to replace all existing competitor valves at the original unit.

The total MOGAS valves installed in this refinery was 608, of which 258 were valves to replace poorly performing competitor valves.

### Conditions

|                       |  |
|-----------------------|--|
| <b>Application:</b>   | Hydrocracking and Catalyst Addition and Withdrawal |
| <b>Temperature:</b>   | >900° F (480° C)                                   |
| <b>Pressure:</b>      | >2500 psig (172 bar)                               |
| <b>Valve Model:</b>   | CA-1AS   |
| <b>Valve Size:</b>    | 2 to 24 inch<br>(50 to 600 dn)                     |
| <b>No. of Valves:</b> | 145  |

*With only a limited number of ebullated-bed hydrocracking units in existence globally, finding a valve manufacturer that understands the process could be nearly as arduous as the process itself.*

*For almost 30 years, MOGAS has worked in concert with the only two licensors of this technology to develop coatings and valve designs that can withstand this demanding process with 100 percent reliability for a unit's entire 4- to 5-year run-time. Our experience, performance record and dedication to continuous improvement have made MOGAS the preferred vendor for this unique process technology.*

*This is why MOGAS is the only manufacturer with valves installed in EVERY ebullated bed unit worldwide — totaling well over 8,200 valves.*