

Interview with Gobind Khiani, Valve Subject Matter Expert Developing Innovative Ideas through



most enjoys sharing his knowledge and acting as a source of information for younger and new engineers – a rewarding aspect of his role, which is also reflected in his involvement with the Valve World Americas conference.

“Everyday is different. The days can be challenging – the main focus of my role is influencing the way in which we handle projects, particularly in the early configuration phase. I provide support and mentor less experienced engineers. We have a highly educated group with several new engineers, and it is useful that the newer team members can talk to those with more experience,” explained Gobind. “I step in as a trouble-shooter if teams reach a point where they are not sure how to proceed. Having been in industry for 22 years, I have worked on a lot of plants, so I am comfortable getting involved when difficulty arises. I enjoy the interaction with clients, contractors and manufacturers as it adds to my knowledge, helps me engage at every step and keeps me aware of critical process requirements.”

In school for engineering, Gobind Khiani developed an interest in the flow of fluids early on. After graduating in Pune, India followed by a master's degree in Materials and Pipeline Engineering at the University of Calgary in Alberta, Canada, Gobind decided to follow his passion into fluid flow and the control and containment industry, igniting his interest in valves. In his current role as valve subject matter expert for the Energy & Chemicals group for Fluor, Gobind continues to explore his interest in valves through developing programs for projects, exploring compliance demands and helping to educate and spread his expertise.

Valve World Americas was delighted when Gobind agreed to take up the role of Vice Chairman for the 2017 Valve World Americas Conference and help put together an interesting and informative Conference Program. We spoke to Gobind about his experiences in working with valves, his expectations for the upcoming conference and the importance of transferring knowledge in the industry.

By Sarah Bradley

Fluor Corporation is one of the world's leading publicly traded engineering, procurement, fabrication, construction, maintenance, and project management companies. Fluor has been providing engineering, procurement, fabrication and


construction services in Canada for more than 65 years, and serves clients globally across a variety of industries.

As a valve subject matter expert, Gobind Khiani supports a range of projects. He provides recommendations on the most effective selection and sizing of valves to meet safety and design requirements and leverages his expertise in engineering to reduce costs and improve quality, safety and efficiency.

Gobind's day typically involves interfacing with the teams on each of their projects and ensuring that all the work complies with Fluor's procedures, as well as industry standards, regulations and any regional standards based on project location. Besides the variety in his work, Gobind

In his role, Gobind looks after code compliance for severe service valves and pipeline valves. He also supports materials selection on applications such as natural gas production, oil and gas processing plants, piping systems, transmission and cross country pipelines, chemical, petrochemical, power and plant processing units, pigging/scrapper stations and piping arrangements including valves (launcher and receiver). He is also involved in the development of double block and bleed and double isolation bleed philosophies, high-intensity pressure protection systems and surge relief equipment requirements and specifications. Further, he is involved in reviewing and leading initiatives such as intelligent valve placement analysis and applying and evaluating new technology and manufacturing-style process improvement to valves.

Fluor's global sourcing experts keep teams informed company-wide on current and new trends. Through their global projects, the company has a list of trusted, reputable vendors and works with a client's Approved Manufacturers List (AML) to ensure that the best sources are used. In sourcing material, Gobind and his team begin by


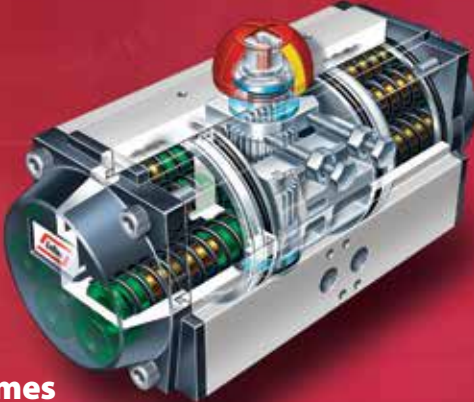


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executing agreements; collaborating with manufacturers on their new technology, methods of manufacturing, and auditing processes; and adding value engineering in sourcing with the procurement teams. They ensure that senior management alignment is maintained on the list of approved vendors while working with the client on reviewing specific applications to provide a technically competent AML. Following the client's AML, Gobind provides current industry input on available and new vendors. He is always gathering data on a regular basis regarding certifications and manufacturer compliance to share with existing projects and clients.

"Almost all types of valves are used in every project we execute. A project may have a range of 10,000 to 40,000 valves in a variety of gate, globe, check, ball, butterfly, control and tank breathing valves, as well as pressure relief devices and others. A lot of them are used in comparable applications. Most commonly used in Alberta, for example, are low temperature, carbon steel ASTM A352LCC or A350LF2 grade body materials and various combinations of trim materials, starting with LF2+ENP, SS304, SS316 ball and stem. This valve could be double block and bleed or double isolation and bleed," he said.

Fluor excels in the modularization of projects, and has implemented a 3rd Gen Modular ExecutionSM strategy which results in the level of achievable offsite work being significantly increased. This execution model splits the project into process blocks and moves into designing modules that then drive the plot plan. The strategy allows Fluor to reduce some bulk material quantities through a more compact plant layout by synergizing equipment and implementing a distributed controls philosophy.

The approach transfers the maximum labor hours from a low-efficiency and high-cost field environment to higher efficiency and lower cost module fabrication yards, reduces the time required and risk involved with completing this work onsite and significantly reduces the footprint required for the facility, thus benefitting the capital cost and environmental effect of the project. 3rd Gen Modular

Execution is a successful strategy which greatly benefits the client and the project, but the modularization technique does add complexity from a specification and material selection standpoint.

"We have successfully delivered module fabrication on numerous projects. In these modular units, we do not have the luxury of installing a valve that is three meters tall. We have to think compact and lightweight. Often, standard commodity valves are not an option. We employ many kinds of valves including choke, control, ball, gate, globe, double block and bleed and double isolation and bleed. On average we procure about 3,000 to 4,000 valves per project. Some valves are dealing with more viscous fluids like crude oil. A lot of times during large turndowns and mixed flows, there are numerous special requirements," Gobind explained. "Also, we deal with high pressure applications, very high shutoff applications and situations where the actuators are required to be fast-acting in order for a valve to close in seconds. This means the controls used to operate these actuators should be able to deal with harsh conditions, corrosion, noisy applications and sometimes high brine atmospheres."

Another urgent valve challenge that Gobind has recently been facing is the proposed introduction of Xylene in diesel lines and the effects the solution has on valves and piping materials. "Adding Xylene in the diesel line is the most urgent valve problem at this time. It was a temporary recommendation by operations to use Xylene towards start-up of existing lines to help flush residue and to improve the flow rates. Having reviewed the compatibility of Xylene with nitrile rubber (NBR), it was determined that this compound of soft components in valves will see poor performance and the NBR could crystallize or disintegrate due to reaction with Xylene.

With safety and response of chemicals in mind, we determined not to use Xylene in the system and evaluated alternative methods."

With the applications becoming more complex with higher temperatures and higher pressures, in his experience, Gobind believes that vendors with good track records on those applications are challenging to find, especially those with the right tolerances in their design and manufacturing processes. While some vendors are trying to use more corrosion-resistant alloys and produce large valves for higher pressure applications to meet the requirements, time is often an issue.

"The biggest challenge we face with materials is making them compact. We would also like to see certification for materials. To comply with certification requirements, we need substantial documentation for client specification, local regulatory body compliance, valve manufacturers' testing and certifications, operations and maintenance manuals, quality certifications, etc. There are testing requirements that vendors are used to providing as an option, whereas in some other applications, it would be great to make them aware of the documentation requirement and requirements of material traceability," he said.



Please check out Part Two of the interview with Gobind in the November issue of Valve World Americas journal.



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