VIJAYTHA BALAJI

Flow Assurance Consultant I

Summary

Years of Experience – 7

Professional experience includes 3 years of direct chemical engineering experience in water systems in reverse osmosis and cooling water systems, remote monitoring, process, and product quality issues.

Additional experience gained includes, project management, marketing, and business development.

Industries

- Oil and Gas
- Upstream
- Onshore / Offshore Pipelines
- Water treatment

Areas of Expertise

- Flow Assurance
- Process Simulation
- Operational Support
- Data Analysis
- Scaling, Fouling & Corrosion
- Conceptual Studies
- Front end Engineering
- Technical training & Support

Qualifications

Education

Bachelor of Technology in Chemical Engineering,

St. Joseph's College of Engineering, Chennai (2010)

Certifications

- Flow Assurance in Petroleum Industry (IIT, Madras) (2019)
- Program and Project Management (IIT, Kanpur) (2012)

Software / Skills

- CHEMCAD
- PIPESIM
- OLGA
- PVTSIM
- MULTIFLASH
- Microsoft Visio

Languages

- English
- Tamil
- Hindi

Experience

Vijaytha has 7 years of professional experience and is currently associated with Wood Group, India as a Flow Assurance consultant. She provides technical service and support for flow assurance studies and is responsible for performing multiphase flow studies involving various aspects of onshore and subsea production and export systems during multiple phases of the projects such as Pre-FEED, FEED, Detailed Design and Operational Support. She is also involved in providing technical training and support for CHEMCAD to clients across Asia and Middle East.

Her previous employment as a Project Lead included framing the Project deliverables based on business requirement for the Process Automation (3DTrasar) Project by Coordinating cross functionally. In addition, handled technical queries on process and product quality issues pertaining to cooling tower and reverse osmosis systems and troubleshooting system specific issues like scaling, corrosion, fouling based on review of historical performance trends and plausible failure scenarios, design and water chemistry analysis and ensure maximum water & energy savings.

CHEMCAD Training and Technical Support

Involved in troubleshooting of technical queries for clients across varied industries. In addition, provided technical training highlighting the features of the software and how it can be used for client applications for maximizing their efficiency. The clients are namely Knexir Consultants Pvt. Ltd., Mumbai, ISGEC Heavy Engineering Ltd., Noida and SCT Engineering College, Kerala.

Key Projects

Marjan Increment Program Steady State & Transient FA Analysis – Saudi Aramco

Steady State and transient flow assurance analysis for the Lean Gas system was performed as part of the Marjan field development program for the lean gas injection and the rich gas production pipeline systems, MEG pipelines and the umbilicals in Marjan field. The Marjan Offshore Field is located in the Arabian Gulf, approximately 85 km northeast of Tanajib approximately 260 km northeast of Dhahran. The field is in medium depth waters in range of 45 to 52 m.

Shenzi Umbilical Capacity Assessment – BHP Billiton Petroleum (Americas) Inc.

Steady state was modelled in PIPESIM for chemical injection analysis consisting of discrete chemical injection systems for 2 new early production wells at the proposed drill centre N (DC-N) and also taking into account three existing wells each from drill centre C (DC-C) and drill centre H (DC-H). The maximum injection rates and pressures (worst-case scenarios) were estimated to confirm the feasibility of accommodating the new drill centre with the existing infrastructure with the given topside facility (Shenzi TLP) limitations (flowrate, discharge pressure and design pressure criteria) of the chemical injection lines.

Lingshui (LS17-2) Gas Field Development Steady State FA Analysis – CNOOC, China

Performed well modelling and integration with the main flowlines of LS17-2 Gas field which consists of two piggable flowline loops, one at the east with 3 manifolds and 7 subsea wells and one at the west with two manifolds and 4 subsea wells. The flowline loops transport the well fluids to a SEMI through dedicated Steel Catenary Risers (SCR). The objective of the steady state flow assurance study was to present the operating envelope over the life of the field and address flow assurance issues such as hydrate, liquid management, erosion and corrosion. The steady state analysis was performed in OLGA for selected production forecast years to cover early, mid and late field life.

Dubai Petroleum Est -Khubai to Margham Plant Pipeline Steady State & Transient FA Analysis

The study was done to estimate the liquid management philosophy during normal and transient operations and study the risk of hydrate formation during steady state, shutdown and depressurization operations. Performed Steady state and Transient simulations; turn down, ramp up, shutdown, restart, depressurization & Pigging operations using OLGA. Various scenarios and engineering operations explored to optimize pigging frequency for the pipeline. Liquid surge analysis was carried out for optimum operation of slug catcher.

ADNOC Onshore Corrosion Study, Abu Dhabi

The study was done to benchmark potential for historic corrosion in 170 pipelines selected by ADNOC Onshore and develop a system of integrity management which shall mitigate against corrosion in future operations. Thermal-hydraulic modelling was performed for 21 flowlines from 5 fields (Asab, Sahil, Shah, Bu Hasa and BAB) which best represented the 170 lines, using PIPESIM, to identify the corrosion risk areas by matching the historical operating conditions of pipelines to obtain system parameters (such as fluid flow

regimes, fluid velocities and in-situ water drop out). These parameters were passed to integrity assessment to identify the potential corrosion risk to the pipeline throughout its operational life.

Assessment of Impact of Increase in Well Flowing Temperatures on Existing Oil Pipelines in Umm Shaif and Zakum Fields, Iraq

Performed steady state simulations for each of the 118 pipelines of the existing Umm Shaif and Zakum oil field, based on the wells production profile and the calculated pipeline inlet temperature to generate the Maximum steady state operating temperature profile. Based on the former's results transient simulations were performed for worst cases to generate the transient temperature profiles during pipeline shutdown and startup cycles.

Flow Assurance Support for Basrah Natural Gas Liquid Pipelines

Involved as a project team member responsible for performing steady state simulations for the Broadcut line (79.5 km), Import (13.7 km) and Export (10.2 km) gas lines using PIPESIM for various scenarios, post processing of results to evaluate the critical parameters pertaining to Line sizing.

RasGas NFPS Project QG1 Looping Project (McDermott/RasGas)

Involved in post processing the steady state and transient study results for the subsea pipelines which was required to estimate the hydrate requirements and liquid surge volumes during ramp –up and pigging operations.

ADNOC, WGAD Jebel Dhanna Three Pipeline Corrosion Assessment, Abu Dhabi

Worked as part of the WGAD Jebel Dhanna Three Pipeline Corrosion Assessment Project, in presenting the Steady State simulation analysis using OLGA, for the Main Oil Lines (MOL 1.2, 3.4, 3.5 and 4.2) to provide the critical parameters required for assessing the corrosion in the pipelines.

Professional History

- Wood (February 2018 – Present)
- Shasun Pharmaceuticals Ltd. (2013 – 2014)
- Nalco Water India Ltd (ECOLAB) (2010 – 2013)