

# Rajeev Kumar Shishodia

C.Eng., PMP®, NEBOSH-PSM

**Principal Operations Engineer: OCI**  
**Global, The Netherlands**

Offering over 26 years of enriched experience in Ammonia, Nitric Acid, Aniline, Formalin, Nitrobenzene, Offsite & Utilities, Co-Generation & Steam Boilers (CPP), Oil & Gas Plant's Commissioning, Start-up, Routine Operations, Troubleshooting, Projects Management, TAR & Maintenance Activities Lead Coordination, Catalysts & Precious Metals Inventory Management, Organization Discipline & EHS Management, SME in Dow/DuPont's Process Safety Management systems



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## Present Location

Maastricht (Limburg), The Netherlands

**"Scaling new heights of success with hard work & dedication, leaving a mark of excellence on each step; targeting for senior level assignments in a Managerial or Professional role with a leading organization of repute"**



## PROFILE SUMMARY

- Skilled in managing diverse range of Chemical Plant Operations & Maintenance such as execution of Strategic Plans, Maintenance & TAR Coordination, Process Control, Cost Management, PSM & SAP ERP Implementation, Quality Assurance to ensure organizational profitability
- Expertise in Global EH&S standards, Quality and Dow/DuPont's EHS & PSM methodologies like RC/PHA, PSSR, LOPA, LPP, SSIS & HAZOP etc.
- Proven track record of implementing cost saving measures to achieve substantial reduction in terms of production, raw materials, manpower and asset utilization
- Enterprising leader with a strong record of contributions streamlining catalysts logistics operations, Precious Metals management, heightened productivity and enhanced internal control through successful implementation of SOP, ODMS & MWP management systems
- Excellence in driving the successful roll-out of plant operations with answerability of defining scope, analyzing requirements, prioritizing tasks, identifying dependencies and evaluating risks & issues as per safety norms
- Directing plant activities with answerability for strategic utilization of available resources & machinery; implementing cost saving measures to achieve reduction in terms of man-days & production cost. Catalyst & Precious Metals management for Nitric acid, Aniline & Formalin plants.
- Experience in managing production activities involving resource planning, In-process inspections (PPM) & Coordination with internal & external departments for timely delivery of finished products
- Versatile, high-energy professional, successful in achieving business growth objectives following organization's in-place BSC.

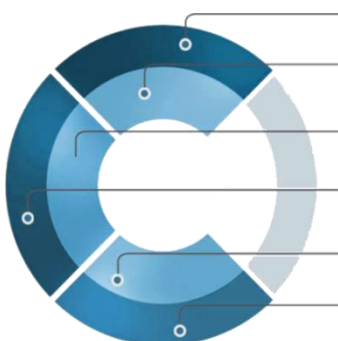


## CORE COMPETENCIES

- |                                   |  |                                 |
|-----------------------------------|--|---------------------------------|
| Plant Operations Management       | Operational Projects Management                              | Cost Optimization & Budgeting   |
| Major TAR & Shutdown Management   | Continuous Process Improvement                               | QMS & Process Safety Management |
| Maintenance/Activity Coordination | EHS & Other Statutory Compliance                             | Resource Planning & Utilization |
| OEM & Process Licensors Liaising  | Procurement Coordination & Catalyst Contracts Administration |                                 |



## SOFT SKILLS



Change Agent & Team player

Collaborator & Negotiator

Communicator & Networking

Adaptability to dynamic changes

Coordination, Planning & Scheduling

Problem Solving & Empathy



## EDUCATION



**BS in Chemical Engineering** from Birla Institute of Technology & Science, Pilani, India

**MS in Organic Chemistry** from Agra University, India

**MBA (PGDBM)** - Honors from Brilliant School of Management, Chennai, India

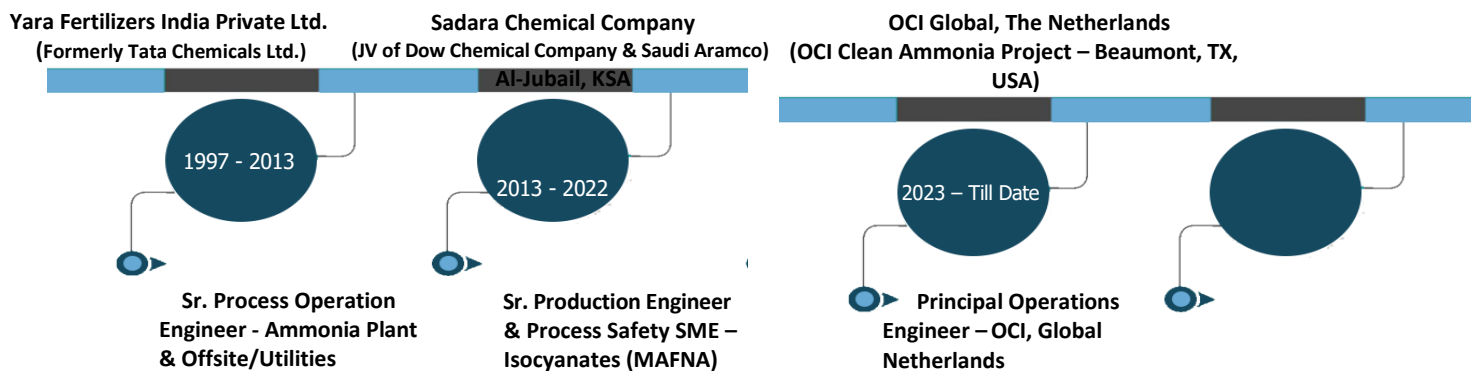
**Diploma in Industrial Safety** from National Institute of Labor Education & Management, Chennai, India

**Project Management Professional (PMP)®**

**HSE Certificate in Process Safety Management** – NEBOSH, UK



## CAREER TIMELINE



## PROFESSIONAL AFFILIATION

- ▶ Lifetime Engineer Membership - **Indian Institute of Chemical Engineers (IICChE)**, Kolkata, India
- ▶ Corporate Engineer Membership - **Institution of Engineers of India (IEI)**, Kolkata, India
- ▶ Professional Accreditation Membership Certificate - **Saudi Council of Engineers (SCE)**, KSA
- ▶ Lifetime Corporate Membership - **International Technology and Engineering Educators Association (ITEEA)**
- ▶ Lifetime Engineer Membership - **International Association of Engineers (IAENG)**
- ▶ Lifetime Engineer Membership - **European Federation of Chemical Engineering (EFCE)**



## WORK EXPERIENCE

**January 2023 – Till Date: Principal Operations Engineer at OCI Global, The Netherlands (assigned to OCI, Global Clean Ammonia Project (OCICA) – Beaumont, Texas, USA)**

### Key Result Areas:

- Active partaking in Technical Bid Evaluations for various vendors, OEM & technology licensors for OCICA's ISBL & OSBL plant facilities.
- Reviewing & remarking on various technical documents for different vendors & OEM received thru' Procure portal from EP contractor Maire Tecnimont, Milan i.e., P&ID/PFDs, Plant Layouts, Equipment Specifications, Cause & Effect matrix, Sequence of Operations, Materials & Energy Balance Sheets, Safeguard & Interlocks etc. & providing inputs on Opportunities for Improvement & ensuring that subsequent corrections are imminent revised version of documents.
- Performed thorough technical assessment on OCICA project's safeguards & interlocks having those benchmarked & compared with other OCI plants, EH&S/PSM standards & other conventional RAGAGEP practices in-place.
- Involved in formulating consolidated PSM's PSI (Process Safety Information) library for OCICA project including all the ISBL & OSBL facilities
- Accomplished a rigorous safety assessment on Ammonia Synthesis unit Start-up heater's existing design & proposed noteworthy recommendations to improve & upgrade Safety Interlocks / BMS (Burner Management System) to ensure reliable & safe operations.
- Participating & leading various engineering phase HAZOP sessions for different sub-process systems with EP contractor Maire Tecnimont, Milan
- Preparing and reviewing engineering specifications, supplier's SOW (scope of work) and other related documents.
- Performing thorough assessment to ensure comprehensive obligatory compliance to applicable PTO (permit to operate) & EPO agreements
- Participating in technical review of various engineering documents related to process subjects.
- Participating & providing comments for improvements on plant's 3D model review at various development phases of project.
- Developing commissioning plans: Collaborating with project team, process engineers & other stakeholders to develop comprehensive commissioning plans that outline the necessary steps, resources & timelines for system commissioning.
- Working with EH&S team to ensure compliance with safety and regulatory requirements: Adhere to safety protocols and regulatory guidelines during the commissioning process. Identifying & mitigating potential safety hazards or risks associated with system operations.
- Continuous improvement: Identify opportunities for process improvement, system optimization, and cost reduction throughout the commissioning process & subsequent normal operations. Propose and implement effective strategies to enhance efficiency and effectiveness.
- Provide technical support and guidance, assisting operations teams by providing technical support & guidance on system operations/troubleshooting procedures.
- Conducting assessment & verification of critical requirements, functionality of various process systems, such as Process Equipment's etc. to ensure they meet project requirements and conventional industrial standards.
- Working with EP contractor Maire Tecnimont, Milan to ensure systematic closure of various HAZAOP action items in timely manner.
- Occupied in coordination with EP contractor Maire Tecnimont, Milan to timely process & execute various CVRs (Company Variance Requests)
- Involved & supporting in developing various operations SOPs & checklists related to plant commissioning & used in day-to-day operations.
- Providing assistance to leadership team engaged in performing cold-eye review of OCICA project at various stages by consolidating & centralizing the required documents as needed.

**October 2013 – December 2022: Sr. Production Engineer at Sadara Chemical Company (JV of Dow Chemical Company & Saudi Aramco), Al-Jubail, KSA**

**Growth Path:**



**Key Result Areas:**

As Sr. Production Engineer, I had opportunity to spearhead four Isocyanate's precursor chemical plants holistic Operations, Quality Assurance, Maintenance Coordination, TAR & thorough implementation of Dow/DuPont's Process Safety Management systems:

- **Nitric Acid Plant:** Active partaking & unit lead had held obligations for pre-commissioning, commissioning, start-up & responsibility for routine operations & troubleshooting of 1200 MTPD (dry basis) unit licensed by Espindesa (a subsidiary of Técnicas Reunidas, S.A)
  - **Aniline Plant:** Active partaking & unit lead had held obligations for pre-commissioning, commissioning, start-up & responsibility routine operations & troubleshooting of 935 MTPD unit licensed by KBR (Dow/DuPont Technology)
  - **Formalin Plant:** Active partaking & unit lead had held obligations for pre-commissioning, commissioning, start-up & responsibility for routine operations & troubleshooting of 495 MTPD unit licensed by Johnson Matthey, Sweden (formerly Perstorp)
  - **Mono-Nitrobenzene Plant:** Active partaking & unit lead had held obligations for pre-commissioning, commissioning, start-up & responsibility for operations & troubleshooting of 1248 MTPD unit licensed by NORAM Engineering and Constructors Ltd., Canada
- Thorough understanding of all aspects of production activities in manufacturing units with updated knowledge of latest technological advancements, regulations/ guidelines and statutory compliances in the industry.
  - Establishing targets for the team to match corporate goals, short & long-term budgets and developing business plans for the achievement of goals
  - Monitoring / tracking projects with respect to budgeted cost, demand forecasts, time overruns to ensure timely execution of projects
  - Minimizing performance bottlenecks for achieving high productivity with minimum consumption of material & machine
  - Developing and implementing measures for energy conservation, identifying opportunities, analyzing data, conducting tests, cost management, drive sustainability initiatives and post audits operations
  - Interacting with customers for understanding their technical requirements, product application and coordinating with the internal departments to improve product quality and reliability
  - Developing metrics, improving processes, product and services through process improvement and change initiatives
  - Steering committees, task forces and contributing to the business strategic planning process while establishing customer services support models
  - Ascertaining maximum asset utilization, smooth functioning of operating units, resource optimization, profit maximization
  - Managing plant with particular focus on EH&S/PSM, Quality, Productivity, Cost and Delivery Performance Targets and ensures that regulations regarding Labor Law, quality and environmental issues are met all times
  - Checking treated effluent parameters, analyzing deviations, C&P actions; reviewing safety audit reports and ensuring compliance to EHS norms
  - Thorough understanding of all applicable process technology, equipment and control technology. Working with Technical Advisors & operate plant personnel to optimize operations to meet Business and plant goals. (EH&S, Production, cost, quality, energy, reliability).
  - Managing catalyst procurement transactions & site inventories with various catalyst suppliers like Johnson Matthey, UK, Evonik Industries, Germany & Johnson Matthey (formerly Perstorp), Sweden
  - Managing reclaimed PGM group precious metal accounts with catalyst refining agencies & leading technical discussions with process licensors
  - Participating in advanced trouble shooting and coaches others to learn these skills. Ensures findings are documented in Plant OD for future usage.
  - Ensuring Operating Discipline / ODMS requirements are met & implementing best practices in order to optimize operations.
  - Working with Plant Process Control Coordination Role to ensure process control is optimized in the facility.
  - Supporting plant roles in procedure usage, creation, reviews, updates & approvals when assigned.
  - Performs appropriate Manage Production roles as determined by Plant / Envelope / Site. Example: Technical Advising, Production Coordinating, Operate Plant Work Process Leader, ODMS element point, Production Data Analyzing & Manufacturing Representative for various operational projects coordination & execution in field.

**February 1997 – September 2013: Sr. Process Operation Engineer at Yara Fertilizers India Pvt. Ltd., Fertilizer Complex, India**

**Key Result Areas:** As Senior Operation Engineer, I had rigorous experience in Operations/Troubleshooting & managing Maintenance/Shut-down activities for Ammonia / O&U plant facilities including Field, DCS In-Charge & as a Shift Supervisor. Plant was low energy **Haldor Topsoe** technology with an option for mixed feed (Natural Gas+ Naphtha) in any ratio. Later DCS was upgraded with integrated Advance Process Control technology (APC) supplied by Honeywell for superior & predictive controlling of critical process parameters as an energy optimization initiative.

By design, plant's original ammonia production capacity was 1350 MT/day but in the year 2008, it was augmented to 2000 MT/day through a mega Debottlenecking Project including various equipment retrofits. Ammonia/ O&U plants consists of following process units:

**AMMONIA PLANT OPERATIONS:**

**Natural Gas Skid & Distribution System**, Naphtha Pre De-Sulphurization Unit (**NPDU**), **Adiabatic Pre-reforming** section, Natural Gas / Naphtha **Hydro-desulphurization** unit (**Feed Gas Sweetening**), Natural Draft Fired Heater for feed preheating, Side fired **Tubular Steam Reforming** section, Waste Heat Recovery Section, **Auto Thermal Reforming (ATR)**, Synthesis gas purification (**CO shift conversion - MTSC & LTSC**), **GV** process for Carbon Dioxide Removal, **Methanation**, **Ammonia Synthesis & Refrigeration** Section, Central **Compressor House** Area - Synthesis Gas Compressor, Process Air Compressor, Ammonia Refrigeration Compressor, **Flash Ammonia compressor**, NG **Booster Compressor**, **Ammonia & Cryogenic Purge Gas Recovery (PGRU)** Unit, **Process Condensate Stripping** Unit, Steam **PRDS** section & **BFW** preparation area, **Vapor Absorption Machines** (chillers) for synthesis gas cooling.

## OFFSITE & UTILITIES UNIT OPERATIONS:

- **Distributed Control System (Centralized):** Operations & troubleshooting of Ammonia/O&U plants through DCS - TDC 3000 (Release 530) by TATA Honeywell including ESDS/FSC
- **Captive Power & Steam Generation Plant:** Mark-VI, Frame-5 Gas Turbines (2x25 MW) by Thomassen, Holland including HRSGs (2x100 TPH). Operation of dual fuel (NG & naphtha) fired Steam Boiler (Thermax Bibcock & Wilcox) holding a capacity of 110 TPH of HP steam generation.
- **Water De-mineralization Process & Raw Water Distribution:** 800 M3/Hr. capacity DM plant equipped with anion & cation exchangers, mixed bed units, activated carbon filters & effluent neutralization section.
- **Compressed Air Generation & Dehumidification process:** Managed two multistage centrifugal air compressors by Ingersoll-Rand, Germany & One double acting reciprocating air compressor (stand-by) along with air dehumidification adsorbers.
- **Cryogenic Air Separation Plant:** Operations of cryogenic nitrogen separation process unit having two cryogenic liquid storage tanks, distribution & loading/ unloading section.
- **Effluent Treatment Plant & Waste Oil Recovery Section:** Operation of two ammonia strippers. Controls of waste lube oil recovery unit & rainwater harvesting pond.
- **Ammonia Gas Refrigeration, Storage & Distribution:** Handling & Storage of liquid ammonia; (2 X 5000 MT) well equipped with vapor reliquification units facilitated by screw compressors by Alfa Label. Distribution & loading / unloading of liquid ammonia from road or railway tankers.
- **Flare Stack Systems:** Operation & Emergency handling of main flare stack (reformer & synthesis gas blow down) & ammonia storage flare stack systems.
- **Cooling Towers (Urea & Ammonia):** Operation & troubleshooting of two open recirculatory, cross flow induced draft cooling towers & two counter flow glass reinforced polymer made cooling towers commissioned by Marley Cooling Towers with cooling water supply pumps.
- **Naphtha Bulk Storage & Handling System:** Storage & handling of naphtha storage tanks (3X6300 KL) naphtha distribution system equipped with submersible barrel pumps including unloading from railway tankers.
- **Handling, storage & distribution** of Chlorine Gas, Sulphuric & Hydrochloric Acid, Cooling Water Treatment Chemicals & Operation of Chlorine-Di-Oxide Generation unit.

## ADDITIONAL ROLES & ASSIGNMENTS:

- **Operations Turnaround Coordinator (Planned Pit-Stops & Major ATR):** responsibilities comprise but not limited to operations representation for job scoping, planning, scheduling and execution of all phases including - scope development, general and detailed planning and scheduling, pre-work, equipment clearing, shutdown activities and return to operations.
- **Process Safety Focal Point (Dow/DuPont's certified PSM-SME):** responsibilities comprise but not limited to providing Process Safety advice on facility changes and projects and brings in the in-depth consulting advice from the Process Safety and Technology Centers as appropriate. Participating in & helps in preparing for the Process Safety reviews for the facility and capital projects. Coordinates the review of Process Safety related MOCs and compliance deferrals. Owns and maintains evergreen process safety documentation (i.e., RC/PHA, PSSR, LOPA, LPP, RA, JSA, Relief Design, SSIS, HACD, CEI/FEI etc.). Serves as a facility resource for Process Safety related self-assessments, PSM / EH&S audits, and LOPA re-validations. Serving as Facility Focal Point for the operational aspects of the Safety Instrumented Systems Lifecycle according to SIS Work Process, Instrument Integrity Manual and Mechanical Integrity. Working with the Production and Improvement teams to gain resources and support for making changes that will close any identified gaps.
- **Lead Activity Coordinator & Maintenance Gatekeeper:** responsibilities comprise but not limited to work with plant personnel and expertise centers to coordinate, prioritize and schedule plant activities. This also encompasses the role of Gate Keeper provides a resource with plant knowledge and experience to coordinate the Master Task List, ensure the activities create value and are scheduled in a safe and optimal manner. Assessment of immediate urgency for action in response to a maintenance problem or event that has been observed, identifies the cause of the problem, develops the scope of the work order, creates the work request and sends for approval to the Maintenance Gatekeeper. Responsibility for site EH&S task focal point involves implementation, training/coaching on repetitive Compliance Task process and Compliance Task Tool (CTT) for day staff & shift crews. Ensures that the MOC process is appropriately triggered for changes, including those from maintenance work orders, small projects, etc. Ensures that MOCs are regularly monitored, and progress communicated, including ensuring that temporary MOC requirements are met.

## PROJECTS & ACCOMPLISHMENTS:

- Operations Project Engineer for Debottlenecking Project at Urea Fertilizer complex. Capacity augmentation project comprises of fabrication, erection, pre-commissioning & commissioning, test runs for a variety of major process equipment like vapor absorption machines (chillers), bulk flow coolers, heat exchangers, compressor & pumps, fired heaters, GRP made cooling towers, water demineralization units, conveyor gantries
- Operations Man Rep for major mechanical rehabilitation works of S50 Ammonia Synthesis Converter executed to re-weld the leaky site weld joint
- Operations Manufacturing Representative cum Project Engineer assigned to coordinate with THYSSEN KRUPP UHDE managing major de-commissioning & re-commissioning activities for atmospheric ammonia storage tanks (2X5000 MT)
- Project Engineer for complete rehabilitation of refractory works at Primary & Secondary Reformers in ammonia plant & service boiler in CPP executed by Plibrico BV, The Netherlands
- Assignment in Total Quality Management (TQM) cell in instituting major cost of quality elements & establishing systematic 5S System approach across all the departments.
- Involved with Civil Construction Cell as a Quality Control Engineer in Earth Preparation Works including 10-meter-deep; 30000 nos. of Stone Column Installation by Vibro-Flotation method. Supervision of civil construction activities like heavy duty rotary & static machines foundations, construction of Water Retaining Structure for Cooling Towers, Injection Grouting works, RCC Core Cutting, Acid Proof Brick Lining Works etc.
- Functioning with Fire & Safety (HSE) cell as Unit Facilitator for a project commenced to analyze the existing safety standards of the company as compared to OSHA's HSE & PSM standards: Workplace Safety Standards (29.CFR.1910). Includes, gap analysis & accordingly preparation of various SOP's, work instructions, check lists.
- Operations Manufacturing Representative to streamline & execute the pH neutralization skid CAPEX project for Formalin plant at Sadara Chemical Company, KSA.



## COURSES, TRAINING & CERTIFICATIONS

- **Chartered Engineer (CEng)** - Institution of Engineers of India (IEI), Kolkata
- **Project Management Professional (PMP)®** by Project Management Institute, USA
- COSHH Manager & Risk Assessor Certification™ by Sevron Safety Solutions & The Knights of Safety Academy
- Certificate of Membership - Institute for Engineering Research and Publication (IFERP)
- On the job training (OJT) in Nitric Acid, MNB & Aniline Plants - Dow Chemical Company, Bohlen Works, Germany
- Certified Integrated Management Systems Auditor - CII-ITC Centre of Excellence for Sustainable Development
- Qualified First Aider by St. John's Ambulance, U.K & Hazard Communication (HazCom) & Risk Assessment training by Ensafé Technologies
- Dow's Life Critical Standards (LCS), Organization Discipline Management Systems (ODMS) & Maintenance Work Process (SMWP) training
- Layers of Protection Analysis (LOPA) & Loss Prevention Principles (LPP) training by Dow Chemical Company, Bohlen Works, Germany
- Reactive Chemicals & Process Hazard Analysis (RCPHA) training by Dow Chemical Company, Bohlen Works, Germany
- Apollo Root Cause Analysis (Reality Charting) by ARMS Reliability, USA & AspenTech by Aspen Technology, USA



## PERSONAL DETAILS

**Date of Birth:** 10<sup>th</sup> January 1978

**Permanent Address:** Flat No: 150/2, Royal Homes Township, Tala Nagri, Harduaganj, Aligarh-202001, Uttar Pradesh, India

**Languages Known:** Professional communication skills (oral, reading & writing) in **English, Hindi** & elementary **Arabic** language skills

**Willing to relocate:** Anywhere worldwide (Present Employer's Notice Period – Minimum one month)