Binoy Chacko
Mail: binoychacko2006@gmail.com
Mob: 8128687056 / 9601256922

Senior Manager-
Instrument & Control Reliability Engineer

Dedicated & resourceful professional with more than **10.5 years** in-depth experience in **Reliability Centered Maintenance & Commissioning of** Instrumentation & Control Systems in **Refinery and Petrochemicals Complex- Reliance Industries Limited-Jamnagar.**

KEY SKILLS

Reliability Centered Maintenance
RCA/FMEA
SAP- EAM, PM, MM, Inventory
Meridium
Life Cycle Plan- Obsolescence
FAT/SAT, Commissioning
Control Valves
Field Instrumentation
Analyzers
Wireless HART
Control System- DCS/PLC
ESD- SIF Proof Test
PHA/ HAZOP

EDUCATIONAL DETAILS

B-TECH (INSTRUMENTATION

ENGINEERING); 2004-2008

HSE: 2003-2004

SSC: 2002

PERSONAL DETAILS

Date of Birth : 28 June 1986
Nationality : India
Gender : Male
Marital Status : Married
Languages : English, Hindi, Gujarati & Malayalam.

PROFILE

- Effective support for flawless manufacturing & normal operation through provision of instrumentation reliability focused on planning & execution of maintenance activities based on Reliability Maintenance Techniques.
- Carry out troubleshooting for major & critical failures.
- **Root Cause Analysis & Failure Mode and effects Analysis & liquidation of recommendation & Learning's.**
- **Analyse obsolescence based on life cycle plan & execute implementation of asset renewal plan.**
- Responsible for the Planning, Scheduling and Execution of maintenance, erection & commissioning activities of various, field instruments, Analyzers & Control systems.
- **Development and implementation of instrumentation Best Maintenance strategies, Procedures, Task List.**
- Reviewing all type of Engineering documents like field design specification, schematic, GA, Wiring Drawings, location plan, cable schedule, datasheet, Power & Utility Calculation, Lag time calculation, cause & effect chart, BMTO finalization, BOM, vendor offer evaluation.
- **Carry out Factory acceptance test, Inspection, Construction- Erection support, Commissioning & SAT of various instruments related to Green field, Brown Field & Up gradation Projects.**
- Participation in major shutdown & turnaround planning & execution activities.
- Establishing, Monitor & the execution of preventive, corrective & predictive maintenance program & activities.
- **Responsible to identify spares codification, inventory management, procurement coordination and inspection of the new spares.**
- **Use of latest automation tools & software for early event detection, advance diagnosis & online condition monitoring techniques.**
- Control Vale Engineering, sizing & selection.
- Budgeting and cost monitoring.

Major Projects Handled & Executed:

- **CEMS-Analyzer Project Execution Total Scope (50 Heater Stack- 100 Analyzers, Digital Online Communication to CPCB**

- Involved in review and preparation of detailed engineering documents such as field design specification, schematic, GA, Wiring Drawings, location plan, cable schedule, datasheet, Power & Utility Calculation Lag time calculation cause & effect chart, BMTO finalization, BOM, vendor offer evaluation, specification & sub equipment make & model finalization for reliable and stable operation.
- **Carried out FAT, SAT, installation & commissioning of all the systems.**
- **Engineering & Commissioning done for separate Digital Modbus Communication Network using (RS-485 & Fiber Optic network) for centralized real time data transmission to CPCB**.
- Being a fast track legal project, it was executed in short tenure of 4-5 months.

- **Flawless Commissioning of Process Critical Gas Chromatograph- 26 nos. Online Analyser & House for HPIB Plant.**

- Involved in erection, Sample Handling modification for reliability improvement and stable operation.
- **Adequacy check of all SHS components and its internals based on process stream composition & operating parameters.**
- Carried out GC calibration, validation, and repeatability & stability checks.

- **Pioneered Wireless HART Infrastructure Network Creation for all plants in Refinery Complex**

- Established Wireless HART Infrastructure-Emerson make for process monitoring, flare control valve & PSV passing detection, isolation valve position monitoring and less critical system monitoring
- **Use of Wireless infrastructure in reliability improvement, maintenance and integrity management as well as safety and other operational initiatives.**
- Wireless infrastructure creation & Sparing field cable & DCS IO card which can be used for future revamp projects.

- **Control Valve & Field Instruments - Aromatics, Crude Plant Revamp & VMP projects Engineering, Sizing & Selection, Procurement, Commissioning**

- Involved in review and preparation of detailed engineering documents such as datasheet, control valve sizing & selection.
- Adequacy check for existing control valve and field instrumentation.
- Vendor Offer evaluation, specification finalization,
- Spare & material procurement for in-adequate instruments.
- Installation, Process Hookup, SAT of new instruments with existing running system & control system.

- **ESD Control Valve PST Installation & Pneumatic control scheme up gradation.**

- Implementation of Partial Stroke Test for critical ESD Valves based on Safety Integrity study.
- Obsolescence & up gradation to smart Digital postioner and valve accessories.
- Engineering & Commissioning of ESD Valve Partial Stroke Test (Emerson DVC).
- Replacement of inadequate actuators & its internal for critical ESD valves based on failure analysis.

- **Reliability Improvement activity**

- Based on failure analysis implemented use of High temperature and superior MOC elastomer and internals for Postioner, Actuator facing high temperature.
- Remote Mounted postioner for control valve suspected to vibration & wireless position monitoring for isolation valves.
- Metallurgy Up gradation for field instruments facing frequent repetitive failure due to change in process media, parameter.
- Use of latest automation tools & advance diagnostic software for early event detection, diagnosis & troubleshooting.
- Use of Different Techniques & Principle for Critical Process Measurement.

WORK EXPERIENCE

Sr. INSTRUMENT & CONTROL RELAIBILITY ENGINEER - RELIANCE INDUSTRIES LTD.
Jamnagar, India, from ▪ July 2008 onwards

- Accountable for reliability, troubleshooting & maintenance activity various field instruments, analyzers and control system.
- Improve reliability through continuous improvement techniques/ up-gradation/projects.
- Carry out troubleshooting and support for major critical and frequent failure.
- Implementation of advance diagnosis & online monitoring techniques for reliability improvement.
- **Proactively identifying areas of obstruction/ breakdowns and take steps to rectify the equipments through application of troubleshooting tools like Root Cause Analysis (RCA), & Failure Mode and Effects Analysis (FMEA) study.**
- Participating in reliability & integrity study.
- **FAT, SAT, Commissioning and troubleshooting of various field instrumentation, Analyser, Control Valve.**
- Implement group guidelines, LFI, reliability shared lesson, Engineering Technical Procedure.
- Preparing Daily report, Weekly PM status report, Monthly report, PPR/KRA data, Failure reports, Modification & Reliability issue.
- Maintain Instrumentation Test & Calibration standard instruments.
- Preparation of Spare Part Interchangeability Report for various field instruments.
- Spares management and Overhauling of various make Control valves, Field instruments, Analysers.
- PR/PO generation, BOM linking with equipment, PM schedule review, PSM identification, Material planning & Inventory control through SAP System, MRP Review by analyzing the stock level and rate of consumption.
- Preparation of SMP, SOP, Risk Assessment sheet and other IMS related documents.
- Follow and enforce applicable HSEF procedures/practices.
- **Carrying out SIF Proof testing for all ESD & critical instruments during shutdown.**
- Partial Stroke Testing (PST) commissioning, configuration of ON-OFF valves, checking of PST through valve link software & hand held terminal.
- Obsolescence management: Establish long-term obsolescence program. Optimizing hardware among plants. Initiate and plan to upgrade instrument systems before obsolescence and deteriorations beyond repair. Phased manner up gradation.
- **Ensure reliability and learning s are implemented for MOC (Management of Change) and participation in PHA study.**
- Ensure compliance of engineering practices and assets with statutory obligations, Engineering Codes of Practices and standards.
- Manpower Management, Manage contractor safety.
- Competency development & Training for Contractors and new joiners, other discipline engineers.
- Review bid analyses and make recommendations of various vendors.
- Coordinate Original equipment Manufacturer, service providers and suppliers, in order to develop and execute maintenance activities in the area.
- Seek improvement in techniques, procedures and technology to improve reliability at minimum costs and within budget.
- Plan and execute plant changes and minor projects meeting HSE requirements, budget and schedule targets.

Learning & Knowledge Sharing

- Certified Trainer for Emerson- Advance Control Valve Diagnostic & Valve Reliability Centered Maintenance for all sites of RIL.
- SAP End & Power User Training.
- Development & Usage of SCADA.
- IM -Root Cause Analysis through APM-Meridium portal.
- ABB Gas Chromatograph – Configuration & Maintenance.
- ABB- CEMS Analyser.
- Process Safety Management & Operating Management System Workshop.
- Conducting Mechanical Integrity & Quality Assurance Workshop.
- Establish Test & Calibration set up for Maintenance, Troubleshooting & Competency Development.