

## Essential Job Functions

- Develops and/or reviews fixed equipment repair plans, rerates and modifications, including calculations and drawings
- Performs Level 1 and 2 Fitness for Service per API 579
- Provides engineering support to maintenance organization executing repairs or improvements in Fixed Equipment
- Provides engineering support to API Inspectors reviewing inspection plans and inspection reports on Fixed Equipment
- Provides recommendations based on inspection findings
- Provides input in developing Annual Maintenance and Turn Around work lists
- Participates in long term reliability and risk based life assessments for fixed equipment
- Ensures that all technical recommendations follow industry accepted sound engineering practices and are in accordance with industry best practices
- Identifies and implements strategies to improve safety, asset reliability and overall asset effectiveness
- Develops engineering solutions to repetitive failures and all other problems that adversely affect plant operations such as, capacity, quality, cost or regulatory compliance issues using techniques including:
  - o Statistical Process Control
  - o Reliability modeling and prediction
  - o Six Sigma (6 $\sigma$ ) Methodology
  - o Mechanical Integrity (MI)
  - o Root-Cause Failure Analysis (RCFA)
  - o Reliability Centered Maintenance (RCM)
  - o Failure Reporting, Analysis and Corrective Action (FMEA)
    - Collaborates with Operations, Maintenance and Technical groups, identifies and corrects bad actors, drives root cause failure analysis (RCFA), implements corrective actions
    - Leads Root Cause Failure Analysis (RCFA) efforts, develops corrective actions and track results
    - Responsible for performing Failure Mode and Effects Analysis (FMEA) on facility assets, predicting potential failure modes, prioritizing by risk, develop plans to reduce the likelihood of failure according to risk ranking
    - Accountable for creating and optimizing PM's, validate PM frequencies, and required time needed to complete PM work, with assistance from the appropriate personnel (i.e. Planners, Craft Supervisors, etc.)
    - Practices effective utilization of predictive and other non-destructive testing methodologies designed to identify and isolate inherent reliability problems
    - Participates in the final check out of new installations including factory and site acceptance testing assuring adherence to functional specifications.
    - Reviews equipment specifications; designs changes as required
    - Monitors conditions and performance of critical equipment; recommends maintenance work required for optimum performance
    - Assists with budget preparations for Maintenance department
    - Identifies and implements reliability and plant improvement projects; oversees activities such as estimation, engineering, vendor data review, inspection, and commissioning for projects
    - Ensures maintenance and engineering work carried out complies with engineering standards and corporate quality policies and procedures
    - Develops and maintains maintenance processes and procedures and plant performance reporting and monitoring systems
    - Assists and reviews spare part requirements; ensures proper stocking of critical parts
    - Abides by all safety procedures and practices applicable to location and position; participates in appropriate safety training; demonstrates commitment to and support of EHSS principles and values; champions safety
    - Performs other duties assigned by management that generally fall within the expected scope of this position

## Experience Requirement

- One to three years' previous experience as a mechanical engineer in petrochemical or refining industry

- Manufacturing site experience preferred
- Strong interpersonal, leadership and organizational skills
- Knowledge of applicable codes and standards (ASME Sec VIII, B31.3, API 510, 570, 579)
- Familiarity with fixed equipment design software (Caesar II, PV Elite, Compress, Sage+)
- Basic knowledge of metallurgy and corrosion associated with refinery/petrochemical process
- Strong written and verbal communication skills
- Ability to adapt to tight deadlines, heavy workloads and frequent changes in priorities
- Proven preventive maintenance knowledge and experience, especially in industrial environment
- Ability to use SAP maintenance program and/or other maintenance databases
- Broad knowledge of regulatory codes and legal requirements applicable to chemical plants
- Analytical skills; statistical training and demonstrated application experience
- In-depth knowledge of risk assessment tools including; training in root cause analysis and other critical analysis tools such as Six Sigma
- Knowledge of Maintenance and Reliability best practices required
- Process controls, PLC infrastructure and calibration systems experience a plus
- Ability to multi-task, prioritize, and follow through on assignments
- Good computer skills including Microsoft Office Suite; ability to use database systems and other programs and applications used by this position and at Company
- Fluent in English language including reading, writing and speaking; ability to read and write at a minimum of high school level; ability to clearly communicate to all levels in organization

### **Education Requirement**

- Bachelor's degree or above in Mechanical Engineering from ABET recognized university
- Six Sigma Green Belt or Six Sigma Black Belt training and/or certification a plus
- Certified Maintenance and Reliability Professional preferred

### **Work Environment**

This position requires an employee to be in an office environment, outside, and exposed to various chemicals and compounds, including fumes and smells, some of them hazardous. During construction, the employee will be required to work in a construction zone with various hazards normally experienced in these environments. The employee may enter confined spaces and work in elevated environments. Employee may experience range of temperatures from -10 degrees F to 100+ degrees F when outside. Employee must be able to wear PPE required by the location. General office noise may be experienced and louder sounds and vibrations when outside. The noise level in the work environment is usually moderate. All environments are safe with appropriate PPE.

### **Physical Demands**

While performing the duties of this job, the employee is regularly required to walk, including long distances, sit, stand, speak, and hear. The employee is required to stand for long periods of time, use hands to finger, handle, or feel; reach with hands and arms; the employee may be required to climb or balance, stoop, kneel, or crouch. The employee may be required to climb stairs and ladders/tanks up to 50' in height. The employee may be required to enter confined spaces. The employee may occasionally lift and/or move up to twenty (20) pounds. Specific vision abilities required by this job include close vision, peripheral vision, depth perception and ability to adjust focus. Employee may be required to travel by air, rail, bus, car, or other modes of land transportation.

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