## JOB DESCRIPTION

<table>
<thead>
<tr>
<th>POSITION:</th>
<th>JOB NO:</th>
<th>NEW</th>
<th>REVISED</th>
<th>DATE:</th>
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</thead>
<tbody>
<tr>
<td>Reliability Engineer</td>
<td>( )</td>
<td>(X)</td>
<td></td>
<td>04/05/12</td>
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<thead>
<tr>
<th>LOCATION:</th>
<th>IMMEDIATE SUPV. (TITLE):</th>
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<tbody>
<tr>
<td>BAY ST. LOUIS SITE</td>
<td>Maintenance Manager</td>
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<tr>
<th>DEPT. OR FUNCTION:</th>
<th>REVIEWING SUPV. (TITLE):</th>
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<tr>
<th>NAME OF INCUMBENT(S):</th>
<th>DESCRIPTION APPROVAL:</th>
<th>DATE:</th>
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<tr>
<td>(1)__________________</td>
<td>(2)</td>
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<tr>
<th>JOB WRITER:</th>
<th>DATE:</th>
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<tbody>
<tr>
<td>Raymond Hamburg</td>
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### EDUCATION/REQUIRED SKILLS:

The incumbent should have a degree in engineering. The Incumbent must have an outstanding mechanical aptitude and understanding of mechanical equipment and systems. Excellent communication skills are necessary. Excellent communications skills are necessary. Experience in reliability tools for preventative & predictive techniques is preferred.

### FUNCTION:

The primary focus of the position is to maximize reliability of site equipment and assets. This includes: Determining the Root Cause of site reliability issues & driving actions to prevent re-occurrence; Establishment, execution and ongoing improvement or preventative and predictive techniques; Working with operations personnel to insure understanding and proper operation of equipment. The incumbent will be measured for success in terms of improved production yield, zero downtime, environmental integrity, and ongoing productivity.

### NATURE AND SCOPE:

The incumbent reports to the Maintenance Manager.

The utmost responsibility of the Reliability Engineer is to insure that the impacted maintenance activities are carried out with the highest regard to environmental integrity and personnel safety.

The Reliability Engineer is responsible for growing the preventative and predictive maintenance process while constantly striving for 100% reliability / uptime of equipment & operating systems. Methods to attack this include utilizing the RCA methodology in determining root cause, contributing factors, & corrective actions. This technique will include preserving evidence, investigating failures, meeting with vendors / suppliers / contractors to identify & prevent failures, develop new techniques and methods, improving on existing practices, and expanding the knowledge of site personnel. The incumbent will be responsible for recommending solutions & institutionalizing the actions to correct & eliminate system reliability failures.
Monitor the performance of equipment with reporting of mean time between failure data & providing maintenance cost data are responsibilities of the incumbent while working closely with operations personnel to determine the priority for improving performance of equipment & systems. The Reliability Engineer will work closely with maintenance mechanics and operating technicians to improve knowledge, techniques, procedures, etc that adversely affect equipment or product reliability.

The Reliability Engineer will be the key technical resource to assist maintenance personnel with preventative & predictive maintenance systems such as vibration analysis, lubrication programs, oil analysis, laser alignment, ultrasonic, corrosion monitoring (non-destructive testing), thermography, motor current analysis, motor circuit evaluation, etc. The incumbent will be the primary site contact for maintenance mechanical integrity programs including pressure-coded vessels, etc.

The Reliability Engineer will be responsible to insure that the technical content of the Maintenance Procedures reflects the world-class practices for the Chemical Industry.

Work closely with project engineers or technical advisors to establish and enhance design standards that minimize life cycle costs and support high reliability are additional responsibilities.

The Reliability Engineer should constantly be looking for opportunities for reducing the dependency on maintenance personnel during times of normal operation. Training operators on troublesome equipment and identifying opportunities for Operator Performed Maintenance are expectations of the Reliability Engineer.

The Reliability Engineer will utilize many computer based systems such as the Computerized Maintenance Management System (EMPAC / SAP – Future), Root Cause Analysis Software (PROACT), Microsoft Software Programs (Outlook, Word, Excel, PowerPoint, etc.), and other industry standard software tools.

**PRINCIPLE ACCOUNTABILITIES:**

**PPM Assessments**

The Reliability Engineer will represent maintenance as the expert in the assessment & optimization of PPM’s. Often the incumbent will utilize maintenance personnel to obtain expert advice in the representation for PPM assessment & analysis. The Reliability Engineer will own the development & implementation of action plans from the PPM assessment.

**Root Cause Corrective Actions**
The Reliability Engineer is the site expert in the RCA methodology & the PROACT software. He / she will lead the assembly of a team, the Root Cause Analysis for the identified chronic & sporadic failure modes, determine causes, identify & document corrective actions, and institutionalize the improvement. This methodology includes preserving the event data, ‘ordering’ the analysis team, analyzing the data, communicating the finding & recommendations, and tracking the bottom line results. The Reliability Engineer will be intimately involved in the development and implementation of solutions for site reliability issues.

Reliability Centered Maintenance

The Reliability Engineer will support operations in the development of the RCM program & represent maintenance in the risk analysis of systems to determine the criticality. The incumbent will lead the implementation of updating the CMMS system to indicate the criticality ratings. He / she will assist in the implementation of actions from the RCM / risk analysis.

Mechanical Integrity

The Reliability Engineer will be the primary contact for maintenance mechanical integrity programs. During PSM, ISO, FM, & Regulatory audits the Reliability Engineer will be the primary contact for maintenance mechanical integrity coordinating the interviews and locating the supporting documentation.

Preventative & Predictive Maintenance Tools

The Reliability Engineer will be the key technical resource to assist maintenance personnel with preventative & predictive maintenance systems such as vibration analysis, lubrication programs, oil analysis, laser alignment, corrosion monitoring (non-destructive testing), thermography, motor current analysis, motor circuit evaluation, etc.

MINIMUM QUALIFICATIONS

1. Able to read, write, perform basic mathematics, competent with computer business software, provide clear / concise written & verbal communication

2. Able to work with and influence a diverse group from operations technicians & craftsperson’s to site & business management

3. Must be a self-starter with the capability to facilitate discussions

5. Function under time pressures

6. Drawing conclusions from written or computer generated materials

7. Creating methodologies for accomplishing a goal

8. Implementing recommendations by coordinating resources.

9. Directing and influencing activities of others to accomplish a goal

10. Analyzing data or report information

11. Conducting research
12. Developing plans, procedures, goals, strategies or processes based on data analysis or experience

**PHYSICAL REQUIREMENTS**

1. Able to work days (95%) or rotating shift (5%) with various scheduled hours.

2. Able to travel to other sites for training or research.

3. Sitting 75%, standing 25%, walking 25%, bending at waist 10-90 degrees for 5-10% during a work day (approximation).

4. Able to lift objects to 30 lbs., hold objects up to 30 lbs. with or without assistance for up to 30 seconds.

5. Able to carry objects up to 30 lbs from one level to another on a regular basis.

6. Able to climb stairs up to 130 steps 3 - 10 times a day.

7. Able to climb ladders up to 80’ with landings every 10’ 1 - 2 times a day.

8. Per day: reading (books, flow charts, diagrams, computer monitors) 75%, writing 25%, calculations 5%, and visualization (gauges, equipment, manuals, drawings, computer monitors) 95%.

9. Environmental: Office with uniform temperature 75%, outside subject to weather 25%, confined spaces <1%, outside air conditions varies.

10. Able to wear personal protective equipment as required.

11. Able to use a keyboard, telephone, two-way radio.

12. Required to work under physical & mental time pressures and work rapidly for long periods.

13. Must be able to see, smell, touch, hear, speak and distinguish colors.

14. Job requires the use of these motor vehicles: pick-up truck, golf cart, bicycles, & man-lift.