

## **MAINTENANCE DEPARTMENT**

### **POLICY AND PROCEDURES**

#### **I. ORGANIZATION**

##### **A. OBJECTIVES**

1. Direct and coordinate the operations and activities of the physical plant maintenance, including but not limited to: facilities engineering administration, layout, design, and construction; equipment maintenance; utilities operations and maintenance; building and grounds maintenance; facilities protection and security; departmental safety; and environmental compliance.
2. Provide engineering consulting services, surveys, and recommendations to all Departments; to outside architect/engineer firms performing services for the facility; and to Public Utilities.
3. Ensure compliance with applicable federal, state, and local laws, regulations, statutes, and codes; securing required permits; and coordinating with appropriate local authorities.
4. Contract with and oversee the activities of various contractors and consultants for the fulfillment of facility engineering responsibilities.

## **B. FUNCTIONS**

### **1. Management Responsibility**

- 1.1 The Maintenance Manager should set goals, plan, organize, and control the activities under his jurisdiction.
- 1.2 All goals should be specific, well defined, and quantifiable, with an estimated time of achievement given for each goal.
- 1.3 Each goal should be communicated freely and clearly to all those involved.
- 1.4 Goals should be reviewed regularly by the Maintenance Manager, Maintenance Supervisor, and operations representatives.

### **2. Organization**

- 2.1 Plant Maintenance, Engineering, Operations and Production must share responsibility in a coordinated effort to optimize facility performance.
- 2.2 Plant maintenance, as a service function, has responsibility for safe, efficient, and technically sound execution of maintenance work.
- 2.3 Engineering has responsibility for providing technical information, guidance, and support to operations and maintenance as part of the team effort.
- 2.4 Operations and Production, as equipment owners, have accountability for their maintenance costs.

### **3. Administration**

Administrative operations of the Maintenance Department include:

- 3.1 Program coordination for the Department and liaison with all other Departments for the procurement and maintenance of all real property, production equipment, utility services, and communication services.
- 3.2 Preparation of Maintenance Department budgets. Coordination with other Departments in the preparation of their maintenance budgets.
- 3.3 Preparation of project cost estimates; proposal, justification, and management of capital projects and expenditures.
- 3.4 Maintenance of records of planned and current construction and maintenance contracts.

- 10.6 Designing, specifying, installing, and maintaining all fire protection and security systems.
- 10.7 Assuring compliance with all applicable life safety and building codes and regulations.
- 10.8 Provision of first-response capability for all life-threatening and property threatening emergencies.
- 10.9 Maintaining liaison with local community emergency-response and law-enforcement organizations for assistance as required.
- 10.10 Conducting necessary security checks, inspections, surveys, and investigations to assure that the required standards of physical security are maintained.

## **11. Utilities Operations & Energy Management**

Utilities operations and energy management responsibilities required of the Maintenance Department include:

- 11.1. Operations and maintenance of all utility systems and equipment in the facility,
- 11.2. Completion of operating logs, reports, and records required by federal, state, local agencies, and the company,
- 11.3. Compliance with all applicable federal, state, and local codes, statutes and regulations,
- 11.4. Liaison with Public Utilities,
- 11.5. Procurement of fuels and energy,
- 11.6. Specifying, operating, and maintaining backup utility systems.

## **12. Environmental Concerns (See Program in Appendix)**

Maintain set of state and local quality standards and company compliance requirements. Identify and record equipment monitored and breakdowns; monitoring devices, reporting, and alarms; equipment maintenance, repairs, replacement and reporting; and monitoring device maintenance, repairs, replacement, and reporting. Maintain records of tests and inspections of drinking water quality and standards. If on City Water, have back-flow prevention valves tested each year and maintain records.

**D. OVERTIME**

1. Overtime shall be governed by company policy.
2. Overtime must be authorized by the employee's immediate supervisor.

**E. VACATION/TIME OFF**

1. Vacation and personal days shall be governed by the company policy.
2. Employee vacations shall be scheduled so that the ability to service the company's requirements is not unduly degraded.
3. A blank vacation form shall be posted in the shop so employees may indicate their desired vacation time. In case of conflicts, the Maintenance Supervisor will attempt to mediate a solution that meets company needs and satisfies the affected employees.

**F. APPRAISALS**

1. Maintenance employees shall be appraised by the Maintenance Manager or designated Maintenance Supervisor on an annual basis.
2. Each employee shall have a running evaluation of work habits, strengths and skill levels, as well.

## **1.2 Short Term**

Prepare and update a facility and equipment plan for maintenance, overhauls and replacements to keep pace with output capabilities into the near future.

## **1.3 Long Term**

Prepare and update a plan to expand facilities and equipment to meet increased production requirements. Prepare a plan to totally replace equipment with newer equipment while upgrading facilities.

## **2. Capital Projects**

Maintain all records of each Capital Project including plans, budgets, authorizations, contracts, and completions, including projects not approved at time of submittal.

### **2.1 Proposals**

The Maintenance Department will undertake to prepare Capital Project Proposals at the direction of the Plant Manager. Each Proposal will be based on the desired outcome of the Scope of Work and the Project Estimate of costs for labor, material, equipment, and site acquisition and preparation.

### **2.2 Estimating costs & time**

Capital Project cost estimates will be prepared after the Scope of Work has been prepared and approved by concerned department heads and the Plant Manager.

### **2.3 Approvals**

Project proposal form will be initiated and circulated for signature approval after completion of the Scope of Work, Estimate, and Proposal and will be accompanied by copies of these items.

### **2.4 Bidding**

The Maintenance Manager will initiate the bid process once the proposal has been signed and approved by all signatories and has been allocated sufficient capital funding for project completion.

### **2.5 Request For Quote**

Request For Quote will be sent to a selected group of General Contracting Companies with the appropriate documents for bidding on the project.

- (5) Use Contractor's best efforts to dispose of, in the manner, at the times, to the extent, and at the price or prices, directed or authorized by Owner, any materials that have not been incorporated in the Work (provided that the proceeds of any such disposition shall be applied in reduction of Contractor's out-of-pocket costs), and
- (6) Transfer title and deliver to Owner, at the time and to the extent directed by Owner, the fabricated or unfabricated parts, work in progress, completed work, supplies, and all other materials produced as a part of, or required in the performance of, the Work terminated by the notice of termination, as well as all completed and partially completed plans, drawings, information, and other property relating to the Work.

- b. Owner may, without cause, direct Contractor, in writing, to suspend, delay, or interrupt the Work in whole or in part for such period of time as Owner may determine. Contractor shall follow such direction. An Adjustment shall be made for increases or decreases in the cost of performance of the Work and Contractor's other obligations under the Contract Documents (including profit on any increased or decreased cost of performance) directly resulting from any such suspension, delay, or interruption. No adjustment shall be made, however, to the extent
  - (1) performance is, or was, or would have been, so suspended, delayed, or interrupted by another cause for which Contractor is responsible, or
  - (2) An equitable adjustment is made or denied under another provision of this Agreement.

17. **Passes; Owner's Rules and Regulations:** Before entering any area on Owner's premises where Owner's rules and regulations require passes, Contractor shall obtain for all its workers (and for those of any approved subcontractors) appropriate passes from Owner. Contractor agrees to familiarize its workers (and

Enter PM Work Order issuance schedule into CMMS with compliance/non-compliance tracking & reporting or issue by hand arranged schedule.

PM Work Orders must be scheduled and completed with the same priority as other work orders. All work, including PM work, must be entered into the equipment's machinery history file.

## **2. Predictive Maintenance Plan**

Predictive maintenance techniques shall be utilized to reduce equipment failure and reduce maintenance workload through the ability to identify approaching problems by tests and inspections. Maintenance manhours spent on the job will be reduced through purchasing high quality equipment which is maintenance repair/replacement friendly. Initial equipment purchasing needs to monitor and review many factors before purchasing or allowing the contractor to purchase equipment. Strict initial specifications will cost more but save many times the cost over the life of the equipment.

### **Testing & Inspection**

#### **2.1 Vibration Logging Program**

Large rotating equipment and selected smaller equipment will be included in the vibration measurement program. Each piece of equipment will be checked and readings recorded with time and date. At designated intervals, a PMWO (Preventive Maintenance Work Order) will be issued to take readings again. The successive readings will show a pattern of wear over time. Out of norm readings will cause a red flag and warning to be issued to check the equipment in question.

#### **2.2 Alignment**

Alignment readings on large rotating equipment will be taken on installation and recorded in the equipment's machinery history notes. Periodically, the alignment can be rechecked and the readings recorded and logged. If a piece of equipment has been removed and reinstalled, the previous alignment readings will make the job go faster and more accurately.

A procedure for recording the use of current parts and material will ensure that the current inventory will remain more or less relevant till the inventory can be relocated to a storeroom. The Project Manager (PM) will need to check equipment manuals to determine a list of required and critical spares and material needed to keep the plant running efficiently on a cost effective basis.

This list can be compared with what is actually in the inventory. Senior maintenance and production employees can be consulted on the makeup of the final list of required parts and material. The PM can set up a list of preferred suppliers and vendors for the list. As much of the material and spares may be held at the suppliers warehouse and purchased as needed. This requires a degree of trust and reciprocity between the Company and the supplier.

The Company will develop the list of preferred suppliers as suppliers who deliver on time, accept returns, open in the night for an emergency, and otherwise provide excellent service. In return, the Company will purchase most of the parts from these preferred suppliers. The number of preferred suppliers should be fairly small, four or five, for a Company of three hundred to five hundred employees.

The Maintenance Department will set up and maintain the list of preferred suppliers and vendors. Maintenance will prepare a format for rating these suppliers and also prepare a form for investigation of a defect in a supplier's service or parts/material delivery. A significant defect or after several defects and consultations with the supplier with no improvement could result in the concerned supplier being derated from preferred supplier to supplier and replaced by a competitor supplying goods in the same area. This supplier would then become one of the preferred suppliers.

The PM will develop a layout for the storage of the proposed inventory of parts and material decided upon in the consultations with the concerned departmental experts. The layout should try to group parts such as electrical, instrument, electronic, bearings, motors, gears, gearboxes, etc. Ample accommodations should be made for the addition of more parts in each area and correspondingly more part assigned numbers in the database.



- \* Violations
- \* Corrective Actions

## **2. HAZARDOUS MATERIAL & DISPOSAL**

All hazardous material in use must be tracked from plant entry to final departure. Departure includes through wastewater via Cleaning In Place (CIP), waste oil, or hazardous material disposal. No hazardous material is to be discarded into the recycle bins or regular waste and garbage bins or containers. No hazardous chemicals, oils, solvents, liquids, acids, caustics or cleaning waste from usage is to be flushed into the plant sewer system or the floor drain waste water system other than that from CIP. All accidental spills and discharges of hazardous waste material must be reported to the Supervisor of that area immediately and containment/cleanup begun as soon as safely possible. All cleanup waste is to be treated as hazardous waste.

- \* Agency
- \* Compliance Requirements
- \* Reports
- \* Letters
- \* Violations
- \* Corrective Actions

### **2.1. MSDS List and Posting**

Hazardous chemicals and materials in use in each area and department will be discussed on a regular and continuing basis during new employee orientation and regular safety meetings.

### **2.2. Storage**

- \* Hazardous material storage containers must be properly labeled according to regulations.
- \* No hazardous material may be removed from its original container and stored or transported in another container unless that container is specifically approved and identified for the hazardous material.
- \* Each hazardous material storage area must be identified and posted for usage.
- \* Other materials or containers must not be stored in an unauthorized area.

#### **4. Respiratory Protection (See Appendix D)**

Compliance requirements - CAL/OSHA Title 8, Division 1, Chapter 4 Subchapter 7, Group 16, Sec. 5139-5155

**Respiratory Training** – Welders-All, Annual

#### **5. First Aid**

Compliance Requirements-CAL/OSHA Title 8, Division1, Chapter 4 Subchapter 7, Group 2, Sec. 3400

5.1 **Basic First Aid** – Supervisors, Volunteers, Annual Refresher

5.2 **Advanced First Aid** – Supervisors, Volunteers, Annual– Supervisors

#### **6. Hot Work Permit (See Appendix)**

Compliance Requirements - CAL/OSHA Title 8, Division 1, Chapter 4 Subchapter 7, Group 9, Sec. 4649-4665 and Group11, Sec. 4648-4853

6.1 **Training Issuer** – All Supervisors, Annual

6.2 **Training Receiver** – All Maintenance, Annual

#### **7. Hearing Conservation (See Appendix C)**

Compliance Requirements - CAL/OSHA Title 8, Division 1, Chapter 4 Subchapter 7, Group 15, Sec. 5095-5100

7.1 **Training** – All, Annual

7.2 **Initial Testing** – All, When Hired

7.3 **Yearly Testing** – All, Annual

7.4 **Compliance Signage Posting** – Entrance Points to high noise areas

#### **8. Fall Protection**

Compliance requirements - CAL/OSHA Title 8, Division 1, Chapter 4 Subchapter 7, Group 4, Sec. 3207-3239 and 3270-3280

8.1 **Hazard Training & Identification** – All, Annual

## Appendix A

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