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# Maintenance Painting Management System (MPMS)
## Concept and Philosophy

Brock Services LLC. offers to **Tampa Electric Company** an approach to maintenance painting that we have been developing for years, yet have been continuously upgrading as technology improves, the industry evolves and customer needs expand.

The Concept is simple: to provide Cost Effective Maintenance Painting by

> Protecting More square footage from corrosion and coating degradation while Spending Less on painting and surface preparation The result is elimination of costly steel replacement and a lower painting cost per year of life of the asset.

The Philosophy we offer is:

- to Systematically Monitor the conditions
- to develop a long range Plan for painting, but utilize a 3-5 year Rolling Schedule for scheduling work
- to schedule painting at the Optimum, or most cost-effective time, thereby reducing the need for abrasive blasting
- to paint complete areas at a time, called Block Painting, rather than by individual pieces of equipment
- to perform a quality painting job
- to manage the processes in such a way as to control costs and enhance value.

The program, which we call a Maintenance Painting Management System, will provide the data to **manage** the maintenance painting in your plant and a **system** capable of being updated or revised as work progresses or circumstances change. The program is customized to plant specific codes and terminology and to meet the "needs" of **Tampa Electric Company.**

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## Benefits

**Computerized Database**

Information is power.

The Maintenance Painting Management System will define areas, or sections, in the plant, identify and grade each substrate within a section, as well as evaluate environments, aesthetics, and priorities for each section.

All this information, and more, is in a programmed database that can provide information about the plant unknown or unavailable through any one source otherwise.

**Corrosion Control**

The MPMS can effectively control corrosion in the plant by,

**First:** Identification of those areas in the plant that have corrosion problems now and/or the greatest potential for problems in the future.

**Second:** systematic Monitoring of these areas assures conditions do not degrade to a level beyond which coatings can control corrosion.

**Third**: Scheduling of the areas before corrosion reaches the level requiring more costly surface preparation or steel repair.

**Cost Effectiveness**

The MPMS approaches painting cost effectively in three manners:

- **Block Painting**

  Block Painting, or complete painting of a work area, maximizes the surface area to paint while minimizing rigging, mobilization, and protection. This makes the work more efficient, and therefore more cost effective, i.e. maximum square footage painted for the effort results in a **lower cost for painting.**

- **Schedule**

  The scheduling system is designed to accomplish three objectives with painting.

  a. Address areas of advanced corrosion prior to metal loss and costly steel replacement.

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b. Schedule painting work at the "optimum time" for preventive maintenance, i.e. at the end of the life of the coatings, but prior to accelerated failure due to wear out that may require more extensive surface preparation.

c. Address areas of high visibility where image and appearance is important.

The resulting painting expenditures will accomplish more, and therefore provide a more cost effective effort. **The cost of painting can be reduced through scheduling.**

- **Quality Work**

A quality painting job will reduce maintenance costs and extend the life of the coating, resulting in a **lower long term cost of painting.** Quality is cost-effective.

## Long-Range Planning & Scheduling

The MPMS is developed by Brock Services, an industrial painting contractor with years of experience in a variety of industrial environments. The budgets generated will reflect realistic estimates that are achievable, yet not inflated. Budget estimates can be provided that will allow the owner to schedule expenditures years in advance.

The schedule will be a multi-year plan for maintenance painting that selects sections for painting according to the unique Schedule Value system designed specifically to meet **Tampa Electric Company** objectives. Yet the schedule will have the flexibility to adjust for the day-to-day operations of the plant. Long range and/or short term economic factors can be built into schedules. Scope deferments, when necessary due to budget restraints, can be selected by utilizing engineered data from the Schedule Value system rather than intuition or a cursory review of the plant.

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## Phases

The Maintenance Painting Management System (MPMS) that Brock Services provides is a comprehensive management tool custom designed to optimize the life of existing and/or new coatings and still meet the needs that Chevron might visualize for its maintenance painting efforts.

The Maintenance Painting Management System consists of these three phases.

I. **Development**

**A.** **Objective:** To provide a systematic, engineered process to maintain the assets of **Tampa Electric Company** facility against corrosion through the use of protective coatings. This will be accomplished through identification, scheduling, and quality performance of coatings work.

**B.** **Software:** Database software will be customized to incorporate **Tampa Electric Company** site specific terminology, cost coding, and unit measures, to assure reporting is in concert with parameters established by the Objective.

II. **Survey**

**A.** **Boundary Definitions:** The plant will be divided into definable, manageable-size work areas. The MPMS will utilize a multiple level breakdown. The first levels will coincide with **Tampa Electric Company** structure, while the last levels will be determined by criteria engineered toward cost-effective painting.

**B.** **Condition Analysis:** The current condition of the plant will be evaluated by several criteria:

1. Type and Severity of Environment
2. Degree of Corrosion per SSPC VIS 2
3. Type of Corrosion identified
4. Visibility and Aesthetics
5. Priority, based on cost-effective painting efforts.

**C.** **Schedule:** A ***Schedule Value***, based on the criteria from the Condition Analysis, is calculated for each work area. The weight of each criterion is determined so that the cumulative Schedule Value will produce a Rolling Schedule that meets the established goals. The ***Rolling Schedule***, which is reviewed annually, has the flexibility to adjust and therefore assure scheduling what needs painting, when it needs painting.

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**D. Budgeting**

1. Square Footage: The square footage of paintable surfaces is calculated for each section.

2. Specifications: In concert with corporate standards painting specifications that address the existing conditions and environments, surface preparation restrictions and desired painting cycles are developed and assigned to each section.

3. Budgets: The MPMS promotes a Long Range Plan with a Short Term Rolling Schedule philosophy, allowing us to set reasonable estimates for long term planning that can be reviewed and adjusted if necessary for short term budgets. This flexible approach could provide significant savings to **Tampa Electric Company** over the years. Budgets will include all resource requirements, including labor, material, equipment and supervision.

## III. Implementation

**A. Execution:** The painting work is accomplished in a quality fashion according to established schedules and specifications.

**B. Audits:** An auditing, or re-survey, cycle is established. The audits will maintain the integrity of the Maintenance Painting Management System data and assure that efforts are systematically guided towards meeting desired goals and objectives.

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# Maintenance Painting Management System (MPMS)
## Data Base Management

The data in the Maintenance Painting Management System can be utilized in a multitude of applications, restricted only by the range of information in the database and the imagination of the user.

Some applications have been discussed, such as the ability to establish schedules. But even schedules can be made in a variety of way:

- by Corrosion; worst first
- by Visibility; most visible areas first
- by Environment; most severe first
- by Coating Priority; most cost-effective painting first.
- or by Schedule Value; which is a combination of all of the above.

With the MPMS, areas with steel loss are easily identified, as are areas approaching steel loss.

Performance Histories can also be tracked, including performance of a paint system in a particular environment or painting costs, both budgeted and actual. Even performance histories on different contractors can be tracked.

With the number of database fields involved, there is a multitude of sort options for reporting purposes. Reports can be generated sorted on Divisions, Cost Centers, Paint Systems, Environments, Conditions, Scopes, etc.

**Auditing**

The key to long-term success of the Maintenance Painting Management System is to maintain current information in the database. This is done through auditing.

To assure audits are performed in a systematic manner, the MPMS will generate an annual audit report to identify those sections of the plant to be audited that year. The selection will be based on several criteria:

- when the section was last painted or audited
- the severity of the environment
- the importance of aesthetics to the section
- the life expectancy of the coating system

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Two purposes are served with the Audit Report.

1. Performance Monitoring - conducted periodically during the life cycle of the coating to assure performance and to update the MPMS database.

2. Follow-Up Inspection - conducted 12 to 18 months after painting to find any early failures or any defects resulting from circumstances outside the design of the coating and to schedule repair work.

Audits may also be requested by **Tampa Electric Company** or Brock Services LLC. personnel at any time. These requested audits will be conducted as soon as possible, with appropriate action taken.

The Maintenance Painting Management System will supply **Tampa Electric Company** with a magnitude of information about present conditions of the plant. The data will be in depth and current. However, unless the data is updated on a regular basis, the information will become obsolete, and lose its value. The long-term integrity of Maintenance Painting Management System is dependent on instituting a management process of continually updating its database.