MMPIRE

MAINTENANCE and MANAGEMENT PROGRAM for INTEGRITY and RELIABILITY of EQUIPMENT

Facilities which own and operate hundreds of tanks, pressure vessels, and piping systems can be faced with a management nightmare when it comes to assuring the integrity and reliability of this equipment. What to inspect, when, and how are questions that are difficult to answer, and can greatly impact maintenance budgets. Our asset management program answers these questions, and can save time and money, while assuring equipment safety and reliability.

MMPIRE – ***M***aintenance and ***M***anagement ***P***rogram for ***I***ntegrity and ***R***eliability of ***E***quipment – is an asset management program that combines our engineering expertise with our inspection and management skills. This includes review of inspection protocols and repair specifications to identify alternatives, resulting in reductions in inspection and/or repair costs. Engineering evaluations of inspection results are then done to maximize (extend) inspection intervals and to avoid unneeded repairs. We also make

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sure that nothing is missed, and that critical damage mechanisms do not go undetected. Our evaluations are based on best engineering practices, not solely on more conservative consensus guidelines. Selection and management of inspection and repair contractors are done to get the most for your money.

The goal is simple – electronically maintain all the information about equipment maintenance at various facilities and manage future maintenance costs.

M&M Engineering uses our web-based database for the management of ***MMPIRE*** information. Our web-based program is easy to use – and can be accessed by our clients through our web site. Each secure database contains information about the equipment – design and operational specifications, photographs and drawings, inspection reports, repair or modification information, and, if desired, inspection protocols.

Key Planning Information

The database can help facility personnel with inspection planning. For example:

- How many components are due for inspection next year?
- How many components are there in a particular section of the site?
- What inspections were completed in a prior year?
- How many fiberglass, steel, or tile-lined tanks are there in the facility?
- When was the last time a component was inspected? What were the results?

How MMPIRE Works

Phase I of the asset management program often incorporates our Systematic Inspection Design (SID) concept. Inspection protocols are either reviewed and modified, or written (where none are available). If necessary, a risk assessment is completed to set inspection priorities and schedules. This usually involves a site walkdown by a qualified senior engineer who provides input to the program based on knowledge of what causes failures, how operations affects the materials of construction, as well as on information provided through client interviews. The goal is to spread out the inspections over a large enough time frame (usually five to ten years) to work within budgetary limitations.

Phase II involves the implementation of scheduled inspections. We complete our engineering evaluations, assign reinspection dates, and enter the data into the program. Reports from a variety of sources can readily be imported. Where applicable, action items are also identified as to what needs to be done, and when. This applies when a deteriorated condition is found that requires monitoring or future repair.

Phase III is the ongoing management of the information. Protocols are modified based on evaluation of the inspection results. When budgets get cut, we select the appropriate items for which inspections can be delayed. We also research options for alternative repair methodologies, less costly materials, or complete a cost-benefit analysis when considering short-term vs. long-term repair options.

Leverage M&M Expertise

Combining a SID assessment with asset inspection and data management can:

- Safely extend inspection intervals whenever possible
- Reduce the scope of inspections; customized on a per-equipment basis
- Assure inspection protocols address all critical damage mechanisms
- Identify the most cost-effective repair methodology and timeframe

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