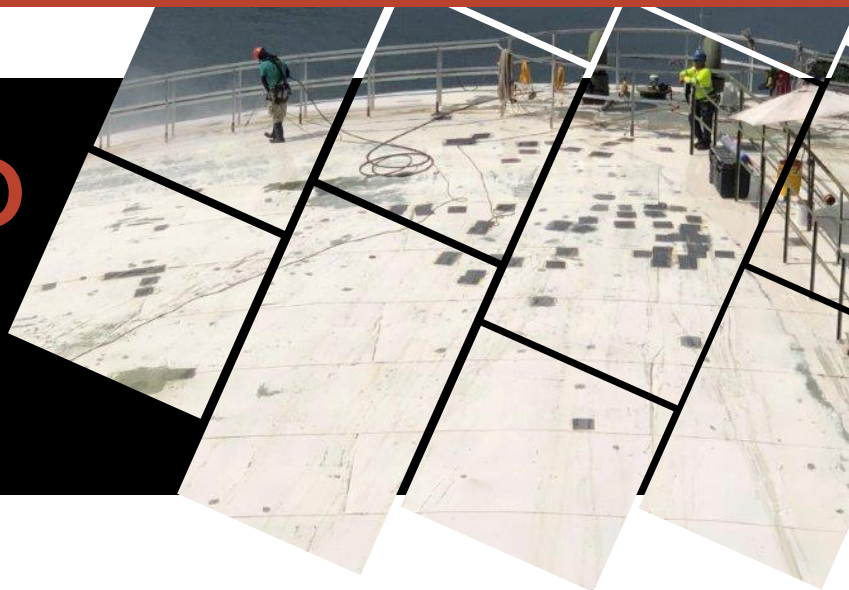


REACTIVE TO PROACTIVE

Managed Area Program



MANAGE CRITICAL AREAS

Managed Area Programs (MAPs) offer tools to restore asset reliability and reduce unproductive spending for maintenance. A&G Industrial Services can develop and help maintain a customized MAP for your system. A MAP is a process that will identify the root cause of a failure, the potential failure population, the failure rate, and develop the appropriate inspection and repair method to stay ahead of future failures. The primary objectives of MAP projects are:

- Conserve capital by understanding and utilizing the remaining life of your system
- Target areas to effectively spend O&M
- Establish future maintenance plans to achieve your company's goals

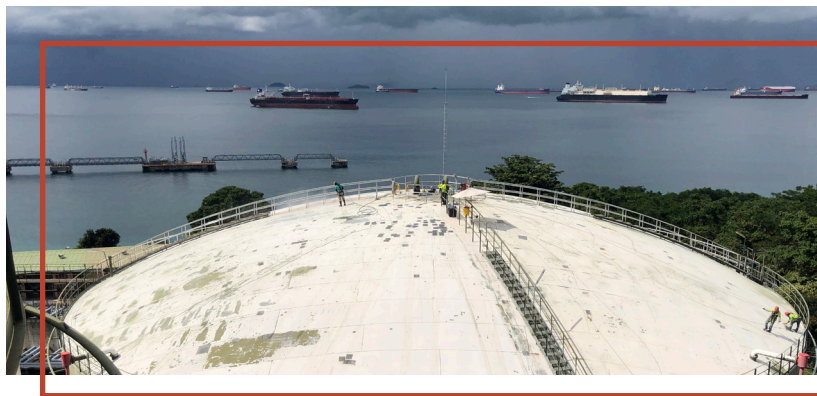
TANK ROOF REPAIR

A damaged oil tank required extensive repairs due to hundreds of holes in the roof. A MAP was used to return the tank to service without replacing the roof. The root cause was a combination of internal and external corrosion. Inspections, including visual, UT testing, and adhesion tests were performed to determine the extent of the corrosion. A records review of passed inspections and failures was performed to develop a wastage rate. The wastage rate was applied to the tank roof to determine a potential failure population (23,164 potential sites). A repair plan was established that did not require a full roof replacement, but targeted current and prospective failure sites to eliminate future failures.

TARGET FAILURES

To target and manage failures, the MAP process:

- Determines potential root causes of failure
- Selects inspection techniques to detect issues before they lead to failures
- Develops a wastage rate and determines remaining life
- Applies wastage rate to potential failure population



MAPPING SUCCESS

By understanding and managing failure populations, the MAP process allowed the client to avoid wholesale replacement of the roof. The tank was returned to service with a new MAP detailing future inspection and maintenance activities to proactively manage the tank throughout its life cycle.

90%

Cost Savings