F.E. MORAN
SPECIAL HAZARD
SYSTEMS

CASE STUDY

Silicon Chemical Plant Cooling Tower Sprinkler System Installation

F.E. Moran Special Hazard Systems had been providing fire protection solutions for a number of years at a cutting-edge silicon chemical plant. The facility recently discovered that the fire protection system in the cooling tower needed replacement. In a week's time, the piping was removed and replaced during an outage, providing the plant with the protection they needed to keep their facility safe.

A Solid Track Record of Providing Robust Protection for the Plant's High-Risk Hazards

As chemical processing continues to develop, the facilities in which products are manufactured must progress as well. One of the leading silicon chemical plants in the solar power industry has relied on F.E. Moran Special Hazard Systems over the years for effective fire protection solutions for their developing plant. Their systems and services have proven to effectively protect the plant's valuable assets from the high-risk hazards that exist within the environment. As several phases of expansion have taken place, F. E. Moran Special Hazard Systems has designed and installed detection and suppression systems for areas such as vessels, distillation and hot oil areas, pipe racks, superheaters and silane loading areas.

In chemical plant applications where volatile substances are used in the manufacturing process, it is critical that structures such as cooling towers have robust fire protection systems to protect lives and valuable assets

F.E. Moran's Experience Enables Them to Uncover Issues Before They Escalate Into Big Problems

While doing maintenance work within their cooling tower, the plant had discovered an air leak on the pilot line of the fire protection system and asked F.E. Moran to repair it. It was discovered that corrosion at the joint of the pilot line had caused the leak, which led F.E. Moran to suggest inspecting the water piping. Experience told F.E. Moran that if the pilot line had sustained corrosion from the harsh environment, the water piping was probably in need of maintenance as well. F.E. Moran's speculation proved to be accurate and the plant's commitment to safety led them to make the decision to replace all of the piping in the cooling tower. The facility could recognize the expertise and precision of F. E. Moran's work over the four years that they had performed services at the plant, which made it an easy decision for them to select F. E. Moran as the contractor to perform the replacement.

Scope of the Project

- **Cooling tower deluge system pipe removal**
- **Installation of new deluge system**
- **Replaced pipe stands adjacent to the cooling tower**
- **Flow test of the sprinkler system**
- **Installation completed in one-week timeframe**

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Flexibility, Knowledge and a Vast Network of Resources

The time frame within which F. E. Moran was given to finish the project presented a challenge that required tapping into their extensive network of resources. Fire protection equipment utilized in cooling towers, such as the specialized nozzles, are typically made to order. F. E. Moran called upon a dependable and efficient fabricator they had worked with in the past to supply the pipe so that the project could be completed within the scheduled outage. Part of the F. E. Moran crew arrived a couple of days before the start date of the project to receive the materials and tools and prepare for the project so that they could begin work as soon as the facility could allow them access to the tower.

Another obstacle that F. E. Moran faced involved the design input referenced for pre-ordering and fabricating the materials used in the system. Some of the older drawings that were used as "as-builts" for the project required amending, which required experience and flexibility to make the necessary adjustments in the field while still meeting the target date.

F. E. Moran installed Schedule 40 galvanized pipe to constitute the new deluge system, which is designed to withstand severe elements to a higher degree than standard pipe. Additionally, F.E. Moran installed stainless steel nozzles for a higher degree of corrosion resistance. Another measure they took to counter the high rate of corrosion was the utilization of stainless steel hangers, which are even more durable than the galvanized hangers that previously supported the system.

F. E. Moran predicted that the plant's water pipes had experienced corrosion due to the harsh environment. In a one-week timeframe they completed the installation of a new deluge system within the facility's cooling tower.

"F.E. Moran's Project Management team is very professional, experienced and helpful in making sure a quality project that meets the customer's needs is completed."
-Emergency Response Coordinator

Efficient Project Management and Effective Labor Allows F.E. Moran to Complete Projects in Remarkable Time

As a highly productive chemical plant, they aimed to minimize the down time of any part of its facility. They had given F.E. Moran one week to complete the work during the scheduled outage and any delays in the completion of the project would have resulted in losses for the facility. On Monday, July 11th, F.E. Moran began the onsite work at the plant, with a deadline of Monday, July 18th for the tower to resume operation. F.E. Moran worked efficiently and skillfully and put in the necessary overtime hours so that on Saturday the 16th the system had been fully installed and the pipe had been hydrostatically tested to ensure optimal operation, making the project fully complete with time to spare. The Emergency Response Coordinator for the facility says "F.E. Moran's Project Management team is very professional, experienced and helpful in making sure a quality project that meets the customer's needs is completed." Of the work completed by F.E. Moran, he says: "I would recommend and use F.E. Moran for future projects that I have, they have the ability to complete large and small projects within a short duration."