



Project Case Study - Mission Critical Manufacturing

Project Type: Large Manufacturing Warehouse
Owner: Aerospace Equipment Manufacturer
Location: Los Angeles, CA
Sprinkler Systems: Twenty-five (25) wet systems
Nitrogen Introduced: October 2010



Corrosion at air/water interface

Project Background

The one million sq. ft. building was built in the 1960's and protected by twenty-five overhead wet pipe sprinkler systems that had been renovated several times. The building had a **long history of leak repairs (up to one leak every two weeks)** and some systems were completely replaced over time. The wet pipe systems were characterized by several elevation changes and large pockets of trapped air. The majority of the damaged piping was found at the air/water interface. Many of the sprinkler supply mains contained large amounts of corrosion by-product (iron oxide) solids from the black steel piping .

ECS Scope of Work

ECS was contracted to provide a corrosion assessment survey in August 2010 to determine the root cause of corrosion and extent of damage within the existing sprinkler piping. Later that year the owner installed ECS Protector Nitrogen Inerting Vents and injection ports on each system to remove oxygen from the piping. A portable nitrogen generator was used to supply nitrogen gas at each external riser. ECS has since provided assessment services and corrosion management equipment for many other buildings on the same campus.

Performance

All sprinkler system mains were flushed and no piping was replaced prior to completion of Wet Pipe Nitrogen Inerting. When service is performed the owner has reported that water drained from the systems is completely clear with no sign of corrosion by-product. Since the facility was treated with nitrogen there has been one (1) reported leak. Upon investigation it was determined that during routine service maintenance personnel did not follow the protocol to maintain a nitrogen atmosphere and allowed oxygen to enter - resulting in a leak. The system was re-treated with nitrogen and **no additional leaks have been reported.**



Portable nitrogen generator used at facility