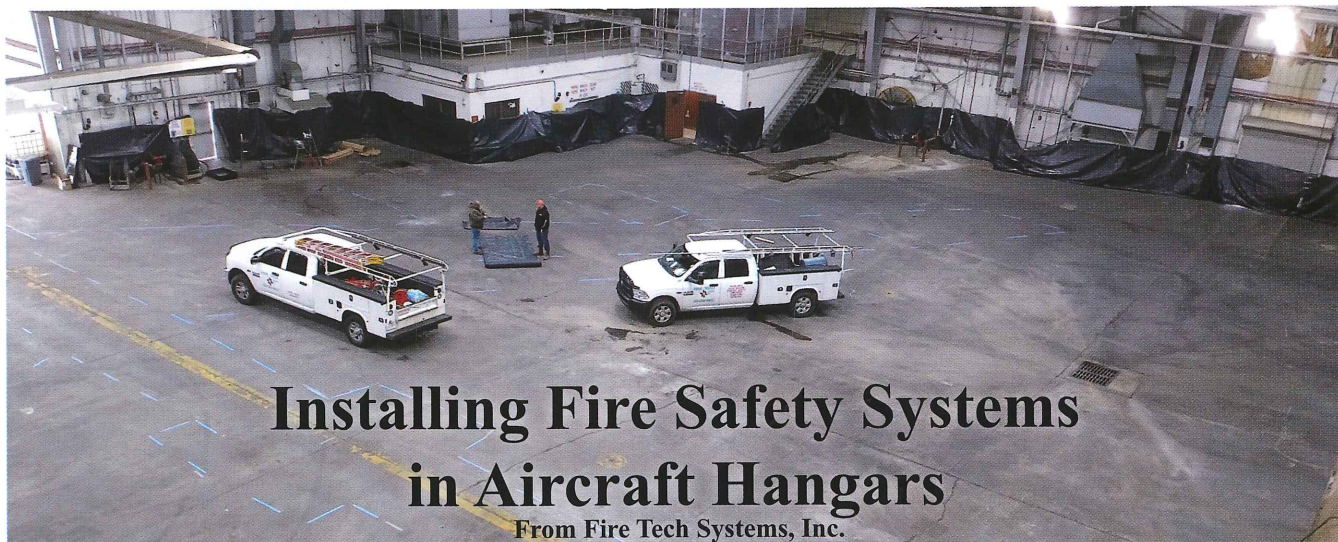


System Upgrades and Replacements



Installing Fire Safety Systems in Aircraft Hangars

From Fire Tech Systems, Inc.

There are always projects that you will remember due to the difficulty, challenges, and reward for working through all the barriers and coming out on the other side with a success story. In our industry, we may receive the project contract now and not begin the work for a few months. That's a typical scenario. This project was three years in the making.

Installing fire safety systems in aircraft hangars is an exciting part of our business. Having a military aircraft base as a neighbor affords us this unique opportunity. It's August 2015, senior sales estimator Rob Rubel reviewed a bid source on FedBizOpps.com (Federal government's website that posts all Federal Procurement opportunities over \$25K), and came across this solicitation opportunity for Fire Tech Systems.

Fire Tech Systems was bidding the project as the prime contractor. In September 2015, after a rigorous Request for Information (RFI) process, extensive scope of work (SOW) clarifications, and bid proposal documents, we submitted our 87-page response to solicitation (bid proposal for the military). Six months later, approval was awarded (March 2016) to Fire Tech Systems.

The project included:

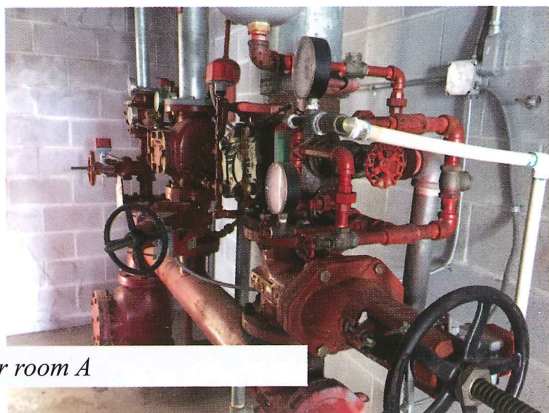
- Project scheduling
- Subcontracting included: plumbing, HVAC, and electrical

- Upgrade overhead sprinkler coverage
- Removal and replacement of four (4) existing foam systems
- Install four (4) new foam system tanks and ratio proportioners
- Replace existing deluge system
- Upgrade miscellaneous portions of the existing foam water systems to code
- Replacing existing fire alarm system with addressable MAPP+ MONACO FACP fire alarm system

Let's begin... so we thought. Brakes! The solicitation for the job was under the *United Facilities Criteria (UFC)* 2014 code. After the award of the project and during the first submittal review, the government adopted the *UFC* 2016. This required the redesign of the system to meet the 2016 edition of the *UFC*, a significant fire alarm change. We overcame the challenges, grew our knowledge base, and maintained code standards. September 2017, installation began.

Ensuring code adherence when you have multiple standards to meet can be challenging. This is when the value of a very code-knowledgeable team is a vital role to the project. You must adhere to every code during the installation process.

Applicable codes for this project: The Military Code UFC3-



Riser room A



Riser room with new equipment

600-01 *Fire Protection Engineering for Facilities*; ETL98-08; UFC4-211-01-*Aircraft Maintenance Hangars*, Change 1; ETL02-15; NFPA 409-*Standard on Aircraft Hangars*; NFPA 11A-*Standard for Medium- and High-Expansion Foam Systems*; NFPA 13-*Standard for the Installation of Sprinkler Systems*; NFPA 72-*National Fire Alarm and Signaling Code*; UFC3-600-02 – O & M: *Inspection, Testing, and Maintenance of Fire Protection Systems*; AFI32-1066 – *Backflow Prevention Program*; UFC3-410-01FA – *Heating, Ventilating, and Air Conditioning*, with Change 4 replaced by UFC3-410-01; UFC3-420-01 – *Plumbing Systems*, with Change 10.

As the prime contractor, scheduling is always challenging. Trying to manage a schedule for workers without weather delays, project changes deemed by the client — communicating changes is hard. The job usually requires maintaining the schedule completion date, regardless.

The sprinkler installation team worked at a ceiling height of over 72', in a hangar that's 33,850 sq. ft., weaving around ceiling braces and lights, replacing over 400 sprinklers.

Now it's time for some tank talk. Four, 250 sq. ft. riser rooms had an 1,800-gallon foam tank and a 300-gallon foam tank (photos of riser room A and B). The hangar and suppression system were built and installed in 1978.

As you can imagine, the codes and standards have evolved over the years. The current ETL (Extract, Transform, Load) dictated that existing foam equipment be removed, disposed of, and replaced. The smaller tanks and risers were removed without issue. But how do you remove equipment through a door that was built around the equipment? Demo time! The four 1,800-gallon tanks were cut into manageable sections with an acetylene torch and plasma cutter.

The new tanks were 300-gallon AFFF Horizontal Bladder Foam Tanks utilizing Chemguard AFFF — low expansion foam and stacking valves made the installation of the new system smooth. After numerous hours of work, we are ready for preliminary testing of the system.

Rob Rubel said, "Managing multiple aspects (in addition to the fire protection) of a construction project made for a unique challenge while completing the upgrades for the hangar. Barksdale Air Force Base is a very important part of our community and we take pride in the work we do there. Every day, the folks at that air force base make a sacrifice to protect our freedom and secure our safety, so it's rewarding for us to know that we made that hangar safer."

As of this writing, this project was scheduled for completion February 15, 2019. Our team was onsite and prepared for the final countdown, along with military engineers. All the challenges of the project, from the scope of work, to scheduling and code juggling, evaporated as the foam began to pour into the hangar. Mission accomplished!

We would like to thank Colonel E.H. Spillers for his support during this project.

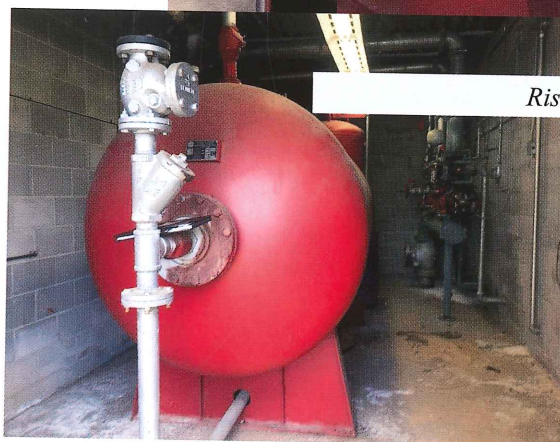
The Fire Tech Systems team on this project included: Linda Biernacki, president/owner; Rob Rubel, senior sales estimator; Frank Gardner, fire alarm & special hazards manager; Tony Hadwin, project superintendent; Tracy Hadwin, project coordinator.

For more information contact: Ellen Ballard, Executive Assistant, Fire Tech Systems, 721 N. Ashley Ridge Loop, Shreveport, LA 71106; (318) 688-8800, info@firetechsystems.com.

New foam tank



Riser room B



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