

SELF-SERVICE FUELING:

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a growing trend among

By William Frye

Self-service fuel facilities are becoming a common sight at general aviation airports across the country. With the availability of non-primary entitlement funds from FAA, general aviation (GA) airports can afford to offer this amenity to their aircraft owners and operators. These facilities can boost a facility's revenue and attract new business. Cape May Airport in Cape May, New Jersey, added a self-service fueling facility in June 2004 as a way to better meet the needs of their customers. Tom Berry, assistant airport operations manager for Millville and Cape May airports, said their facil-

ity has "been a win-win situation." The pilots can fuel their general aviation aircraft 24 hours a day, seven days a week and the fuel cost to pilots was reduced because of the airport's labor cost savings.

The ease of installing a self-fueling facility encourages many GA airports to invest in this potential moneymaker. However, while the actual installation process is relatively simple, complying with the seemingly endless slate of codes and regulations can be daunting. Because of the environmental and fire-safety concerns that fueling generates, self-service

facilities must comply with codes regarding aircraft fuel servicing, aircraft fueling ramp drainage, loading/unloading containment, and a host of other site-specific codes. Airport managers must consider the relevant fire-safety, environmental, and security requirements before they decide to go ahead with plans to install a facility.

The Delaware River and Bay Authority (DRBA) hired C&S Engineers, Inc., a firm headquartered in Syracuse, New York, to design and handle the environmental and permitting requirements for the Cape



GA airports

May Airport facility. “The process was very smooth because the plans were drawn up by our consultant and our engineering staff was involved throughout the process,” said Berry.

Pilots who store and maintain their planes at GA airports value the ability to manage their own fuel needs. Timothy Coughlin, a licensed pilot and a mechanical engineer at C&S Engineers, designs and reviews self-service fueling facilities. He points out that fuel exhaustion is the third leading cause of GA accidents—and probably the most preventable. Self-fueling facilities are a convenient

way for pilots to make the safe decision to add a few extra gallons on their flight. “The self-fueling facilities also make it easier for me to enjoy flying evenings, weekends, and holidays—times that are typically less well enjoyed by folks working at the airport,” said Coughlin.

Berry reports the same positive attitude from pilots at Cape May, which has about 35,000 operations a year. “We have had nothing but success with it,” he said. During the summer, Cape May serves mostly transient aircraft and is a popular stop for pilots. The airport hopes that the new self-service fueling facility will generate additional business.

In today’s sensitive security climate, access control is a critical requirement for any fueling facility. Access to fuel-dispensing equipment must be controlled through tamper-resistant mechanical or electrical devices that prevent access or use by unauthorized persons. Many airports accomplish this with electronic card-reading terminals, which are an effective way to limit access to dispensing equipment to authorized users only. A card-access system has the added benefit of unattended, 24-hour self-service fueling.

Card reading terminals are increasingly popular for self-service fueling facilities. Because no airport personnel are involved, labor costs are reduced. Cape May realized cost savings of self-service right away and was able to charge less per gallon of fuel—a real selling point to their pilots. The convenience of self-service encourages fuel purchases, which increases profits. Many terminals accept major credit cards, oil company cards and even private cards, making it even more convenient for customers. Facility owners benefit from the fuel

management capability of these systems. They can collect transaction information, limit the quantity of fuel dispensed per transaction, offer incentives such as volume discounts, and generate customized reports. “If only it was as easy to swipe a card and order beautiful sunny weather!” joked Coughlin. “The card reader makes it easy and safe for me to fuel up when the time is convenient for me. And using a major credit card to pay is a real benefit.”

A NUMBER OF REGULATIONS

There are a number of regulations that govern fueling facilities. Airport operators should familiarize themselves with the legal requirements that come with a self-service facility. Many airports hire consultants to prepare the large amounts of paperwork and permits that are required, while others use in-house staff to manage the process. David Hoppenjans served as the DRBA’s project engineer for the new fueling facility. While DRBA chose C&S Engineers to design the facility and shepherd the environmental permitting for the project, DRBA managed the construction, which was overseen by project manager Steve Errickson.

The National Fire Protection Association’s Standard for Aircraft Fuel Servicing (NFPA 407) is the most applicable to self-service fueling. The code’s applicable provisions prescribe fire-safety measures to protect people and property associated with fueling. For example, the code prohibits occupancy of the aircraft during self-service fueling and requires a design for the dispensing device that ensures a proper bond between the aircraft and fueling equipment.

NFPA 407 also requires dispensing devices to be equipped with emergency shutoff valves that close automatically in case of fire, and pipe bol-

lards or other provisions must be installed to protect dispensing devices from collisions. The emergency shutoff (ESO) switch must be located more than 20 feet, but less than 100 feet, from the dispensing device, near the route that would be used to leave the spill area. In an emergency, this allows someone escaping the area of immediate danger to shut off the flow of fuel completely.

Finally, NFPA 407 requires important information to be clearly posted, including operating and emergency notification instructions.

SPILL CONTAINMENT

NFPA 415, Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways, requires aircraft fueling ramps to drain to a separator or interceptor designed to dispose of flammable or combustible liquids into a safely located, approved containment facility. The intent of this code is to get flammable and combustible liquids to quickly drain away from people and property and facilitate safe disposal of spilled liquids. The ramp slope and its proximity to drainage inlets must be considered when designing aircraft fueling ramp drainage systems.

NFPA 30, Flammable and Combustible Liquids Code, requires loading and unloading facilities to have drainage systems or other means to contain spills. This prevents uncontrolled spilled liquid from traveling beyond the loading or unloading area and exposing surrounding equipment and buildings. This is also required by the Spill Prevention, Control, and Countermeasure (SPCC) Rule for facilities that have a loading rack. One way to meet this requirement is to install an underground holding tank to collect spills from the loading/unloading area. Another way to meet this requirement is to incorporate loading/unloading area containment into the aircraft fueling ramp drainage system.

Other codes that may apply to a self-service aircraft fueling system include:

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- SPCC rule—Typically applies when the aggregate above-ground storage capacity of the entire facility exceeds 1,320 gallons (excluding containers with a capacity under 55 gallons). This code requires the facility to meet the requirements of 40 CFR Part 112, including preparation and implementation of an SPCC plan.

- National Pollution Discharge Elimination System (NPDES)/Stormwater Pollution Prevention Plan (SWPPP)—Surface discharges must be addressed by an individual permit or a general permit.

- Clean Air Act—Potential requirements include an air permit, and use of emission controls such as conservation vents and vapor recovery systems.


- Underground storage tank rule—Applies when the underground storage capacity of aviation fuels exceeds 110 gallons. 40 CFR Part 280 requires overfill prevention, leak detection, and corrosion protection measures for underground storage tank systems.

- Fuel supplier requirements.

- Insurance provider requirements.
- Authority having jurisdiction requirements.

Self-service fueling facilities can be an economic boost for a general aviation airport. The key is to make sure your facility is installed properly and consistent with applicable codes. A fuel facility that does not meet the applicable legal requirements faces increased liability and can become an economic burden to the airport if it is found to have code violations.

The best practice for airports considering these facilities is to educate themselves about all of the issues surrounding self-service fueling.

Airports that have installed self-fueling facilities are generally pleased with their decision and are reaping the benefits of this amenity. Pilots also are winners when self-service is available because they have increased flexibility in their travel plans and can be assured that they have enough fuel for their trip. 

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