Standards for Aircraft Fuel Servicing & Fuel Safety Training

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Date: August 2013
Presentation Topics

• General Operations
• Fire Extinguishers for Aircraft Fuel Servicing Vehicles or Carts
• Smoking Restrictions
• Emergency Fuel Shutoff Systems
• Bonding
• Open Flames on Aircraft Fuel Servicing Ramps
• Self-Service Fueling
• Product Identification
• Advisory Circular 150/5230-4B
• Part 139 Inspection Photos
General Operations

• **Allowed to handle fuel:**
  
  *Only* personnel trained in
  
  – Safe operation of equipment and fuels they use
  – Operation of emergency controls
  – Procedures to be followed in an emergency

• **Marking of aircraft fueling vehicles**
  
  – Includes the name of the operator or responsible organization
  – Uses approved, legible signs on *both* sides of the exterior of vehicle
Fire Extinguisher Placement

• Required on aircraft fuel servicing vehicles or carts

• **Each aircraft fuel servicing tank vehicle** must have two listed fire extinguishers
  – Each must have a rating of at least 20-B:C
  – One must be mounted on each side of the vehicle

• **Hydrant fuel servicing vehicles or carts** must each have one listed extinguisher with a rating of at least 20-B:C
Fire Extinguisher Requirements

- Extinguishers must:
  - Be readily accessible from the ground.
  - Have contrasting colored paint on the area of the paneling or tank adjacent to or immediately behind the extinguisher(s) on fueling vehicles or carts.
ABC Fire Extinguisher Requirements

• **ABC multipurpose dry chemical fire extinguishers** (ammonium phosphate)
  - Shall **not** be placed on aircraft fueling vehicles, airport fuel servicing ramps, or aprons, or at airport fuel facilities
  - Multipurpose dry chemical (ammonium phosphate) fire extinguishing agent is known to cause corrosion to aluminum aircraft components
Smoking Restrictions

- A “no smoking” sign shall be posted prominently in the cab of every aircraft fuel servicing vehicle.
- Smoking equipment such as cigarette lighters and ash trays shall not be provided.
- If a vehicle includes smoking equipment when first bought, it must be removed or rendered inoperable.
Emergency Fuel Shutoff Systems – Part 1

• Each fuel system, shall have means to quickly and completely shut off fuel flow in an emergency.

• The emergency fuel shutoff system shall include **shutoff stations**
  – Placed outside of probable spill areas
  – Placed near the route that normally is used to leave the spill area or to reach the fire extinguishers provided for the protection of the area.
Emergency Fuel Shutoff Systems – Part 2

• At least one emergency shutoff control station shall be conveniently accessible to each fueling position.
• The emergency fuel shutoff system shall be designed so that operation of a station shuts off fuel flow to all hydrants that have a common exposure.
• Emergency fuel shutoff systems shall be designed so that they shut off the flow of fuel if the operating power fails.
Emergency Fuel Shutoff Placard Content

• Placard each emergency fuel shutoff station **EMERGENCY FUEL SHUTOFF** in letters at least 50 mm (2 in.) high.

• The method of operation shall be indicated by an arrow or by the word **PUSH** or **PULL**, as appropriate.

• Any action necessary to gain access to the shutoff device (e.g., **BREAK GLASS**) shall be shown clearly.

• Valves used to shut off a hydrant for maintenance purposes shall not have placards that could create confusion in an emergency.
Emergency Fuel Shutoff Placard Lettering, Placement

- Lettering shall be of a color contrasting sharply with the placard background for visibility.
- Placards shall be:
  - Weather resistant
  - Placed at least 2.1 m (7 ft.) above grade
  - Placed so that they can be seen readily from a distance of at least 7.6 m (25 ft.)
Emergency Fuel Shutoff Access, Testing

- **Access** to emergency fuel shutoff control stations shall be kept clear at all times.
- A **procedure** shall be established to notify the fire department serving the airport in the event of a control station activation.
- **Conduct operation** of emergency fuel shutoff systems at least every 6 months.
- Each individual **device** must be checked at least once during every 12-month period.
Bonding – Part 1

• Before making any fueling connection to the aircraft, the fueling equipment shall be bonded to the aircraft by use of a cable.
• Bonding provides a conductive path to equalize the electrical potential between the fueling equipment and the aircraft.
• The bond shall be maintained until fueling connections have been removed. That lets separated charges that could be generated during the fueling operation reunite.
• Grounding *during* aircraft fueling is not allowed.
Bonding - Part 2

• Bonding and fueling connections shall be disconnected in the reverse order of connection

• Reference:
  If anyone has questions about bonding, direct them to:
  Annex A section A.5.4 of NFPA 407
Open Flames on Aircraft Fuel Servicing Ramps

• Entrances to fueling areas shall be posted with “No Smoking” signs.

• Open flames on aircraft fuel servicing ramps or aprons within 15 m. (50 ft.) of any aircraft fuel servicing operation or fueling equipment shall be prohibited.

• The authority having jurisdiction can establish other locations where open flames and open-flame devices shall not be permitted.
Limits on Open Flames on Aircraft Fuel Servicing Ramps – Part 1

“Open flames and lighted open-flame devices” shall include, but not be limited to:

• Lighted cigarettes
• Cigars
• Pipes
• Exposed flame heaters
• Liquid, solid, or gaseous devices, including portable and wheeled gasoline or kerosene heaters
Limits on Open Flames on Aircraft Fuel Servicing Ramps – Part 2

• Heat-producing, welding, or cutting devices and blowtorches
• Flare pots or other open-flame lights
• Other:
  – Personnel shall not carry lighters or matches on their person while engaged in fuel servicing operations.
  – Lighters or matches shall not be permitted on or in fueling equipment.
Self-Service Fueling

Occupancy of the aircraft during self-service fueling shall be prohibited
Product Identification

Each aircraft fuel servicing vehicle or cart shall have a sign:

• On each side and the rear to identify the product
• With letters at least 75 mm (3 in.) high
• With lettering color that contrasts sharply with the sign background for visibility
• That includes the word FLAMMABLE and the name of the product carried, such as JET A, JET B, GASOLINE, or AVGAS
Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports

Reference:
Advisory Circular 150/5230-4B
Fuel Safety Training – Part 1

• 14 CFR §139.321 sets forth the requirements for fuel safety training at certificated airports.

• Types of training for employees of agents handling aviation fuel:
  – Supervisory training
  – Line service fuel safety training.

• Training performed under the supervisory training program must be obtained by completing a FAA authorized Supervisory Fuel Safety training course.
Fuel Safety Training – Part 2

• Line service fuel safety training for other employees may be provided by a supervisor who has completed the supervisory course or an authorized fuel safety training program.

• Chapter 2, section 2 of the AC lists required elements for Supervisory and Line Service fuel safety training.
Fuel Safety Training – Part 3

• Each student must receive hands-on training in the proper use of hand held fire extinguishers.
• Companies listed in the Addendum must provide this training or highlight the requirement for the student to receive this training from their local fire department or other local qualified source.
Fuel Safety Training – Part 4

• **Hands-on fire extinguisher training**, if not provided concurrently with the supervisory and/or line service training course in fire safety, must be completed within 60 days of completion of the supervisory training course in fire safety.

• Line service personnel completing an online or offsite course must have documentation of **onsite** training conducted by the tenant fueling agent’s trained supervisor.
Fuel Safety Training Certificates

• Certificates must differentiate between supervisor training and line service training.
• Chapter 4 sections 3a,b of the AC list required wording for Supervisor and Line training certificates.
Actual Part 139 inspection photos

The following slides show actual photos taken during Part 139 inspections in 2012 and 2013