NATO STANDARD

AFLP-3682

ELECTROSTATIC SAFETY CONNECTION PROCEDURES FOR AVIATION FUEL HANDLING AND LIQUID FUEL LOADING/UNLOADING OPERATIONS DURING GROUND TRANSFER AND AIRCRAFT FUELLING/DEFUELLING

Edition A Version 2

DECEMBER 2018

NORTH ATLANTIC TREATY ORGANIZATION

ALLIED FUELS AND LUBRICANTS PUBLICATION

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NATO LETTER OF PROMULGATION

4 December 2018

1. The enclosed Allied Fuels and Lubricant Publication AFLP-3682, Edition A, Version 2, ELECTROSTATIC SAFETY CONNECTION PROCEDURES FOR AVIATION FUEL HANDLING AND LIQUID FUEL LOADING/UNLOADING OPERATIONS DURING GROUND TRANSFER AND AIRCRAFT FUELLING/DEFUELLING, which has been approved by the nations in the PETROLEUM COMMITTEE, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 3682.

2. AFLP-3682, Edition A, Version 2, reflects one minor editorial change: in paragraphs 0101.d.(2) and f., "AFLP-3682" was replaced by "STANAG 3632".

3. AFLP-3682, Edition A, Version 2, is effective upon receipt and supersedes AFLP-3682, Edition A, Version 1, which shall be destroyed in accordance with the local procedure for the destruction of documents.

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5. This publication shall be handled in accordance with C-M(2002)60.

Zoltán GULYÁS
Brigadier General, HUNAF
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.	

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RECORD OF SPECIFIC RESERVATIONS

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SECTION 1 GENERAL

0101. Electrostatic safety procedures for handling all liquid fuel operations:

a. All equipment and facilities for storage, transportation or dispensing of liquid fuel shall be fitted with a strong durable metal bonding cable which can be handled safely. The minimum length of the cable is to be 20m (66 ft) and its resistance must not exceed 1000 ohm.

b. Before connecting any fuelling/defueling equipment they shall be electrically bonded using the bonding cable to equalize any static charges that may be present. During loading/unloading of fuel carrying vehicles or aircraft by means of a pantograph type loading arm, the bonding requirement is considered to be satisfied if the filling pipe has a continuous conducting path and connects directly to the vehicle filling point.

c. If a cathodic protection system is used the following precautions should be observed:

(1) whenever a cathodic protection system is in use there must be no electrical connection between the cathodic protection system associated with the filling facility and the refueling/dispensing equipment. The pipe and any component immediately associated with the filling point must be electrically isolated from the cathodic protected system;

(2) a separate grounding (earth) point shall be provided at the filling facility. The isolated sections must be bonded to this grounding (earth) point. Such grounding (earth) point must be located to take into account any restrictions liable to be imposed by the requirement at the cathodic protection system. Before connecting the fueling hose or pipe, the conducting wire from/to the refueller, tank truck or dispensing equipment shall be connected to this grounding (earth) point. For electrostatic dissipation purposes a resistance to ground of up to 10^4 ohm is considered adequate.

d. For fuelling/defuelling an aircraft proceed in the following sequence:

(1) for single point or close circuit refueling/defueling connect the fueling systems bonding cable to the aircraft ensuring contact with an uncoated metal surface. Plug-in jacks should be used where provided to minimize damage to the aircraft. During fueling/defueling

an aircraft by means of a pantograph type fuelling system, the bonding requirement is considered to be satisfied if this system has a continuous conducting path;

(2) for open-line fueling/defueling, the nozzle must be electrically connected to the structure of the aircraft before the tank to be filled is opened, and removed only after the tank is closed. This connection must be made by means of a bonding/grounding plug described in STANAG 3632;

(3) for refueling aircraft with engines running, in addition to bonding, the aircraft must also be grounded either through the refueling system or independently to a static ground having a resistance of less than 10^4 ohm.

e. After the fuelling/defuelling operation the fueling/defueling hose or pipe shall be disconnected before disconnecting the bonding/grounding cable.

f. Whenever ground support equipment is used which requires electrical grounding or whenever other functions of any kind requiring grounding are performed simultaneously with fueling/defueling function STANAG 3632 shall govern safety connections and cables to be used.

g. Electrostatic connections are not considered to be adequate for electrical power fault protection.

0102. This AFLP is implemented when a nation has ensured that all fuel handling and dispensing equipment meets the specifications detailed herein and has issued to its forces the required orders or instructions.

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