# FUEL TANK INERTING SYSTEM

**General Description**

The Fuel Tank Inerting System (FTIS) is a means to decrease Fleet Flammability Exposure within satisfactory levels. The FTIS gives protection to decrease the risk of fire and explosion in the center fuel tank. To get this protection, the FTIS causes inert conditions in the ullage space of the fuel tank. (Inert refers to no flammable, and ullage space refers to the space above the fuel). The FTIS has two sub-systems;

• the Inert Gas Generation System (IGGS)

• the Conditioned Service Air System (CSAS).

The Inert Gas System refers to the IGGS. The CSAS gives the IGGS a conditioned air stream of the correct temperature, pressure and flow. The IGGS removes oxygen from the air stream, and makes Nitrogen Enriched Air (NEA) and Oxygen Enriched Air (OEA).

The IGGS discards the OEA overboard, and puts the NEA into the ullage space of the fuel tank. The nitrogen is a chemically un-reactive gas because it does not support the hydrocarbon combustion reaction, and it is non-reactive with the materials of the fuel system components and equipment.

When the NEA goes into the fuel tank, it pushes the air with oxygen through the center tank vent line out of the fuel tank, (via the left-hand Vent and Surge Tank) therefore causing inert conditions within the center tank ullage space.

The fuel tank is inert when the average oxygen concentration is;

1) is below 12% at sea level up to 3048 m (10000ft),

2) increases linearly from 12% at 3048 m (10000ft) to 14.5% at 12192 m (40000ft),

3) or linearly extending the before 2) curve for altitudes above 12192 m (40000ft).

An IGGS Controller Unit gives system control, health monitoring and Built-In Test Equipment (BITE)



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