EXECUTIVE SUMMARY 2020

ARMY OZONE DEPLETING SUBSTANCES (ODS) ELIMINATION PROGRAM

MISSION

Minimize the impact of ODS laws and regulations on the Readiness of the Army war-fighter by eliminating their dependency on Class I & Class II ODS.

VISION

1. Support the development of affordable alternatives to ODS that do not significantly degrade the performance of the systems they support.

2. Promote the retrofit and/or upgrade of ODS equipment in Army legacy weapon systems at the earliest possible opportunities.

3. Ensure the continued availability of ODS for those fielded Army weapon systems whose Readiness remains dependent on it.

4. Ensure the readiness of future Army weapon systems by prohibiting the use of ODS in weapon system development, design and support.

BACKGROUND

Title VI of the Clean Air Act of 1990 codified the Montreal Protocol of 1987

- oo Class I ODS: halons, freons, carbon tetrachloride and methyl chloroform
- oo Production/import bans: halons - 1 Jan 94; freons and solvents - 1 Jan 96
- oo Ban on venting, restrictions on use and servicing certification requirements

National Defense Authorization Act FY 1993 (Public Law 102-484) (10USC2302)

- oo Section 325: Created the DoD ODS Reserve for mission-critical requirements
- oo Section 326: Banned Class 1 ODS in DoD contracts w/o Acquisition Official approval

PROGRAM STRATEGIES

Eliminate the dependency of Army installations on the commercial availability of Class I ODS, thru management of on-base ODS assets, by the end of FY03 ✓

Replace Class I ODS solvents in all Army industrial operations by FY07 ✓

Eliminate all CFC refrigerant use from Army weapon systems by FY08 ✓

Identify halon alternatives for all Army weapon system uses by FY09 ✓

Field a non-ODS hand-held extinguisher for the Abrams tank by FY10 ✓

Provide R-22 support as-needed for unit tactical requirements by FY11 ✓

Qualify a non-ODS hand-held extinguisher for Army Aviation use by FY18 ✓

Field a non-ODS hand-held extinguisher for Army Aviation ***ongoing***

Field alternatives for all Class II ODS refrigerant applications ***ongoing***

Conserve, recover, and reuse critical ODS installed in Army equipment ***ongoing***

Support Halon 1301 weapon system requirements until they are eliminated ***ongoing***

Support tactical R-22 system requirements until they are eliminated ***ongoing***

PROGRAM THRUSTS

Eliminate the use of halon and ODS refrigerants in all Army weapon systems

- oo Ground combat vehicle crew explosion protection
- oo Ground combat vehicle engine fire suppression
- oo Watercraft cooling and engine fire suppression
- oo Tactical vehicle and shelter air conditioning and refrigeration
- oo Aviation engine nacelle and flightline fire suppression
- oo General aviation and tactical systems fire suppression

Eliminate the use of halon and CFC refrigerants on all Army installations

- oo Fixed, total flooding area fire suppression
- oo Facilities air conditioning and refrigeration
- oo General facilities fire suppression

Eliminate the use of HCFC (Class II ODS) refrigerants on all Army installations

- oo Facilities cooling and air conditioning

Eliminate the use of ODS solvents in all Army applications

PROGRAM SUCCESSES (Base Year 1994)

ELIMINATED 99% OF THE ARMY'S USE OF ODS IN WEAPON SYSTEMS

Eliminated 100% of halon support for fire suppression on Army installations

Eliminated 100% of CFC refrigerants used for AC&R on Army installations

Eliminated 100% of CFC refrigerant use in Army legacy weapon systems

Eliminated 100% of Class I ODS solvents in maintenance & industrial operations

Eliminated 92% of the annual use of halon in Army legacy weapon systems

Established and operating the Army Reserve of Ozone Depleting Substances

-- Have over a million pounds of halon for legacy weapon systems
-- Have over 130,000 pounds of R-22 Class II ODS refrigerant

Completed research identifying viable alternative technology for halon explosion protection in the crew compartments of ground combat vehicles

-- **Fielded** in the Stryker Interim Armored Vehicle and Armored Security Vehicle
-- **Fielded** in non-halon explosion protection systems for up-armored vehicles

Qualified a non-ODS alternative hand-held extinguisher for Army aviation

-- First article testing of a full-scale production contract is ongoing

Retrofit engine fire suppression systems in the Abrams, Bradley, M9 ACE & FAASV

-- Only Service to accomplish halon retrofit of a legacy weapon system
-- Also retrofit all the halon engine compartment fire suppression systems in Army watercraft

Demonstrated cooling technology using Carbon Dioxide (CO_2) refrigerant

-- Fabricated first-ever CO_2 unitary Environmental Control Unit
-- Prototyped CO_2 air conditioning system on Up-Armored M1117

Coordinated a 2018 update to the Army policy for the elimination of ODS in weapon systems, signed by the Deputy Ass Secretary for Acquisition Policy and Logistics, addressing acquisition, operation and supply issues

Published a Guide to Preparing ODS Elimination Plans for Army Installations

-- All Army installations have ODS Elimination Plans in place

ONGOING EFFORTS

Maintaining the Readiness of Army units operating the Abrams, Apache, Blackhawk, Bradley, Chinook and FAASV through the management of the 1.3M lbs of Halon 1301 in the Army ODS Reserve, capable of providing all necessary support through 2050

Maintaining the Readiness of Army units using environmental control units dependent on R-22 through the management of the 130,000 pounds of this refrigerant in the Army ODS Reserve, capable of providing all necessary support through 2030

Supporting DCS, G-9 in the disposition of ODS recovered from facility systems

Supporting the Department of the Army G-4 in the development of policy for the servicing and maintenance of aviation and combat vehicle fire suppression systems

Supporting PEO GCS and operational Army units in field-level servicing and depot-level maintenance of fire suppression systems through policy, agents and equipment

Supporting PEO Aviation and operational Army aviation units with the management and release of safety-of-flight halon hand-held fire extinguishers

Supporting PM Main Battle Tank Systems with the interim management and release of halon hand-held fire extinguishers required for non-mission capable vehicles

Supporting PEO GCS in the development and qualification of non-halon and reduced halon explosion protection systems in the Abrams, Bradley, and FAASV systems

Supporting PEO C3T in the development and procurement of new, improved tactical cooling systems that do not use the Class II ODS refrigerant R-22

Supporting PEO C3T in the retrofit of tactical cooling systems that use R-438A refrigerant in place of the Class II ODS refrigerant R-22