EXHIBIT C – OTHER REFERENCES

REFERENCE 5

Dated: June 11, 1993.

Wayne S. Foren,

Associate Administrator for Investment.

[FR Doc. 93–14336 Filed 6–16–93; 8:45 am]

BILLING CODE 8025–01–M

Kansas City District Advisory Council; Public Meeting

The U.S. Small Business Administration Kansas City District Advisory Council and its Springfield Branch Office will hold a public meeting from 10 a.m. to 1 p.m. on Thursday, July 8, 1993 in the Kansas City District Office Training Room, 323 West 8th, suite 501, Kansas City, Missouri, to discuss such matters as may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, write or call Mr. Kurt Mueller, Acting Advisory Council Chairperson at (816) 474–5200, or Mr. Richard L. Osbourn, District Director, U.S. Small Business Administration, 323 West 8th, suite 501, Kansas City, Missouri 64105, (816) 374–6760.

Dated: June 11, 1993.

Dorothy A. Overal,

Acting Assistant Administrator, Office of Advisory Councils.

[FR Doc. 93–14236 Filed 6–16–93; 8:45 am]

BILLING CODE 8025–01–M

Oklahoma City District Advisory Council; Public Meeting

The U.S. Small Business Administration Oklahoma City District Advisory Council will hold a public meeting from 9 a.m. to 12 noon on Tuesday, July 13, 1993, at the Granny Had One Restaurant, 113 W., Harrison, Guthrie, Oklahoma, to discuss such matters may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, write or call Mr. W. Bruce Robinson, District Director, U.S. Small Business Administration, 200 NW. 5th Street, suite 670, Oklahoma City, Oklahoma 73102, (405) 231–5237.

Dated: June 11, 1993.

Dorothy A. Overal,

Acting Assistant Administrator Office of Advisory Councils.

[FR Doc. 93–14334 Filed 6–16–93; 8:45 am]

BILLING CODE 8025–01–M

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Notice No. 93–1]

Halon Replacement Performance Testing

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice.

SUMMARY: This notice announces a proposed research program to develop performance test methodologies which would lead to recommended airworthiness criteria for the evaluation of non halon fire suppression agents/systems to be used aboard airplanes and rotorcraft, and solicits alternate approaches, test methodologies and criteria.

DATES: Comments must be received on or before August 16, 1993.

ADDRESSES: Comments on this notice should be mailed to: Federal Aviation Administration, Aircraft Certification Service, Aircraft Engineering Division, Technical Analysis Branch, AIR–120, 800 Independence Avenue SW, Washington, DC 20591. Comments may be examined in room 806 weekdays, between 8:30 a.m. and 5 p.m., except Federal holidays.

FOR FURTHER INFORMATION CONTACT: John J. Petrakis, Aircraft Engineering Division (AIR–120), Aircraft Certification Service, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; Telephone [redacted].

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to comment on this research and development program by submitting such written data, views, or arguments as they may desire. Comments relating to the environmental, energy, federalism, or economic impact that might result from adopting the test procedures in this notice are also invited. Substantive comments can include cost estimates. Comments should identify the notice number and should be submitted to the address above. All comments received on or before the closing date will be considered by the Administrator before proceeding. The research program outlined in this notice may be changed in light of comments received. All comments will be available, both before and after the closing date for comments in the Technical Analysis Branch, for examination by interested persons. A report summarizing each substantive public comment concerning this notice will be filed in the Technical Analysis Branch. Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must include a preaddressed, stamped postcard on which the following statement is made: "Comments to Notice No. 93–1".

The postcard will be date stamped and mailed to the commenter.

Availability of Notice

Any person may obtain a copy of this notice by submitting a request to the Federal Aviation Administration, Office of Public Affairs, Attention: Public Inquiry Center, APA–430, 800 Independence Ave. SW., Washington, DC 20591, or by calling (202) 267–3484. communications must identify the notice number.

Background

The FAA participated in the "International Symposium on Halon Replacement in Aviation" on February 9 and 10, 1993. The symposium held in Reston, Virginia was sponsored by the Aerospace Industry Association (AIA) and the Halon Alternatives Research Corporation (HARC), and was well attended by industry, particularly airframe and powerplant manufacturers. The symposium focused on the aviation industries concerns over the eventual discontinuance of the production of halon. The terms of the recent Copenhagen amendment to the United Nations 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, agreed to by the United States and other developed countries, were to cease the global production of Halons in January 1994. The affect the termination of halon production would have on the aviation industry was discussed by five working groups: certification requirements, research and development of alternate systems, implementation of alternate systems, collecting halon data, and recycling systems.

The symposium's preliminary conclusions regarding alternate agents/systems were as follows: The Federal Aviation Regulations (FARs)/Joint Airworthiness Regulations (JARs) do not specify the use of halon for fire suppression, except for hand fire extinguishers in the cabin; no regulatory action will be necessary for the certification of new fire suppression systems; fire hazards and test protocols defining the performance criteria for fire suppression systems must be developed by FAA/United States Air Force (USAF) research and development (R&D) programs; and guidance material for

approving non halon systems will be developed from the R&D performance criteria. Furthermore, alternate agents must be evaluated for their effectiveness, toxicity, corrosion and ozone depletion potential.

In addition, the symposium recommended that the FAA issue a public notice soliciting input from all segments of the industry, on the specifics of defining performance criteria for halon alternate agents/systems, and to invite international industry and JAA participation.

Discussion of FAA Halon Alternative Program

The objective of the FAA's technical program would be to develop acceptable performance test criteria to facilitate the approval of non halon fire extinguishment/suppression agents and systems.

To date, all required fixed fire suppression systems aboard transport category aircraft have employed Halon 1301 (CBrF3) extinguishing agent. System applications include engine nacelles/auxiliary power units (APU's), cargo compartments and lavatory trash receptacles. The FAA also requires these aircraft to carry a minimum of two Halon 1211 (CBrClF2) hand fire extinguishers.

Thus far, the replacement agents developed by industry carry a weight and volume penalty of a factor of two or three times that of halon. Because of the weight penalty and increased cost, the airlines and airframe manufacturers are concentrating their efforts on the use of reclaimed Halon 1301 for as long as possible. However, the eventual unavailability of reclaimed Halon 1301 and the possibility of future regulations that may forbid its use amplify the importance of developing credible alternative agents/systems and reasonable certification criteria.

The FAA program would concentrate on the four application areas, engine nacelles/APU's, cargo compartments, lavatory trash receptacles, and hand fire extinguishers. The basic approach would be to use full-scale evaluation fire tests to study the impact of various parameters on the level of protection provided by alternative agents/systems. Subsequently, a minimum acceptable level of performance would be defined with the research results. Standard performance tests would be developed and validated for each application and ultimately used as the basis for approval.

Promising new agents and systems would be evaluated to determine their relative effectiveness, as compared to halons, and acceptability in specific fire protection applications. The approach and level of effort for each of the application areas is relatively distinct and independent because the fire threat and environmental conditions are different. Finally, based on the research, acceptable compliance performance criteria would be established and recommended for the approval of non-halon agents and systems in the four aforementioned application areas.

This program will be coordinated with an aviation authorities management team to oversee the technical requirements for the airworthiness regulatory authorities and to ensure coordination and harmonization of alternative agent/system certification compliance criteria.

The major tasks of the program would be as follows:

- Develop Test Articles
- Conduct Evaluation Tests
- Develop Minimum Acceptable Levels of Performance
- Develop Standard Performance Tests
- Develop and Issue Certification Compliance Guidance

Develop Test Articles

The building and instrumenting of full-scale test articles is necessary to perform proper evaluation fire tests. The full-scale evaluation fire test results would be used to form the basis for defining agent/system performance criteria. The full-scale performance criteria would be critical to deriving more simplified compliance criteria.

Engine Nacelles: An engine nacelle simulator would be designed and constructed at the FAATC. The simulator would be capable of varying the nacelle volume in order to approximate the range of volumes of engines used on narrow and wide body airplanes. A large fan would provide a variable nacelle air flow rate. In addition, the simulator would be designed for heating the engine casing in order to examine hot surface ignition. Obstructions would be mounted in the nacelle area to simulate the effect of line and equipment "clutter" on agent penetration and extinguishing effectiveness. To validate the new engine simulator and gain confidence in the data collected, comparison, tests, using B–737 parameters, would be made with the Aircraft Engine Nacelle (AEN) Facility at Wright Paterson Air Force Base (WPAFB).

Cargo Compartment: Existing wide body (TC–10) and narrow body (B–707) fuselages in the FAATC Full-Scale Fire Test Facility would be utilized as cargo compartment test articles. Standard cargo containers and test containers also would be available. Thus, test articles would be available to examine the range of sizes and shapes of present cargo compartments.

Lavatory Trash Receptacles: Trash receptacles representative of the current transport fleet would be used as test articles. These receptacles are available in lavatories which were used during the "hidden fire program" (ref. FAA Report DOT/FAA/CT 91/2). The receptacles would be from narrow and wide body aircraft and would include surrounding hardware and materials such as the trash entrance chute.

Hand Extinguishers: A test article would be developed to evaluate the effectiveness of alternate agents used in hand extinguishers as compared to Halon 1211. The fire hazard against which the hand extinguisher must protect would be a hidden in-flight fire. It is envisioned that the hidden fire hazard would be patterned after the in-flight fire which occurred on a trans-Atlantic Delta L–1011 flight on March 17, 1991. In this incident, Halon extinguishers were blindly discharged into air return grills, successfully extinguishing a severe electrical fire beneath the floor that was spreading into the cabin, and likely saving the airplane and its 231 occupants. Although Halon 1211 extinguishers were originally required by the FAA for fighting a seat fire accelerated by spilled gasoline (a hijacking scenario), it is anticipated that a hidden fire hazard criterium would be recommended and the extinguishment capabilities of Halon 1211 would be maintained as the performance standard for hand fire extinguishers.

The hand extinguisher test article would use a symmetrical half of a fuselage cross section or a modified existing fuselage barrel section. A test article also would be required to examine the toxicity associated with an agents use on in-flight fires. A series of tests are envisioned similar to previous Halon 1211 FAATC tests that demonstrated the non-toxic affects during typical in-flight fire extinguishment (reference FAA Report DOT/FAA/CT–82/111).

Evaluation Tests

As previously mentioned, full-scale evaluation fire tests would provide the data that would be the primary basis for the development of performance criteria for agents and systems. Therefore, the design of the various test series, as well as the agreed-to minimum acceptable levels of performance, would dictate the severity of the performance criteria. Most critical to the performance criteria will be the nature of the fire tests or fire

hazard scenarios these agents/systems would be required to protect against. The crucial task would be to define these hazards/scenarios. The question to be resolved would be whether the fire hazard/scenario should be a worst case condition or a more typical situation which may have a greater probability of occurrence. Designing to the worst case scenarios would lead to more expensive replacement systems.

Engine Nacelles: Engine nacelle evaluation tests must cover the range of nacelle design and operational parameters as well as potential accidental fire conditions. Nacelle volume directly relates to the total quantity of agent required. Therefore, typical narrow body and wide nacelle volumes would be examined. Air velocity in the nacelle is an important parameter, since it impacts both the peak agent concentration and the length of time the agent remains present. The minimum concentration over a one-half second is specified in Advisory Circular (AC) 20–100, "General Guidelines for Measuring Fire-Extinguishing Agent Concentration in Powerplant Compartments", dated September 21, 1977. Therefore, maximum air velocities through the nacelle should be created in the simulator during evaluation tests. As with any fire test, realistic and repeatable conditions are necessary. Jet fuel, hydraulic fluid and lubricants, as appropriate, would be utilized as fuel sources at maximum leakage rates and critical failure points. From previous experimental studies, it is known that the preburn time and the amount of obstructions, i.e. "clutter", are also important parameters. Actual engine casing temperatures also would be considered and simulated as potential ignition sources.

Selected alternate agents/systems would be evaluated with respect to their ability to extinguish engine fires and prevent reignition. The test results would identify those agents and/or systems best suited as Halon 1301 replacements. Critical design parameters would also be identified.

Cargo Compartments: It is envisioned that cargo compartment evaluation tests would be conducted on three configurations: narrow body (Class C), wide body (Class C) and wide body-combi (Class B). This should bracket the applicable Halon 1301 fire suppression systems used in cargo compartments. At least, three general types of alternate agents/systems would be used and their effectiveness and characteristics against cargo fires evaluated. The types would include a low boiling point gaseous total flooding agent, water fog and dry powder. The latter is a recent development with total flooding characteristics. System designers have claimed the powder remains suspended in the air for long periods of time. Candidate alternate agent/systems would be determined from these evaluation tests. Another potential solution is a hybrid system comprised of water spray for initial fire knockdown and nitrogen, generated from gas separation membranes, for prolonged inerting. However, this approach will require significant development.

Multiple fire scenarios would be employed to cover the spectrum of potential fire conditions. Cargo fires in loaded standard cargo containers would be compared with pallet cargo fires. The location of the fire amongst cargo stacked on a pallet is very important. Whether the fire begins on the periphery, on the top or bottom, or deep within the center of the cargo, affects the characteristics of the fire, and possibly compromises the effectiveness of the suppression system. Ignition of peripheral cargo tends to produce early flaming whereas ignition of buried cargo is smokier and takes longer to produce open flaming.

The type of detector(s) used has a bearing on the effectiveness of a particular agent/system. Also, for some gaseous agents, it may be more difficult to suppress a fire that originates at the top of cargo near the ceiling of the cargo compartment. These agents will settle to the bottom of the compartment with time.

Another important parameter would be the volume of air surrounding the cargo. Currently approved Halon 1301 systems are required to measure agent concentrations inside an empty compartment. Systems with concentrations that exceed prescribed minimum levels have been approved. However, the addition of cargo raises the peak Halon concentration level following agent discharge because of the reduced volume of air. With higher agent concentrations and reduced air volumes, the rate of agent loss increases because the volumetric leakage rate is constant and is a greater fraction of the reduced air volume. Because of these factors, it is conceivable that the duration of protection in a fully loaded cargo compartment could be less than indicated by agent concentration measurements made inside empty cargo compartments. At least, two cargo volumetric loading configurations would be studied at 50 and 90 percent capacity. Furthermore, the more highly loaded configurations would make it more difficult to provide complete coverage with agents that may not behave the same as a true total flooding agent, e.g. water fog and dry powder.

Lavatory Trash Receptacles: Testing of alternate agents/systems for use in lavatory trash receptacles would be conducted to determine the minimum quantity of agent necessary to completely extinguish a known fire hazard. The standard fire scenario would be a paper towel fire in a typical trash receptacle. Because it is important to develop a realistic and repeatable standard fire scenario, a fixed quantity of paper towels filling a typical size trash receptacle would be used. The ignition source would be located at the bottom of the container to simulate a deep-seated fire challenge for the alternate agent/system.

Hand Extinguishers: Alternate agents for hand extinguishers would be expected to be equivalent to Halon 1211 in terms of their effectiveness against hidden fires. A full-scale test article, as described earlier, would be used to evaluate alternate agents/extinguishers. Full-scale test results would be used to develop a small-scale performance test for appraising agent/extinguisher effectiveness against hidden fires. The performance test would form the basis for certification approvals.

A crucial and challenging aspect of the full-scale test article is the development of a realistic and repeatable fire hazard. In the previously mentioned L–1011 incident, insulation batting, electrical wiring, flooring, and sidewall paneling were heavily involved in the fire, and the accumulation of debris and contamination from years of service contributed to the fire spread. It is very difficult to attain consistent burns, or even sustained burning in some cases, with such an array of complex, fire resistant materials.

In order for an agent/extinguisher to be effective against a hidden fire, it must possess properties that promote agent expansion and penetration into voids and throughout empty spaces. Gaseous or low boiling point agents such as the halons, are highly effective against this type of fire scenario. Unfortunately, some alternate agents are more toxic than Halon 1211. Therefore, agents that are found to be effective against hidden fires would be evaluated under full-scale conditions for their potential toxic threat during inflight firefighting. Virgin agent and agent decomposition products would be measured and their toxic threat to humans would be calculated based on available data and models. A worst case fire scenario that maximizes the agent's toxicity would be utilized.

Minimum Acceptable Levels of Performance

Before or concurrent with evaluation tests, the minimum acceptable levels of performance would be established. Consideration of how this would be accomplished is discussed below.

Engine Nacelles: For Halon 1301 engine fire extinguishing systems, the FAA certification basis has been a flight test demonstration that shows a specified halon concentration level has been attained at all measurement locations over a specific time. Within this level of performance is a safety factor for the quantity of halon needed to extinguish engine fires. However, it is recognized that smaller quantities of halon will extinguish engine fires. Therefore, the issue to be resolved is whether the minimum acceptable level of performance of alternative agents maintain the same safety factor, which will need to be determined for the particular alternative agent used, or should the quantity of alternate agent produce the minimum concentration levels necessary to extinguish typical engine test fires.

Cargo Compartments: The level of protection provided by cargo compartment fire suppression systems using alternate agents/systems also would be expected to be equivalent to current Halon 1301 systems. Unlike engine systems, the goal in cargo compartments is to suppress the fire, because it is virtually impossible to extinguish a deep-seated cargo fire with a fixed system. What constitutes suppression is open to interpretation and would be defined. Does suppression mean the extinguishment of any initial flames with no evidence of open flaming over the duration of protection, or does suppression require that the allowable thermal exposure of cargo liners and protected flight-critical components be set at some minimum level, irrespective of the incidence of open flames?

Lavatory Trash Receptacles: The level of protection required of a trash receptacle extinguishing system would be the complete extinguishment of a deep-seated paper towel fire. The need for complete extinguishment, as opposed to suppression, is justifiable based on the possibility, probability, and past experience of passengers illegally smoking in lavatories and disposing their smoking materials into the trash chute. Before the ban on lavatory smoking, a survey revealed that the trash receptacles were being improperly used for disposal of smoking materials. At least one aircraft accident was caused by a lavatory trash receptacle fire believed to have been started by a cigarette (Varig, Boeing 707, Paris, France, 1973, 123 fatalities).

Hand Extinguishers: Of the four application areas for alternative agents/systems, the issue of toxicity of Halon 1211 hand extinguishers is of paramount concern. The level of toxicity allowed during the discharge of alternate agent hand extinguishers when fighting an in-flight fire would be established. The toxicity associated with the discharge of halon hand extinguishers originally was determined with seat/gasoline fire extinguishment tests conducted by the FAA. These tests demonstrated that the effects of human exposure to the virgin agent and its decomposition products were insignificant. Consequently, what this program would resolve is whether to require the negligible toxic threat to be maintained by alternate agents or to allow an increase in toxicity, but below a harmful level, to assure the usage of an as effective alternate agent as Halon 1211 in hand extinguishers.

Standard Performance Tests

Engine Nacelles and Cargo Compartments: A standard performance test for gaseous alternate agent suppression systems for engine nacelles and cargo compartments is considered to be impractical. As in the past, flight test measurement of gaseous agent concentrations would be required for each aircraft and engine model to assess the effect of variations in the protected volume, airflow rates (engine nacelles) and leakage rates (cargo compartments), as well as any other model-to-model variables. Although not a standard performance test, a cargo compartment or engine nacelle mockup of a particular model may be acceptable if the applicant plans to use a non-gaseous agent (dry powder or water) and is fearful of the possibility of agent damage to the aircraft or costly cleanup, especially if successive tests are a distinct possibility.

Lavatory Trash Receptacles: A test method for lavatory trash receptacles would be developed using the test article typical of a trash receptacle and the standard paper towel fire source mentioned above. The pass/fail criteria would be the complete extinguishment of the fire source.

Hand Extinguishers: A standard small-scale performance test for hidden fire extinguishment using hand extinguishers would be developed.

The test being considered would define the essential elements which are a controlled fire source, a port or grille into which the extinguisher is discharged, and a convoluted enclosed path between the discharge point and fire source. The design of the performance test would be patterned after the full-scale hidden fire test article. A correlation of test data with the two devices would be established. Once a prototype performance test has been developed the next step would be its standardization.

In general, performance test criteria standardization would be accomplished with public participation. If need be, round robin testing would be used to assure conformity of results.

Certification Requirement Guidance

The final product would be the development and issuance of specific certification requirement guidance for the approval of alternate agents/systems. In each application area, the goal would be to develop a basis for approving methodologies that are similar to what is currently being used for approving halon systems. For example, approval of gaseous agent systems in cargo compartments and engine nacelles/APU's would be based on measured agent concentration profiles and whether prescribed minimum values are exceeded during flight tests (non-fire conditions). The prescribed values would be largely based on the full-scale evaluation test results. Hand extinguisher approval would follow current practices with the additional requirement of passing a hidden fire performance test. The approach that would be used for the approval of non-gaseous agents, such as water and dry powder, is unknown and open for consideration.

Monitor Developments

The number of halon replacement agent activities outside the civil transport arena requires a concerted effort to monitor new agent/system development and evaluation. FAATC personnel will continue to participate in National Fire Protection Association (NFPA) committees developing standards for Halon replacements. In addition, the activities of other government agencies, including Department of Defense (DOD), the Coast Guard and National Institute of Science and Technology (NIST) will be closely monitored and, if advantageous, cooperative programs will be established. Also, laboratory tests will be conducted to screen prospective new agents before consideration of full-scale fire test evaluations. Agent toxicity, corrosiveness, and other potential problems will be addressed. It may become necessary to develop a test article and test method for surge tank explosion suppression systems.

Issued in Washington, DC, on June 11, 1993.

David W. Ostrowski,

Acting Manager, Aircraft Engineering Division, Aircraft Certification Service.

[FR Doc. 93-14329 Filed 6-16-93; 8:45 am]

BILLING CODE 4910-13-M

Research, Engineering and Development Advisory Committee; GNSS Technology Subcommittee; Meeting

Pursuant to section 10(A)(2) of the Federal Advisory Committee Act (Pub. L. 92-362; 5 U.S.C. App. I), notice is hereby given of a meeting of the GNSS Technology Subcommittee of the Federal Aviation Administration (FAA) Research, Engineering and Development (R,E&D) Advisory Committee to be held Tuesday, July 6, 1993, at 1 p.m. The meeting will take place at the Federal Aviation Administration, 800 Independence Avenue, SW., Washington, DC, in the MacCracken room (round room) on the tenth floor.

The agenda for this meeting will include: Review and discussion of the proposed task statement; organization of the effort to develop a report and recommendations; overview of current FAA technology plans and schedules associated with the U.S. global positioning system. This subcommittee will attempt to ensure that the FAA's program addresses all the right technology issues.

Attendance is open to the interested public but limited to space available. With the approval of the Subcommittee Co-Chairmen, members of the public may present oral statements at the meeting. Persons wishing to present oral statements, obtain information, or plan to access the building to attend the meeting should contact Ms. Jan Peters in the Office of the Associate Administrator for System Engineering and Development, FAA/ASD-6, 800 Independence Avenue, SW., Washington, DC 20591, telephone (202) 287-8543.

Members of the public may present a written statement to the subcommittee at any time.

Issued in Washington, DC, on June 11, 1993.

Martin T. Pozesky,

Executive Director, Research, Engineering and Development Advisory Committee.

[FR Doc. 93-14326 Filed 6-16-93; 8:45 am]

BILLING CODE 4910-13-M

Federal Highway Administration

Environmental Impact Statement: Johnson County, KS

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of intent.

SUMMARY: The FHWA is issuing this notice to advise the public that an Environmental Impact Statement (EIS) will be prepared for a proposed highway project in Johnson County, Kansas.

FOR FURTHER INFORMATION CONTACT: Johnny R. Dahl, Field Operations Engineer, FHWA, 3300 South Topeka Boulevard, suite 1, Topeka, Kansas 66611-2237, Telephone: (913) 267-7284; Warren Sick, P.E., Chief of Bureau of Design, Kansas Department of Transportation, Docking State Office Building, Topeka, Kansas 66612; Telephone: (913) 296-3525; James F. Pilley, P.E., Box 401, Courthouse, Olathe, Kansas 66061, Telephone: (913) 782-2640.

SUPPLEMENTARY INFORMATION: The FHWA, in cooperation with the Kansas Department of Transportation, and Johnson County will prepare an Environmental Impact Statement for a proposed highway project known as the 21st Century Parkway. If constructed, the project would be primarily on new location and developed initially as a two-lane road (ultimately as a four-lane roadway). The study corridor begins at the existing K-7/Shawnee Mission Parkway interchange, passes to the east side of DeSoto, extends southerly along the west side of the Cedar Creek development and the Johnson County Industrial Airport, extends southeasterly to U.S. 169 north of Spring Hill, and then extends easterly across the southern part of Johnson County passing south of Stilwell and intersecting the State Line in the vicinity of 195th Street; a distance of approximately 57.9 kilometers (36 miles).

The project is intended to provide relief for projected traffic demands in western and southern Johnson County, Kansas. Several alternatives will be considered including the no build. Also incorporated into the study will be various alignments within the corridor.

One public information and two *Citizen's Group* meetings have been held to keep the local citizens informed of the study. These meetings have provided early coordination with appropriate Federal, State, local agencies and private organizations who have expressed interest in this proposed project.

Public hearing(s) will be held during the development of the Environmental Impact Statement. Public notice will be given for the time and place of the hearing(s) and where the Draft Environmental Impact Statement will be available for review and comment.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments and questions concerning this proposed action and the EIS should be directed to the FHWA, Johnson County, or the Kansas Department of Transportation at the addresses provided.

Johnny R. Dahl,

Division Administrator, Kansas Division.

[FR Doc. 93-14171 Filed 6-16-93; 8:45 am]

BILLING CODE 4910-22-M

Federal Railroad Administration

[Docket No. RSAD-91-3]

Proposed Test Program to Evaluate Random Drug Testing Rate

AGENCY: Federal Railroad Administration (FRA), Department of Transportation (DOT).

ACTION: Notice of second extension of test program.

SUMMARY: FRA will extend, for an additional 12 months, an experimental program designed to evaluate the extent to which the rate of random drug testing affects general deterrence. On July 1, 1991, three Class I freight railroads and one commuter railroad were allowed to begin testing at a 25 percent rate rather than the 50 percent rate required by FRA's alcohol and drug regulation. Three additional Class I freight railroads and one additional commuter railroad constituted a control group that continued to test at 50 percent. In the program's first year, positive test rates did not vary appreciably between the experimental and control groups. After extending the program for a second year, FRA has to date obtained an additional three quarters of data which continue to show no marked difference in deterrence between the two groups.

FRA believes that another program extension is necessary because the Department of Transportation is considering lowering the testing rate for its random drug testing programs for transportation employees. Extending FRA's experimental program for a third year would provide additional data for departmental study and could support future rulemaking activity.

DATES: (1) FRA intends to extend the current conditional waivers for one year effective July 1, 1993.

(2) Written comments should be received by August 1, 1993. Late filed comments will be considered to the extent practicable.

ADDRESSES: Comments shall be sent to Docket Clerk, Docket No. RSAD–91–3, Office of the Chief Counsel, Federal Railroad Administration, 400 7th Street SW., room 8201, Washington, DC, 20590. Persons wishing the FRA to acknowledge receipt of their comments should submit with those comments a pre-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. RSAD–91–3." The postcard will be dated and time stamped and returned to the commenter. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons, between 8:30 a.m. and 6 p.m. Monday through Friday. To schedule an appointment to examine the docket, please contact Patricia McLaughlin, Docket Clerk (RCC–30) (Telephone: (202) 366–0635).

FOR FURTHER INFORMATION CONTACT: Walter C. Rockey, Executive Assistant (RRS–3), Office of Safety, FRA, Washington, D.C. 20590 (Telephone: (202) 366–0897) or Patricia V. Sun, Trial Attorney (RCC–30), Office of Chief Counsel, FRA, [redacted] D.C. 20590 (Telephone: [redacted]).

SUPPLEMENTARY INFORMATION:

Background

In February of 1991, the Association of American Railroads (AAR) filed a petition in accordance with 49 CFR 211.51, requesting that FRA implement a test program that would temporarily suspend compliance with 49 CFR 219.601(b)(2)(ii). This section, first published on November 21, 1988 [53 FR 47103], requires each railroad, in the second year of that railroad's random testing program, to conduct a sufficient number of random tests during the year to equal at least 50 percent of the number of its covered service employees. (Subsequent amendments to the alcohol and drug regulations, which did not affect Section 219.601(b)(2)(ii), were published on December 27, 1989 [54 FR 53238] and June 4, 1990 [55 FR 22791]). AAR proposed that FRA permit an experimental group of railroads to test at a 25 percent rate for one year, for comparison against a group of control railroads that would continue to test at a 50 percent rate. Data from the two groups of railroads would then be analyzed to determine the effect of different testing rates on deterrence.

FRA agreed with the AAR that an experimental program would be useful in evaluating the testing rate. FRA granted the four test railroads a waiver from the 50 percent testing requirements effective July 1, 1991. The four test railroads and the four control railroads were required to submit quarterly test data throughout the test year for monitoring by the FRA.

In the first year of the program, the test railroads conducted 10,629 random tests, with 89 positive for a rate of 0.90 percent. The control railroads conducted 17,152 tests and had 154 positive for a rate of 0.90 percent. The railroad industry, in calendar year 1991, conducted 50,436 tests and had 477 positive for a rate of 0.89 percent.

On June 15, 1992, the AAR requested that FRA continue the experimental program for another year, and the request was granted. In the first three quarters of the program's second year, the test railroads conducted 7,007 random tests, with 66 positive for a rate of 0.94 percent. The control railroads conducted 12,687 tests and had 107 positive for a rate of 0.84 percent. The railroad industry, in calendar year 1992, conducted 42,599 tests and had 336 positive for a rate of 0.79 percent.

FRA and the AAR agree that the difference in deterrent effect between those random testing programs conducted at the 50 percent level and those conducted at the 25 percent level shown by the above test results is not large enough to be significant. On May 20, 1993, the AAR submitted a request for an additional extension. Accumulation of additional data is especially desirable at this time because of a recent departmental initiative considering modification of DOT random drug testing programs. On December 15, 1992, FRA, along with the Office of the Secretary and the four other operating administrations that currently require random drug testing, published an Advance Notice of Proposed Rulemaking seeking public comment and data on whether other, less costly alternatives to the current 50 percent random testing program could maintain an adequate level of deterrence and detection of illegal drug use [57 FR 59778]. DOT has studied, and will continue to study, data from FRA's experimental program in its consideration of possible alternatives to the current DOT program.

Implementation

FRA will continue to require all participating railroads to comply with its previously established protocols covering test conditions and reporting requirements. FRA does not believe that further opportunity for oral presentation is necessary for this second program extension, but is providing an additional opportunity for written comments.

By letter granting an extension of the test program, FRA will extend the current conditional waivers for an additional year. FRA intends for the third year of this experiment to begin on July 1, 1993, and continue for at least four calendar quarters. FRA continues to reserve the right to terminate or modify the test program on 10 days notice if any party fails to comply with any conditions specified in the protocols, or if quarterly reports indicate a particularly serious degrading of performance by one or more of the experimental railroads (as reflected by the random testing positive rate and/or other information available to FRA). FRA also continues to reserve the right to terminate if FRA review of railroad alcohol/drug program administration indicates material deficiencies.

Authority: 45 U.S.C. 431(c), 437; 49 CFR 1.49(m), 211.43, 211.51.

Grady C. Cothen, Jr.,

Associate Administrator for Safety.

[FR Doc. 93–13949 Filed 6–16–93; 8:45 am]

BILLING CODE 4910–06–P

National Highway Traffic Safety Administration

[Docket No. 93–43; Notice 1]

Report on NHTSA's Cost Estimating Methodology

AGENCY: National Highway Traffic Safety Administration (NHTSA), DOT.

ACTION: Notice of availability.

SUMMARY: NHTSA has prepared a detailed report explaining how the agency estimates the costs that arise from its safety standards and other regulations. This notice announces that this report is available to all interested parties.

ADDRESSES: Interested persons may examine this report and/or obtain a copy of it from: NHTSA Docket Section, room 5109, 400 Seventh Street SW., Washington, DC 20590. Requests for this report must refer to Docket No. 93–43; Notice 1. The NHTSA Docket Section is open to the public from 9:30 am through 4 pm Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Mr. Kenneth W. Rutland, Office of Vehicle Safety Standards, Engineering Systems Staff (NRM–13), room 5320, 400 Seventh Street SW., Washington, DC 20590. Mr. Rutland can be reached by telephone at (202) 366–6565.

SUPPLEMENTARY INFORMATION: NHTSA has prepared a report that describes in

REFERENCE 7

5/00
IHEWG
SLIDES
Germany
Harry
Webster

Hand Held Fire Extinguisher Minimum Performance Standard Status

* MPS is posted on the Fire Safety Web Page
  Revised April 2000
  http://www.fire.tc.faa.gov

* Direct comments on the MPS to:
  Harry.Webster@tc.faa.gov

HH MPS-Status

* BACKGROUND

- The MPS is designed to enable the certification of new environmentally safe agents as a replacement for Halon 1211 on transport aircraft.

- Agents must be SNAP approved.

- Extinguishers must be of approved type, ie UL

- Agent must pass two additional performance tests as discribed in the MPS:
  Seat/Fire Toxicology Test (FAA Tech Center)
  Hidden Fire Test (Agent/Extinguisher)

HH MPS-Status

* Seat/FireToxicology Tests

  - TC-10 Tests Are Complete

  - Five agents were submitted:

    Dupont FE-36
    Great Lakes FM-200
    POWSUS Envirogel
    American Pacific Halotron
    North American Fire Guardian P IV

HH MPS-Status

* Seat/FireToxicology Tests

  - All submitted agents passed proposed Hydrogen Flouride Toxicology Limit Criteria:

    200 ppm (V/V) for highest one minute average, and
    100 ppm (V/V) for highest five minute average

HH MPS-Status

* Hidden Fire Test

- Test standardization complete

- 2.5 lbs Halon 1211 extinguishes nine of twenty cup fires

- Certification will be for agent/extinguisher hardware combination

- Negotiating with Underwriters Laboratory (UL) to operate test

HH MPS-Future

* Issues to be resolved:

- Toxicology of any additional new agents

- Publication of test results

- Hidden Fire Test: Independent Lab Certification

- Implementation of the MPS

REFERENCE 14

Statistical Summary of Halon Handheld Fire Extinguisher Discharges Onboard Boeing Commercial Airplanes

Mike Madden

10/1/2013

Statistical summary of reported Halon handheld fire extinguisher discharges on Boeing commercial airplanes.

Introduction

Data on airplane handheld fire extinguisher discharge events was collected from four different souces and is summarized in this paper. The data sources included discharges on Airbus airplanes in addition to Boeing, but the Airbus events appeared to be under-reported so they were not included in this summary. The databases may not include all Halon handheld fire extinguisher discharges, but this summary is still fairly conservative due to the assumptions made and since it is based on four different sources of data.

Data was obtained from the following sources:

- NASA Aviation Safety Reporting System (ASRS)
- FAA Service Difficulty Reporting System (SDR)
- Boeing Airplane Safety Event database (ASE)
- McDonald Douglas Safety Information System (SIS)

Events included discharges while the airplane was parked on the ground during maintenance or at the terminal with no passengers on board.

Many of the discharges were on actual fires, so neat agent toxicity is less of a concern since the the agent reacts with the fire and forms byproducts.

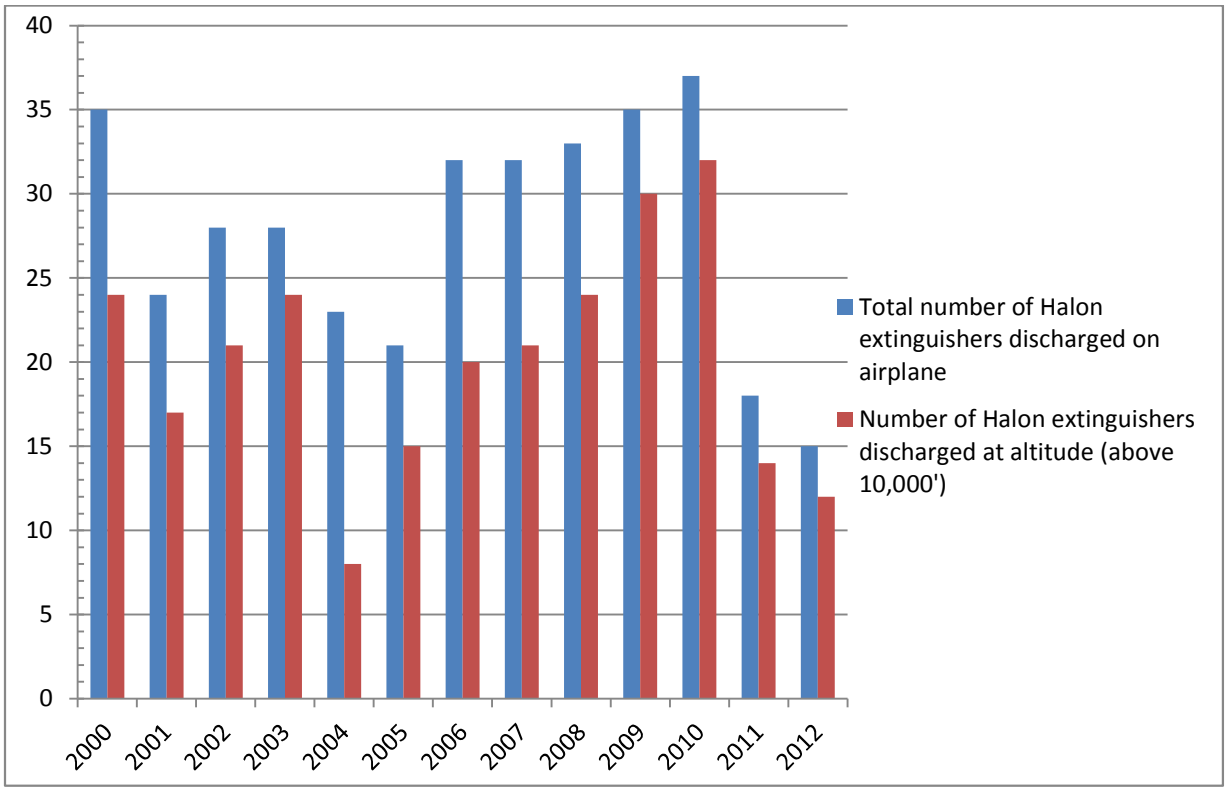
The following assumptions were used when tabulating the data:

- If the reported event did not list the type of extinguisher (water, Halon, other), it was assumed to be Halon.
- If the reported event did not list the phase of flight the discharge occurred, it was assumed to be at altitude (above 10,000').
- If the reported event was fire extinguishers that were low on pressure or empty (leaks), it was assumed these were completely discharged and at altitude (Halon 1211 extinguishers are pressurized with nitrogen).

Summary

The average number of Halon fire extinguishers discharged on a Boeing airplane per year was 28, and the average number discharged per year at altitude (above 10,000') was 20. The yearly discharges are shown in the table below.

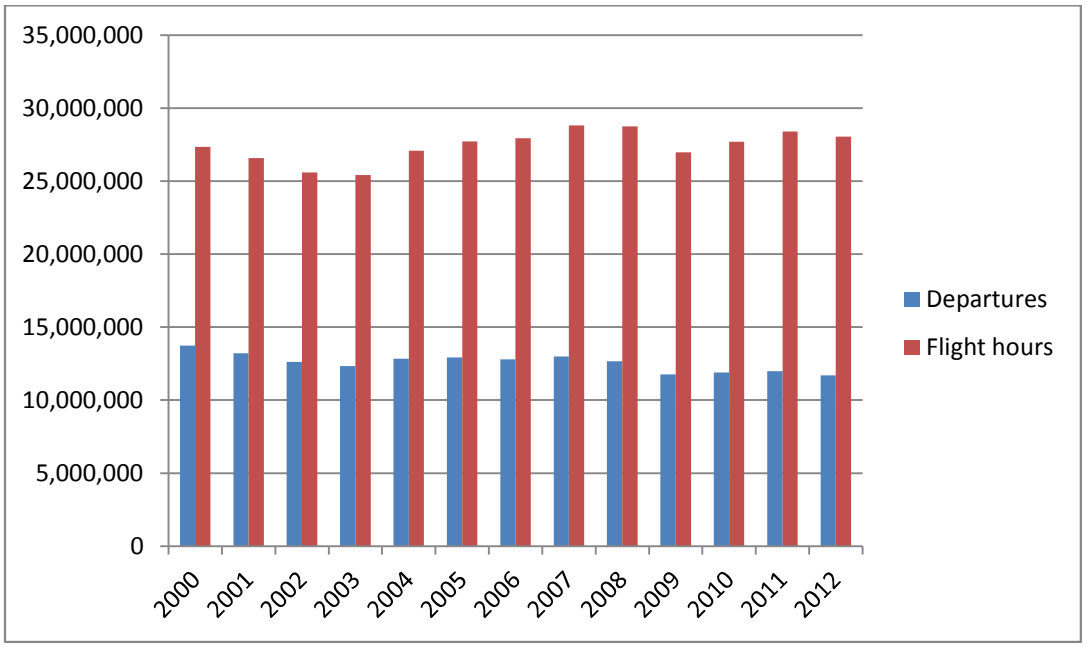
Quantity of Halon Handheld Fire Extinguishers Discharged on Boeing Airplanes[1]



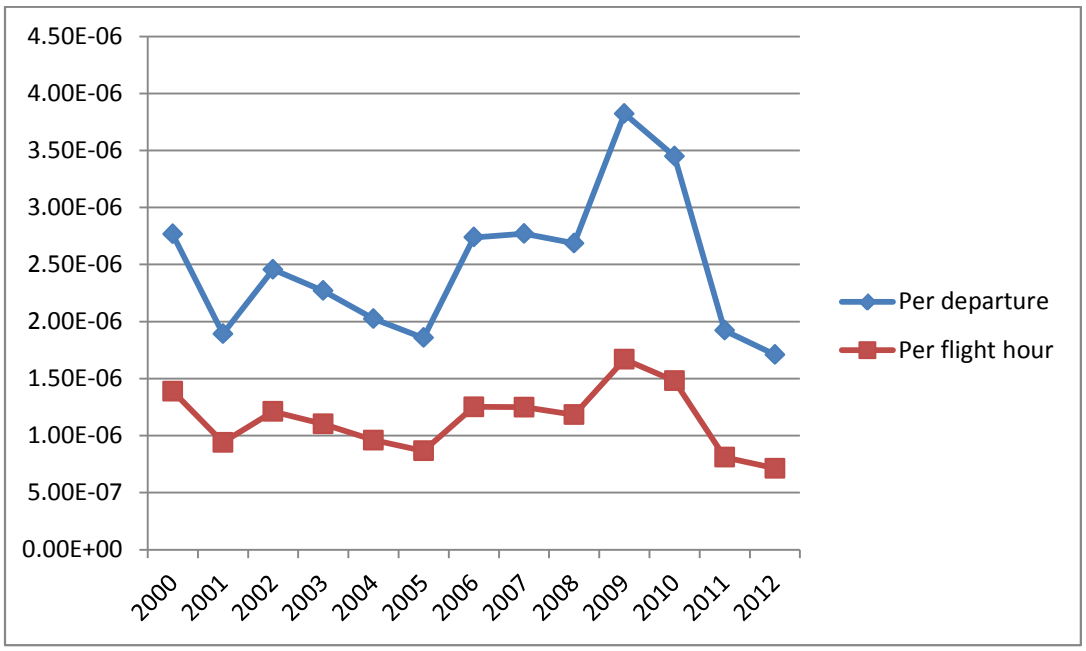
1. Data for Boeing commercial airplanes (including, Douglas and McDonald Douglas airplanes).

The number of discharges compared to the number of flight departures or flight hours provides some perspective on how rarely a discharge occurs. The tables below show the yearly Boeing flight statistics and the resultant probabilities of discharge.

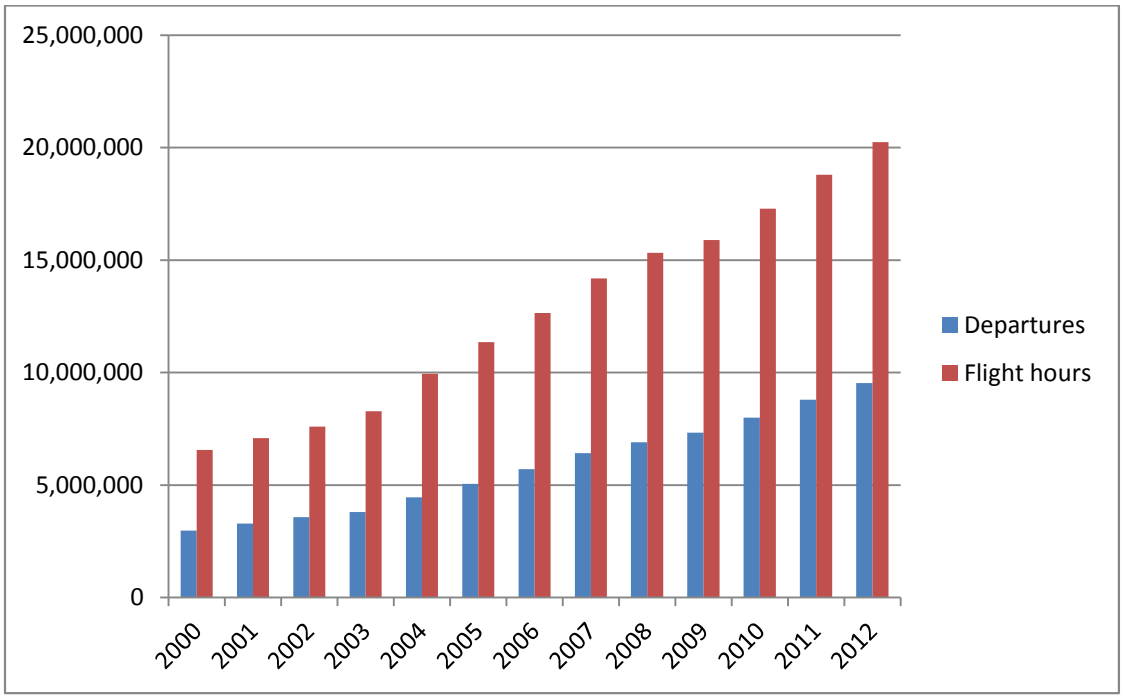
Boeing Airplane Flight Statistics



Probabilities of Fire Extinguisher Discharges on Boeing Airplanes



Airbus Airplane Flight Statistics



Flight operations data compiled from www.ascendworldwide.com

Conclusion

Based on the reported events onboard Boeing airplanes:

- 360 Halon fire extinguishers were discharged over the 13 year period.
- 262 of those discharges were likely at altitudes above 10,000'.
- 190 of those discharges were on actual fire events (mostly galley oven), while the remaining discharges were smoke events or leaks.
- Probability of a discharge per airplane departure is approximately 1.5 x10-6.

If the same number of discharges was assumed to occur on Airbus airplanes (which would be very conservative) and the Airbus flight statistics are included (see chart above), the probability of a discharge per flight departure is still only approximately 3 x10-6.

REFERENCE 16

Jeff Gibson

From: Godwin, Dave <[redacted]>
Sent: Tuesday, July 25, 2023 6:18 PM
To: Jeff Gibson
Subject: RE: halons and alternatives Vintaging Model. clean agents.

Hi Jeff,

ICF was able to dig up (from 2006!) how we derived an annual loss rate of 3.5% for non-halon alternatives in streaming fire suppression. This originated from then-current HTOC reports and conversations with Dan Verdonik and Tom Cortina.

We built this up assuming annual loss rates of 1.5% from discharging the device plus 2% from leakage. We assumed losses at training and during recycling/disposal were negligible. We don't distinguish between systems that are regularly serviced and those that are not, so these estimates are meant to be the weighted average across the whole stock of such equipment.

You indicated that for equipment that is not regularly serviced, the leakage is lower than 2%. It could be that the 2% leakage we used did account for a mix of equipment and included the leaks and service losses, but we could not confirm that.

Hope that helps. If you have any further information that would help us better refine our numbers, we'd appreciate hearing that.

Best regards,
Dave

David S. Godwin, P.E.
General Engineer
U.S. Environmental Protection Agency
Office of Air and Radiation
Office of Atmospheric Protection
Stratospheric Protection Division
Data Analysis and Systems Branch
Mailing Address: 1200 Pennsylvania Avenue, NW; Mail Code 6205A; Washington, DC 20460; USA
Deliveries and Office Location: 1201 Constitution Avenue, NW; South-4012B2; Washington, DC 20004; USA
Phone: +1-202-343-[redacted]
Godwin.[redacted]@epa.gov

From: Jeff Gibson <[redacted]>
Sent: Monday, July 24, 2023 7:11 PM
To: Godwin, Dave <[redacted]>
Subject: RE: halons and alternatives Vintaging Model. clean agents.

Dave,

I hope things are going well for you. In page 8 of the attached presentation you gave a few years ago, for streaming agents, you note a predicted emission range of 2-6% (3.5%) . We are trying to refine this number in our analysis of available information for the case where an extinguisher is not serviced regularly (complete tear down every 6 years per NFPA) 10) until end of life (i.e., a non rechargeable).

Do you have back up data with enough fidelity to break out the servicing portion of the 3.5% (leaving usage (fires) and accepted leakage on the shelf)? Our impression is that without the servicing activity, the number goes lower than 2%.

Please let me know.

Thanks

Jeff

Jeff Gibson
Vice President

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From: Godwin, Dave <[redacted]>
Sent: Thursday, March 15, 2018 5:40 PM
To: Jeff Gibson <[redacted]>
Cc: Newberg, Cindy <[redacted]>
Subject: RE: Data Submission for the EPA OSD and Alternatives Vintaging Model, re HCFC Blend B, Other (contains CBI)

Thanks Jeff. I'll take a look – this will be useful information to improve our Vintaging Model. As you may know, we received comments on the fire protection sector as part of a peer review of the model, so there are many changes coming. Some will not be ready for the next Greenhouse Gas Emissions Inventory (essentially we are finalizing the model now for the April 2018 report), but we will keep reviewing the information for future versions.

-Dave

From: Jeff Gibson [mailto:[redacted]]
Sent: Thursday, 15 March, 2018 7:35 PM
To: Godwin, Dave <[redacted]>
Cc: [redacted]; Newberg, Cindy <[redacted]>; [redacted]; Bradford Colton <[redacted]>
Subject: Data Submission for the EPA OSD and Alternatives Vintaging Model, re HCFC Blend B, Other (contains CBI)

Dave,

Please see the attached submission related to HCFC Blend B (Halotron). I have copied John Thompson, Cindy Newberg and Lauren Stowe as well given the recent examination of current and projected usage rates for HCFC Blend B.
We hope that this information is helpful.
Thanks.

Jeff

Please note my new email address: [redacted]

Jeff Gibson
Vice President

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REFERENCE 17

From: Chattaway, Adam - Collins <[redacted]>
Sent: Thursday, August 17, 2023 7:02 AM
To: Jeff Gibson <[redacted]>
Cc: [redacted]
Subject: RE: Emission rates for clean agents in portable fire extinguishers in the EU, 2023 and later, more fidelity US EPA input.

Jeff, between business travel, vacation and me being out of the office, unwell, I finally managed to catch up with Dan late yesterday.

The simple answer is that the FSTOC model is looking at the amount of agent being recycled (or removed from service) and estimating emissions from there.
The EU retrofit is causing more 1211 bottles to be removed from service, and hence driving up emissions.

However, as noted in the FSTOC 2022 AR we are now at the point where the sum of all emissions of halon 1211 is equal to or greater than the amount reported as produced. So there are some issues with the model. Dan and I would like to refine this model for the next AR, but that doesn't help us here.

Instead, we think it would be better to use emissions inferred from atmospheric measurements of 1211. The data is contained in the UK BEIS report, referenced in the 2022 AR.
However, the UK govt have moved the location of the report, and it took a bit of digging to find it.
See attached.
The data for 1211 is in Table 31, on page 121.
To turn this into an annual percentage we need an estimate of the bank of 1211 in NW Europe. The FSTOC model aggregates NWEU with Australia, and gives a bank of ~9500 tonnes in 2021. [I realise that this could be on the low side if the FSTOC model has been overestimating emissions, but this builds conservatism into the estimate.]
To apportion NWEU and Australia, I used World Bank data for GDP (not sure how else to do this). I think Australia would be approx. 12% and NWEU 88%. Therefore the 1211 Bank in NWEU would be of the order of 8360 tonnes. See edited xls from World Bank data.
From the BEIS report 2021 emissions of 1211 were ~80-90 tonnes or very roughly 1%.
I hope this helps.

Adam

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Chief Engineer, Chemistry

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