THE HALON RECOVERY CAMPAIGN: WORKING AT THE COMMUNITY LEVEL TO ACCELERATE THE PHASE-OUT OF HALONS

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Currently, Friends of the Earth and the Clean Air Council are jointly implementing the Halon Recovery Campaign, a grassroots initiative working to protect the stratospheric ozone layer by promoting the collection of halons from communities throughout the mid-Atlantic region. This paper will discuss the adverse impacts of halons on the ozone layer and importance of eliminating halon emissions, describe and evaluate how the Halon Recovery Campaign is working to achieve the main goal of ozone protection through the phase-out of halons and explore possible ways of building upon these efforts to bring about even greater benefits to the ozone layer.

HALONS: A POTENT THREAT TO THE OZONE LAYER

There is widespread scientific consensus that humankind's use of halons and other ozone-depleting substances has caused depletion of the earth's protective ozone shield. One of the most disturbing manifestations of this problem has been the annual formation of the ozone hole over the Antarctic since the mid 1980s. The World Meteorological Organization (WMO) reported that the 1995 Antarctic Ozone Hole was the longest lasting on record and at its maximum exceeded 20 million square kilometers, or twice the size of Europe. In March, the WMO also reported record low ozone levels over the far northern hemisphere, including over Siberia and in most of the northern mid- and polar-latitudes.

Scientists predict that ozone losses will peak at the turn of the century, leading to significant increases in ultraviolet radiation reaching the earth's surface. Increased ultraviolet radiation is believed to cause skin cancer, eye cataracts and suppression of the immune system while also harmfully impacting fisheries and agriculture.

Halons, which are up to 16 times more destructive to the ozone layer than the better known CFCs, are emitted into the atmosphere through use as fire-fighting agents. While industrialized countries ended production of halons in 1994, halons continue to be stockpiled and used in existing fire protection equipment. Halons are still being produced in some developing countries.

Indeed, scientists have reported that while the concentrations of chlorine will likely peak over the next few years, the recovery of the ozone layer could be further slowed by the impact of bromine as well as by other factors. For example, halons used in existing fire equipment are still being emitted in the atmosphere, thereby offsetting reductions in ozone depletion substances

that have been achieved elsewhere. (*Science January 5* 1996) Furthermore, the United Nation's **1994** Scientific Assessment of Ozone Depletion concluded that the future integrated chlorine/bromine loading could be reduced by 10% if halons currently contained in existing equipment are never released into the environment.

THE GOALS *OF THE HALON RECOVERY CAMPAIGN*

Recognizing the threat that halons pose to the ozone layer, Friends of the Earth (FoE) and the Clean **Air** Council (CAC) implemented the Halon Recovery Campaign in **1994** to prevent further ozone destruction and promote the adoption of alternatives that do not deplete the ozone layer. To achieve these goals, the program has four major objectives:

- Accelerate the phase-out of halon use and prevent the necessity of producing more halon in the future;
- Generate a supply of halons to help meet critical **use** needs until adequate alternatives have been developed,
- Minimize halon emissions to the greatest extent possible by ensuring that halon is recovered, recycled and managed in an environmentally responsible manner, and
- Raise public awareness about ozone depletion and empower individuals to act on the local level to protect the ozone layer;

This paper will further discuss how FoE and CAC are achieving the objectives of the Halon Recovery Campaign, highlight the accomplishments of the program and discuss how future efforts can further accelerate the phase-out of halons in a way that benefits the environment and fire safety.

Objective #1: Accelerating the phase-out of halon use:

Supported by the Environmental Protection Agency and the Halon Recycling Corporation, the Halon Recovery Campaign is actively promoting the phase-out of halons by working directly with communities in the mid-Atlantic region to eliminate use of halons. Currently, we are educating over 300 companies, state and local governments, schools and colleges about the environmental and health impacts of halons and the importance of replacing halon fire extinguishers and fire protection system **as** quickly **as** possible to protect the ozone layer. The Campaign is targeting those institutions and industries where halons are known to be prevalent, particularly Fortune 1000 companies and targeted sectors, such as the telecommunications industry.

The Campaign has developed a number of different approaches to effectively reach out and engage communities in these efforts. Much of **our** focus has been on directly contacting the environmental affairs and facility departments in companies and governments to inform them about the program, educate them about the environmental and economic benefits of replacing halons **as** well as the alternatives that are available and assist them in **taking** an inventory of their

facilities. The Campaign has also worked directly with student and grassroots environmental organizations, environmental commissions and trade associations to raise awareness of the issue and to promote phase-out of halons.

While the Campaign does not specifically recommend which alternatives a company should replace halons with, we encourage participants to adopt alternatives that do not deplete the ozone layer, cause global warming or have other harmful environmental impacts. The Campaign has enlisted the participation of 14 fire equipment distributors and halon recyclers to work directly with participating companies to determine effective alternatives that will meet their fire protection needs.

The Campaign has also used other means to efficiently seek more involvement in the program. In New Jersey, under the Community Right to Know Program, all companies that have halon 1301 and halon 1211 in their facilities are required by law to report this to the New Jersey Department of Environmental Protection and Energy. Due to these public reporting requirements, the Campaign has obtained a list of all companies in New Jersey with halons that we can not focus on involving in the Campaign,

Objective #2: Generate a supply of halons to meet critical use needs

The Halon Recovery Campaign is in some respects a recycling program, as it is recovering halons from uses which are unnecessary and redirecting them to help meet legitimate critical use needs until adequate alternatives are developed. The wise and careful use of the existing stockpile of halons will not only help minimize halons emissions but also prevent the necessity of producing more halons in the future to meet critical uses. However. the ultimate goal of our efforts is to completely eliminate the use of halons and collect halons to be stored and destroyed in an environmentally acceptable manner.

The Campaign has a strict, narrowly defined interpretation of what qualifies as a "critical use," which is based upon the United Nation's definition of an essential use:

> "A critical need must exist to minimize damage due to fie, explosions or extinguishing agent application, which would otherwise result in serious impairment of an essential service to society, or pose an unacceptable threat to life, the environment, or national security...and...All other appropriate fire protection measures have been taken."

Thus, a critical use must provide a function that is critical to protecting human life, national security or the environment and the critical user must demonstrate that no commercially viable alternatives currently exist for that particular use. In addition, the critical user must be actively conducting rigorous research into the development of alternatives to halons. For example, one way of qualifying to be a critical user under the program is to go through the Halon Recycling Corporation's Critical Halon Use Committee which will determine whether a user is a critical user. The Campaign has worked closely with the Halon Recycling Corporation to develop this aspect of the program.

Since there has been significant progress made in developing effective alternatives to halons over the past few years, there are currently very few uses that qualify as a "critical use," under the Halon Recovery Campaign. For example, critical uses that have been approved include uses for fire protection aboard aircraft and for specific uses in the military. However, the severe ozone losses that are being observed over the far northern hemisphere including over populated regions, makes it even more urgent for critical users to find alternatives so that the shift away from halons can be made as rapidly as possible. In the future, the Halon Recovery Campaign will focus increasing attention on having halons that go through the program be stored for eventual destruction.

Objective #3: Minimize emissions of halons to the greatest extent possible.

Since there are no regulations in the United States governing the use and disposal of halons, there is no guarantee in the marketplace that halons will be properly recovered and recycled in a manner that prevents emissions into the environment. There also is no assurance that the halons will be properly disposed, often with the likelihood that halons will eventually be released into the atmosphere.

The Campaign has addressed these concerns by requiring that the participating 14 fire equipment distributors and halon recyclers must recover and recycle all halons going through the campaign by using the best available technology by using halon recycling equipment with 99% efficiency to prevent emissions and to have halons stored for destruction or resell halons only to legitimate critical users that are approved by Friends of the Earth and the Clean Air Council.

Objective #4: Raise public awareness about ozone depletion.

The Halon Recovery Campaign has proven to be a unique vehicle for educating and involving the public in helping to solve a global environmental problem. Participating in the Halon Recovery Campaign represents a very tangible way in which an individual, company or organization can act on the local level to protect the ozone layer and help protect public health. For example, we have found that student environmental activists as well as environmental commissions not only learn about the science and environmental policies behind ozone depletion but also take on a specific project in their school that will benefit the community and the environment.

The Campaign has teamed up with the Princeton High School Environmental Council and Youth Service New Jersey to encourage students to get involved in this program in their school and community. We have also conducted public education campaigns in communities across the mid-Atlantic region to raise public awareness of ozone depletion and encourage citizens to get involved in the program.

THE HALON RECOVERY CAMPAIGN'S ACCOMPLISHMENTS

The Halon Recovery Campaign has involved governments, companies and schools in efforts to replace halons and has also raised public awareness of the ozone depletion issue. So far, most of the companies, governments and schools are in the process of taking inventories and

developing plans for phase-out. In fact, the replacement of halons generally does not happen overnight, but requires planning to determine and develop a cost-effective approach to replacing halons.

However, we would like to highlight a number of governments and companies that are taking the lead on this issue to illustrate how the program has worked. Currently, the Clean Air Council is working closely with the City of Philadelphia to develop a plan for phasing out all halons in government facilities. The Philadelphia City Government is developing a coordinated policy for phase-out of halons by involving all facilities that currently contain halons in a process to determine how best to replace them. While it is difficult to estimate the total amount of halons in all facilities, the City of Philadelphia will serve as a model for how cities can help protect the global environment while ensuring adequate fire protection.

In addition, Friends of the Earth is working with the New Jersey Department of Treasury and the New Jersey Department of Environmental Protection to take an inventory to determine the total amount of halons in all N.J. government facilities and we will continue to work with them in implementing a plan for phase-out. Other governments involved include Princeton Township, Harford County government and Glassboro Environmental Commission.

Drawing upon these governments as models, we hope to expand and work with other state, city and local governments to replace halons and to encourage the companies in their area to also participate. The Campaign has also conducted outreach to state and regional government associations, such as the Association of New Jersey Environmental Commissions, to raise awareness about the program among local governments. In the private sector, we are currently working with many Fortune 1000 companies on possible participation in the Halon Recovery Campaign. The most recent participants in the Campaign include the Hershey Food Corporation as well as the Franklin Mint.

NEXT STEPS FOR THE HALON RECOVERY CAMPAIGN

Over the next year, the Halon Recovery Campaign will continue to conduct outreach to companies, governments and schools across the country in replacing their halons and in storing the halons to meet critical use needs and for eventual destruction. The campaign will work to ensure that halons are properly disposed and destroyed so that future emissions are eliminated.

However, there are a number of other issues that must be addressed if the United States is to be successful in its efforts to accelerate the phase-out of halon use as rapidly as possible. As halon technologies become increasingly obsolete over the coming years, FoE and CAC believe that it is critical to develop destruction technologies for halons and creating a national halon bank in the United States, where all halons could be stored safely for eventual destruction. The formation of a national halon bank should be a partnership among the U.S. government and private industry that will help ensure that halons in existing equipment are not released into the atmosphere.

Crucial to these efforts must be the development of destruction technologies that are not harmful to the environment. There has been progress that has been made recently in the

development of commercially viable destruction technologies, including the development of photolytic destruction technologies that mimics how ozone-depleting compounds are broken down in the stratosphere.. There must be additional support for the continued development of destruction technologies.

Promoting the Phase-out of Halons in Developing Countries

In addition, the Halon Recovery Campaign may also serve as a useful model for the development of recovery and recycling programs in other countries around the world, particularly in those developing countries that are still producing halons. Programs that help raise awareness about the importance of ending halon use to protect the ozone layer while supporting recycling and banking programs can play an important role in helping developing countries end production of halon as quickly as possible.