DEVELOPING A COMPREHENSIVE HALON RECOVERY PROGRAM IN THE UNITED STATES

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by
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A year after halon production was halted due to halon's potent ability to deplete the ozone layer, efforts are underway in the United States and throughout the world to recover, bank and recycle halon. As scientists report that the Antarctic ozone hole of 1994 is one of the worst on record, it is even more critical that the phaseout of halon use and the transition to alternatives occur in a way that will prevent further damage to the ozone layer and meet future needs for critical fire protection until adequate alternatives can be found.

Recent evidence indicates that additional actions must be taken to accelerate the phaseout of halon use in a manner that minimizes impact on the stratospheric ozone layer. The 1994 Scientific Assessment of Ozone Depletion released by the United Nations found that the level of ozone-depleting chemicals in the atmosphere could be reduced by 10% if halon contained in existing equipment were never released into the atmosphere.

In addition, the United Nation Environment Programme's Halon Technical Options Committee released a report in December 1994 recommending that efforts must focus on implementing halon emission reduction strategies. Some of the Committee's recommendations included using halon only for "essential applications," ending discharge testing, using halon recycling equipment and promoting adoption of alternative fire protection strategies to reduce need for halon.

In order to simultaneously achieve the goals of protecting the ozone layer and meeting future critical use demands, Friends of the Earth believes the United States must develop strategies to recover, recycle and wisely manage the use of existing halon in an environmentally responsible manner. At the same time, it is just as important for the United States to rigorously work to identify suitable alternatives that will make it possible to completely eliminate halon use.

Friends of the Earth has begun to address these concerns by developing a targeted regional recovery program that promotes the recovery of both halon 1211 and halon 1301 from sectors where continued halon use is unnecessary and redirect it toward critical uses. This program has several objectives:

- to accelerate the phaseout of halon use and prevent the necessity of producing halon in the future, ;
- to generate a supply of halon to help meet future critical needs until adequate alternatives have been developed;
- to minimize halon emission to the greatest extent possible by ensuring that halon is recovered, recycled and managed in an environmentally responsible manner; and
- to raise public awareness about ozone depletion and empower individuals to act on the local level to protect the ozone layer.

Friends of the Earth is taking steps to translate these ideas into action. After launching a successful pilot project that phased out the use of halon 1211 in Takoma Park, Maryland, Friends of the Earth is currently working to expand the program to the Mid-Atlantic Region. A unique aspect of this program is that it has the participation of many of the key stakeholders in this issue, including the federal government, fire equipment distributors, industry and environmentalists.

This paper will focus on the Halon Recovery Campaign and how it can be used as a model for creating a comprehensive national recovery program that can help meet industry and the military's critical use needs while protecting the ozone layer. Particular issues that will be addressed include: 1). building partnerships among the various stakeholders to work together in phasing out halon use in a manner that benefits the environment, 2). determining how to target recovery of halon from those sectors where it is prevalent **3).** establishing an infrastructure and banking system that is cost-effective and ensures that halon is used only for critical uses and 4). implementing an educational campaign to seek participation of the public in these recovery efforts. To provide a basis for comparison, this paper will also examine the halon recovery programs that have been implemented in other countries.

THE HALON RECOVERY CAMPAIGN: WORKING AT THE GRASSROOTS LEVEL TO PHASE OUT THE USE OF HALON

In 1994, Friends of the Earth, with support from the Environmental Protection Agency, launched a pilot project to recover halon from a community in Maryland. The campaign successfully worked with the local government, residents, small businesses and colleges in the area to replace their halon fire extinguishers with effective alternatives. Participants got a **25%** discount on alternatives and the collected halon went to the Department of Defense's Halon Bank in Richmond, Virginia where the halon will only be used for critical uses.

This campaign proved very valuable in helping to identify sectors where halon is widely used. For example, we found that the amount of halon fire extinguishers in the

residential sector was very small and that halon fire extinguishers and systems were likely to be in college and school computer rooms and video centers. For these types of uses, effective alternatives are available. In fact, we educated many universities and colleges in the Washington, DC area, many of which had halon systems, about the alternatives to halon and how to phase them out in an environmentally responsible manner. As a result of these efforts, George Washington University is currently making plans to replace four of their halon systems. While other colleges are unable to replace their systems due to the high cost, some plan to phase it out when renovating their facilities. Similarly, local governments and companies also have halon in areas where there are computers or other electronic equipment.

With continued support of the Environmental Protection Agency, Friends of the Earth and the Clean Air Council, a regional environmental organization based in Philadelphia, are expanding the Halon Recovery Campaign this summer to phase out the use of halon in communities throughout New Jersey, Maryland and Pennsylvania. The campaign's main objectives are to prevent further destruction of the ozone layer, generate a supply of halon for critical uses and raise the public's awareness about ozone depletion and fire protection issues.

While still in the final stages of organizing the program, Friends of the Earth believes this program will be effective, in large part due to the involvement of a variety of groups that bring different perspectives and areas of expertise to the table. The groups taking part include the Environmental Protection Agency, the Halon Recycling Corporation (a non-profit trade association that helps to facilitate recycling of halon), fire equipment distributors and members of the fire protection community. With the support of these organizations, Friends of the Earth will launch a grassroots campaign within three states to encourage the phaseout of halon.

HOW THE HALON RECOVERY CAMPAIGN WILL BE IMPLEMENTED

To provide a clear understanding of how the Halon Recovery Campaign will work to phase out halon use and achieve the objectives that were outlined in the first section of this paper, below we have gone into greater detail about how the campaign will be structured and implemented.

Recruit environmentally responsible fire equipment distributors to participate in the Campaign

Friends of the Earth has determined that the most efficient, cost-effective place for these recovery and recycling efforts to occur is at the fire equipment distributor level, which can serve as temporary halon banks. Fire equipment distributors are essentially the "infrastructure" through which recycling efforts are already occurring. Therefore, it is critical for the Campaign to recruit environmentally concerned distributors in order to develop an effective banking system.

With help from the National Association of Fire Equipment Distributors in publicizing the program, the campaign has recruited approximately ten fire equipment distributors in the Mid-Atlantic Region who would like to take part in the Halon Recovery Campaign. Participating fire equipment distributors will agree to have halon collected through the program resold only to "critical users," and will offer a discount on alternatives. Distributors will also help potential participants determine what is the most appropriate alternative that will meet specific fire protection needs and has been approved under the E.P.A.'s Significant New Alternatives Program.

Additionally, participating distributors must follow a set of guidelines developed by Friends of the Earth and the Clean Air Council outlining how to conduct halon recovery and recycling activities. For example, we will require participating fire equipment distributors to recycle halon 1211 and halon 1301 in a manner that will minimize halon emissions to the greatest extent possible by using halon recycling equipment. Such guidelines could also be modeled on the Industry Code of Practice that was developed by the Halon Recycling Corporation. If necessary, the campaign, along with the Halon Recycling Corporation, will assist interested fire equipment distributors in meeting these guidelines. Since fire equipment distributors may vary in the resources they have, we may help distributors get access to halon 1211 recycling machines or help determine how best to facilitate the transfer of halon to critical users.

Thus, by certifying specific distributors who operate in a responsible manner to protect the ozone layer, owners of halon fire extinguishers will be assured that their halons are recycled in a way that minimizes impact on the stratospheric ozone layer. Friends of the Earth will widely publicize the list of distributors taking part in the program, encouraging any company, local government and college to turn in their halon extinguishers to any of these distributors.

Ensure that collected halon only goes to critical users

Since the Halon Recycling Corporation (HRC) already has a Critical Use Review Committee that can review whether a halon buyer is a "critical user" if requested, HRC will be in a position to identify and facilitate the transfer of collected halon to critical users. When identifying possible critical users, Friends of the Earth will interpret the definition of a "critical use" in the strictest terms, based upon the United Nations' definition of an essential use, as detailed at the Copenhagen Meeting of 1992, which states:

> "A critical need must exist to minimize damage due to fire, 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."

Examples of what Friends of the Earth and the Clean Air Council would deem as "critical uses" would be the use of halon for fire protection within the aviation industry, oil industry or to serve as fire protection for certain uses in the military. Since the Halon Recycling

Corporation has developed a Critical Use Review Committee, it only makes sense to utilize these programs that are promoting environmentally responsible use of halon.

Target recovery efforts to sectors where halon is prevalent

The Halon Recovery Campaign will target certain sectors where halon use is prevalent. For example, since halon is widely found in computer rooms or areas where there is electronic equipment, we will conduct outreach efforts to sectors where these re commonly found, reaching relevant industries through various trade associations. Additionally, from our pilot project in Takoma Park, we learned that almost every college and university has either halon fire suppression systems or halon fire extinguishers in its facilities. Local and state governments are additional sectors where halons may be prevalent.

Friends of the Earth will seek to educate these sectors about the importance of protecting the ozone layer and haw they can phase out their use of halon in an environmentally responsible manner. Halon users will also be referred to the fire equipment distributors taking part in the campaign who will work with participants to determine the most appropriate alternatives and offer 25% discounts on these alternatives. Since it is very costly to replace halon fire suppression systems, Friends of the Earth has been providing companies and universities that have these systems with information about alternative systems, proper maintenance of systems to prevent leakage of halon and ways in which they can transfer their halon to critical users.

Over time, the amount of halon 1211 that could be recovered through these efforts and redirected toward critical uses may be significant, due to the rising cost of 1211, its lack of availability and the relatively low cost of replacements. Recovering halon 1301 will be **a** far more difficult endeavor, due to the high costs of replacements and will take place over a much longer time frame.

Several distributors who are planning to participate in the campaign have provided estimates of the quantity of halon 1211 they have sold over the past 10-15 years. One of the larger distributors in Maryland estimates that they have sold approximately 90,000 pounds over the past fifteen years. Another fire equipment distributor roughly estimates that there could be millions of pounds of halon in the Delaware Valley.

Since a very small portion of portable halon fire extinguishers are sold for use in the home, Friends of the Earth will not devote a significant amount of resources in targeting recovery efforts to the residential sector. However, residents will be given the opportunity to turn in their halon fire extinguishers at designated fire departments within their county. When residents drop off their halon fire extinguishers, they will receive a coupon providing a discount on a home fire extinguisher that can be purchased at a local store. Friends of the Earth and fire equipment distributors will arrange for the halon fire extinguishers to be transported from collection centers to critical users on a regular basis.

Launch an educational campaign to raise awareness and get participation

In order to maximize involvement and raise public awareness about ozone depletion, Friends of the Earth will launch a grassroots campaign in communities throughout the Mid-Atlantic Region. We will publicize the program throughout communities as a grassroots initiative working on the local level to protect the ozone layer, encourage governments, companies and schools to get involved and highlight the environmentally responsible fire equipment distributors that are in their area. We will inform the public about the program through local media coverage and by distributing educational materials at fire departments, local governments and other organizations throughout communities. The local media coverage that we received for the pilot project launched last year in a Takoma Park, Maryland helped tremendously to educate the public and to get participation in the program. We will also develop a target list of companies, universities and schools to approach directly for participation.

The campaign will seek the participation and support of local governments, asking them to lead by example by phasing out their use of halon. For example, the Montgomery County government in Maryland will play an integral role by providing collection centers for halon fire extinguishers and in helping to promote the program. In addition, we will work with county governments to pass resolutions urging businesses and members of their communities to take part in the campaign. The Takoma Park government's participation in the pilot project was very helpful in raising the visibility of the program. Getting additional local governments involved will help draw attention to our efforts and give the program greater credibility.

By working with local fire departments throughout the region, the Halon Recovery Campaign will not only raise awareness about ozone depletion but will also incorporate a fire safety component into the program. Currently, we are working with the Maryland Fire Marshal's office to develop information about when and how to properly use home fire extinguishers to put out fires. This information can be incorporated into educational materials that will be distributed to fire departments, fire equipment distributors, local governments and through various environmental and community organizations in communities throughout the Mid-Atlantic Region.

USING THE HALON RECOVERY CAMPAIGN AS A MODEL FOR A NATIONAL RECOVERY PROGRAM

If the regional Halon Recovery Campaign proves to be a success and recovers a significant amount of halon for critical uses while promoting environmentally responsible recycling practices, we believe the campaign can serve as a model for the development of a coordinated national recycling program. Broadening the partnerships that we build in the regional program will allow us to expand the campaign.

Since much of the recovery and recycling efforts will take place at the fire equipment distributor level, the Halon Recovery Campaign can be easily duplicated in

communities throughout the country. While initial efforts will focus on identifying environmentally responsible distributors in the Mid-Atlantic Region and encouraging individuals to dispose of their halon at these companies, we believe this approach will spill over in communities throughout the country, making it possible to recruit fire equipment distributors across the country for participation. Currently, fire equipment distributors in Illinois and Colorado who are planning to take part in the program. We eventually hope to establish a network of distributors throughout the country serving as temporary halon banks and generating a greater supply of halon 1211 and halon 1301 that can be directed toward critical uses.

Additionally, expansion to the national level will also likely generate a significant amount of halons that can be redirected towards critical uses. With the real possibility of collecting a large amount of halon, it will be critical to work with the Halon Recycling Corporation to identify critical halon users for both halon 1211 and 1301 and facilitating the transfer of these halons. Part of this effort will entail assessing the quantity of halon 1211 and halon 1301 needed for critical uses in the United States and perhaps in other countries and the progress that has been made in developing alternatives for critical uses. Depending on the situation, it may be necessary for some of collected halon to funneled towards critical or for it to be banked and stored for future destruction.

Drawing upon the experiences gained from the regional campaign, partnerships with fire departments, fire marshals, state and local governments across the county will have to be formed to assist in launching a nationwide educational campaign urging the public to phase out their use of halon by going through distributors that have been designated as environmentally responsible.

EXAMINING HALON RECOVERY PROGRAMS IN OTHER COUNTRIES

When evaluating how most effectively to phase out halon use in the United States, it is helpful to examine other countries' strategies for halon recycling and banking programs that work towards eliminating halon use. While each country has implemented a program that suits the particular circumstances and needs within their country, some of the approaches taken in developed countries may offer possible ideas for what can be implemented in the United States to further accelerate the phaseout of halon in a responsible manner. For the purposes of this paper, we will examine the halon phaseout strategies of three countries that have employed a variety of approaches: Australia, Denmark and the United Kingdom.

Australia has taken one of the most aggressive approaches in eliminating the use of halon. Unlike the United States and many other countries, Australian government has actually created **a** physical national halon bank serving **as** the center through which halon will be recovered, stored, reused only for essential uses and eventually destroyed. While the government operates the national bank, funding for these efforts **is** provided by halon owners who must pay deposit when turning in their halon to the bank. Regulations govern the continued use of halon and the "Strategy for Ozone Protection" recommend

that halon should be phased out by the end of 1995, except for essential uses. As of 1994, the bank had recovered approximately 20 tonnes of halon 1301 and 50 tonnes of halon 1211.'

Similarly to Australia, Denmark has also developed a physical halon bank, but relies more upon the cooperation of industry to facilitate recycling efforts. In Denmark, as of January 1, 1993, regulations require that only recycled halons can be used and prohibits new installations of halon, while recycling efforts are the result of cooperation between industry and the government. In addition, the Danish Halon Banking System, a company whose shareholders include industry, insurance companies and fire equipment manufacturers and is funded by the Danish government, also serves as a physical bank. This bank collects stores and sells halon in Denmark, for essential uses. The bank has plans to eventually export recycled halons.[2]

The United Kingdom's approach resembles what has been done in the U.S. In the U.K., halon is classified as controlled wastes, meaning that it is illegal to Wreat, keep or dispose of controlled wastes in a manner likely to cause pollution to the environment or harm to human health." The U.K. has established the Halon Users' National Consortium, a non-profit, to serve as a clearinghouse, putting in touch buyers of halon with those who wish to sell their halon. Funded by its members, which consist mostly of halon uses and some fire protection companies and partially by the government, the consortium also keeps track of existing amounts of halon as well as a list of users.[3]

The U.S. approach to phasing out halon differs greatly from Australia's. The U.S. so far has relied upon voluntary initiatives within industry and lead by HRC, with support of the Environmental Protection Agency, to promote the recycling and environmentally responsible management of existing halon. Friends of the Earth's program is also a voluntary initiative that attempts to get a wide variety of sectors to phase out halon use as soon as possible to prevent further ozone destruction and work with the industry to bring about wise use and recycling of halon that does not threaten the ozone layer.

The United States has taken a similar approach to the United Kingdom and Denmark, which have formed organizations composed of halon users and the fire protection industry and supported by the government to facilitate the recycling of halons to meet critical use needs. Denmark has gone a step farther by developing a physical bank. However, both Denmark and the U.K. have some type of regulation governing the use and disposal of halon that complement recycling efforts and help to further protect the ozone layer. Currently, there are no regulations governing the use and disposal of halon in the United States.

In the future, as alternatives to halon are more fully developed and the demand for halon decreases, the U.S. must explore taking additional steps that may be similar to Australia's approach that wil require all existing halon in the country be recovered to meet critical use needs or to be destroyed. It is important that the United States develop a national comprehensive recovery system as well as regulations requiring that halon be recycled and disposed of in an environmentally responsible manner to prevent further

damage to the ozone layer and to bring about the elimination of halon use. The Danish Halon Banking System, which resembles the Halon Recycling Corporation but serves as a physical bank, also provides another model for how the United States could go about developing a national halon recovery program.

The United States faces an entirely different set of circumstances and needs than other countries and must assess how to further develop halon recovery strategies in the context of the situation in this country. Currently, much of the recycling efforts are going on at mini-halon banks throughout the country, such as at the distributor level throughout the country as well as larger halon banks that have been created by some industries needing halon for the future. Eventually, a more coordinated system will have to be developed to further accelerate the phaseout of halon that taps into these existing recycling efforts. Since much of the recycling is taking place at the fire equipment distributor level, distributors must play an integral role in any comprehensive plan that the United States develops.

Friends of the Earth's efforts to promote environmentally responsible recovery and recycling of halon at the distributor level may provide the building blocks upon which a national halon recovery program can be effectively constructed. Given the cooperation that has already occurred between industry, fire equipment distributors, the federal government and environmentalists in determining how to phase out halon use, the U.S. should continue along this pathway and explore the further development of public-private partnerships could be formed to help facilitate the collection and banking of all existing halon in a cost-effective manner that will protect the ozone layer.

Endnotes

1. Report of the Halon Fire Extinguishing Aaents Technical Options Committee. United Nations Environment Programme Report, December 1994, p. 109.

2. Ibid, p. 116.

3. Ibid, p. 138.