PRINCIPAL SPEAKER

ASBESTOS, PCB'S AND HALONS

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Is this the answer to the question "What three environmentally unacceptable products were originally sold as a means to reduce fire risk." Sounds like the television show Jeopardy - or is it just the reality of life.

In the case of the first two, Asbestos and PCB's the public perception is that these are true modem day horrors. The facts, although seldom used to sell newspapers, would not justify the magnitude of public concern.

Will this be the future perception of the halons ?

Ladies and gentlemen, my thanks to Bob Tapscott, the other folks at NMERI and you for allowing me to share some thoughts and concerns with you today.

Public perception will provide the final judgment of our efforts, as members of the international fire protection community, to deal with the halons.

First let's put the halons into perspective as possible contributors to stratospheric ozone depletion.

In 1986 the total production of halons represented less than 2% of the production of CFCs. However, based on an ODP of 10 for halon 1301 and 3 for halon 1211 the halons represented about 13% of the potential ozone depletion potential of the CFC's.

The Synthesis of the Reports of the Montreal Protocol 1991 Assessment Panels included increased ODP values for the halons. An ODP value of 16 has been proposed for halon 1301 and it is proposed that a value of 4 would be appropriate for halon 1211. Using these values the 1986 production of the halons would of represented 19% of the potential ozone depletion of the CFC's. This would make the halons the largest single, sector specific contributor to ozone depletion of the substances controlled by the Montreal Protocol.

The 1991 Report of the Technology and Economics Assessment Panel stated that worldwide production of CFCs had declined by about 40%. It appears that halon production peaked in 1988 and is now rapidly declining. 1991 halon production is estimated at 40% less than 1986 production. As such our comparisons for 1986 are also valid for 1991.

We are a part of the problem and in fact should the production of halons not continue to decline at the same rate as the CFCs we will become THE PROBLEM.

Declining production however poses another serious problem for us. The number of halon production facilities is very small in comparison to CFC production facilities. It is difficult to achieve a gradual phase-out where the market is small and production facilities are limited. It should also be recognized that producers may not wish to be "last man in" as this could also put them in a very visible position as the last producer of the controlled substances with the highest potential ozone depletion values.

The present halon producers are in a difficult position. Replacements are not yet fully available, markets are declining, and the potential for negative publicity is considerable.

Fire equipment manufacturers have their name on the products that utilize the halons and fire equipment distributors are unable to provide assurance to their customers that quantities of halons that may be necessary to service or recharge systems after a fire will be available.

Users are also in a difficult position. There are existing halon applications where alternative fire protection measures would not provide an acceptable level of fire risk reduction. Aircraft are an obvious example. For explosion suppression and inerting applications the current candidate halon replacements do not appear to provide satisfactory results.

These and other important applications may represent between 10% and 30% of present halon usage. The existing bank of halons has the potential to provide for these applications in the future. However it will require a concerted effort and substantial investment to turn theory into reality.

Also at stake is the potential market for replacement agents. Where possible users are turning to other fire protection measures to achieve levels of risk reduction acceptable to them. This in turn may reduce the potential market for halon replacements, although there is hope that the market will recover in the future. Why the hope? Because most of the historic halon applications are best served by people—

safe, gaseous fire extinguishants. From a fire protection standpoint the halons did not replace other extinguishing methods, they were a new solution to protect a new family of high value facilities.

From 1963 to today our world has changed. We can dial a long distance call directly to virtually any place in the world. The Summer Olympics will be broadcast live to everyone with a television set. World financial markets are linked electronically and even common folk like us can access our bank accounts day or night. Air travel is affordable to most of us and airline reservations systems allow us to book a flight, reserve a room and have a rental car waiting for us at our destination. Dessert Storm amazed all of us, smart bombs, AWACS, intelligent weapons, enormously expensive aircraft. Oil and gas development in the arctic regions of the USA, Canada and Russia. In every one of these cases halons play an important part in reducing the consequences of fire. From the Research and Development facilities where the prototypes were built to the clean rooms where the parts were made to the facilities that house the final systems, halons have often been the fire extinguishant of choice. What did the halons replace - nothing - because not only did none of these capabilities exist 30 years ago, the idea that they could was beyond our imagination. There were and are good reasons why other extinguishing agents are not ideal for these applications. There is a future for replacement agents.

Coping with change is stressful, we all want the benefits of progress - as long as it is someone else who has to deal with the problems associated with change.

Many major cities are now requiring a minimum 25% content of recycled fibres to be used in newspapers sold from vending boxes placed on public streets. What a noble idea - reduce a waste problem, save a tree, a win-win situation. What a poor idea to eliminate 25% of the jobs in the forest industry, especially for a clearly renewable resource. For the person driving a truck to collect old newspapers an opportunity, for the person earning a living cutting trees, a disaster. For the companies making newsprint, time to make some expensive investment decisions in order to survive.

Environmental issues are of growing importance and will likely assume even greater importance in the development of new products and services in the future. The halon/ozone issue is only one aspect of the environmental impact on fire protection decision making.

Fire fighting operations at the Sandoz fire in Switzerland resulted in grave consequences for the Rhine, and at Sherwin Williams fire fighting operations were curtailed due to concerns regarding the effect of run-off on the aquifer. The new reality recognizes justifiable environmental concerns as another form of risk, of importance and required to be addressed.

The continued production of high ozone depletion substances is tolerable only on the basis that a date has been set to curtail production. Until environmentally acceptable replacement agents are available it is likely that use of recycled halons will be tolerated, if accomplished wisely.

One of the important criteria for the success of replacement agents includes recognition of foreseeable environmental concerns - not just in use but in the way these chemicals are made and eventually in how they will be disposed of. Measures to ensure cradle to grave responsibility will either be assumed by the manufacturer of the product or by agencies of government. I prefer the former.

In the area where I live we experienced a large scale fire in a tire dump a few years ago. Guess what has happened since? The government has assumed responsibility for the disposal of used tires - financed as you may have guessed by a new tax on every tire sold.

There were several reasons why this occurred. The first was the inability of the tire industry to deal with the problem themselves or to invest in the research and development effort to find secondary uses for the tires no longer suitable for their original purpose. As well, it is a complicated issue. Probably true that the tire manufacturers didn't see the public turning away from their product for as long as automobiles will need tires, no matter what their stance on the issue.

In fact, a smart manufacturer might have willingly accepted environmental stewardship and then competed by producing a more environmentally acceptable product, with lower recycling costs than others in his industry. The problem with government action in this regard is that the incentive to a manufacturer to address environmental issues associated with his product, in a competitive environment, has been removed.

The aluminum industry has been very successful in doing exactly that with soft drink and beer cans. Aluminum cans are a major disposal problem in comparison to steel because they will not rust away - their advantage is their ability to be recycled cost-effectively. In many cases, funding for community recycling programs has come from the beverage can industry, with strong support from the aluminum industry.

Environmental issues are not all bad news to manufacturers, they merely broaden the perceived benefits or disadvantages of a product, factors considered in a decision to purchase.

Industry is in the best position to address these issues. When industry fails to address these issues agencies of government take action. Often government takes action because the private sector has been unable or unwilling to deal with the issue. Our example of the tire manufacturers is a case in point.

In some cases the issue is dealt with by a combination of action from the private and public sector. Curbside recycling programs are an example.

This issue we are all doing our best to deal with is an example of government stimulus to encourage the elimination of substances that pose a serious environmental threat. A carrot and sack approach has been used. The carrot to provide incentive through funding of public education, research and other programs. The stick in the form of taxes, fines, bureaucratic procedures, limitations and threats that these measures could become truly draconian in the future.

In spite of all that has happened since that meeting that resulted in the Montreal Protocol, the halons continue to be treated differently than the CFC's. There are some who are of the opinion that "we lost" and there are many others who recognize that the individual and collective efforts that we have all contributed to this issue have ensured us the right to have a continued voice. It was members of the international fire protection community that recommended an eventual complete phase-out of halon production. Not a universally popular recommendation at the time, however when tough decisions are left to others we also abregate our right to be part of the process. We are part of the problem and we must be part of the solution.

We are at present faced with an enormous problem of proper utilization of the banked halons. We will likely face production phase-out of the halons well in advance of any regulatory required time schedule. Suggestions that have been made to allow a 15% allowance or an allowance for "essential uses" are unrealistic. What existing producer would want to run an uneconomic facility and be identified as the last of the producers of an environmentally unacceptable product. The focus and scrutiny that would bring is unlikely to be acceptable.

The greatest threat to the success of replacement extinguishing agents could be the manner in which the halon bank is handled. Should we allow the halons to be perceived as a hazardous waste then we will seriously impair the acceptability of replacements.

At present there is a balance between supply and demand for the halons. Supply consists of newly produced halons and recycled halons. Demand is currently declining and recycle quantities, in

theory, could be significant. Several factors could have a dramatic effect on balancing future supply and demand. The most significant of these factors would be:

- A fixed list of essential uses
- Rapid development of fully acceptable replacement agents
- Regulatory actions that would discourage recycling and reuse

A fixed list of essential uses could be the greatest threat to establishing wise bank management programs both nationally and internationally. A fixed list will make it very difficult to balance supply and demand in the early years and thus increase the costs of bank management or require early destruction and decreased availability in the future. In fact, as there are insufficient destruction facilities it would merely create an unmanageable problem. We honestly do not know all of the applications where halons have been used and are not in a position to provide the type of detailed analysis necessary for a proper decision based on "what if" suppositions available to us at this time. Defining some applications as "essential" also means that all other applications could be construed as frivolous, whether true or not. Finally a fixed list of essential applications entrenches applications and dependence on the present halons. This is a dynamic process and even those with clearly essential applications must understand that in the long term they are being given more time to find solutions. It is not the intent of bank management to justify continued dependence on the present halons past the point where the bank expires or is destroyed in an environmentally acceptable manner. Bank management procedures once established will be important in managing the destruction of the existing halons should the development of fully acceptable replacements allow us to eliminate dependency on the present halons before reserves are depleted.

Instead of a specific list of essential uses it is suggested that the following criteria developed by the 1991 Halons Technical Options Committee should be satisfied before reaching the conclusion that a new installation is an essential halon use:

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.

National regulations regarding the transfer of halons, suitable for recycle should be careful to allow transfer and use of recycled materials in order to expedite the phase-out of new production or imports of newly produced halons. Internationally it is important to allow transfer of recyclable halons or halons that must be shipped internationally for reprocessing. This will be simplest once the nations involved in the transfer have both ceased production of halons.

In the United States the following has been proposed as a means of establishing bank management procedures for transfers of recyclable halons between users. It is proposed that HARC, in conjunction with industry groups, users, regulatory agencies and environmental advocacy groups establish a code of good practice for use by users who wish to manage the halon under their ownership and fii equipment companies that would be involved in halon transfers between users.

In order to accommodate the transfer of halons beyond the scope of local markets or if otherwise required by the parties to the transfer it is proposed that an entity be created to accommodate such transfers and if necessary contract for the reprocessing of the recyclable halons. In such cases a review of the essentiality of applications for use would be undertaken by a committee of balanced interests. Parties to the transfer would commit themselves to this process in order to utilize this service. This would be a non-profit service. User fees would cover reprocessing and administration costs associated with essentiality review.

Wise management of the bank of halons is important to ensure a viable market for environmentally acceptable replacement agents. What will be the future public perception of our efforts - the choice is ours.