KEYNOTE

EPA'S "State of the Union" on Halon Substitutes

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and

The Regulation of Halon and Halon Substitues

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Keynote Address: EPA's 'State of the Union' on Halon Substitutes

Before halon, there was no market for chemical fire suppressants. As we have learned from previous keynoters (Jack Riley) at the NMERI conferences, the market had to be created. So successful was the creation of the halon market, that halons are still considered by many to be indispensable. When EPA came on the fire scene, this market mindset was firmly in place. We promoted the idea that the use of halon was not always necessary and that alternative tried-and-true technology which existed before the development of halon was, in fact, appropriate for many of the applications protected by halon.

Further, the fire suppressant market, the fire protection market, was so 'controlled' by the idea of halon that most people, when seeking an alternative wanted to find a chemical just like halon, a twin that acted the same and would require a minimum of change either in human behavior or in technology. EPA started with a different motivation and different ideas. We reasoned that the repair of the ozone layer could not wait for the 'perfect' substitute before halon use should cease or we would be waiting forever. We believed substitutes were already available for some halon usage, and that if we could convince users that some fire protection could be adequately served by other technologies, perhaps these users and vendors would begin to search out the less than 'perfect' alternatives which would be adequate for their needs.

But EPA also agreed that some uses of halon required a chemical substitute. We envisioned many chemical substitutes, some with properties uniquely fitted for each use. EPA's policy has been to encourage companies to develop alternatives. We believe strongly that the market will force development of new alternatives and technologies. We look to the industry rather than government agencies or research groups or academia to play the major role in developing substitutes and technology.

We rely on other groups as well as industry, to develop the science. We use data from NASA, from NOAA/Aeronomy laboratory, etc. In general, we have taken a position of working with other groups to get the job done, rather than doing it ourselves.

When the Montreal Protocol was signed, EPA's role in

stratospheric ozone protection derived from the Clean Air Act section 157(b) which, paraphrased, said: --"If the Administrator has reason to believe that the ozone layer is endangered, he/she can regulate any chemical or process believed to be responsible." -- This gave us broad latitude but it did not give much guidance. Because of that there was some confusion, even mistakes.

For example, we were thinking in terms of overall ODP. If one could develop a product with an ODP lower than the CFCs, one would consider that to be an advantage over the halons. But, the Clean Air Act Amendments of 1990 (CAAA) came out saying that any substance with an ODP of 0.2 or greater would be a class I substance and would be subject to a production phaseout as are the CFCs and halons. That knocked out some potential substitute compounds and mixtures using CFCs even if the product had an ODP lower than 0.2 because the individual components would be phased out.

In many ways the language of the CAAA was as surprising to us as it was to some of you. Prior to passage of the CAAA, the EPA Office of Air and Radiation (the Air Office) had no regulatory means of controlling new substitutes. We believed it would not be difficult to get new substances approved since we assumed, as many of the chemical companies did, that the fluorocarbon substitutes, although more reactive, would not be very toxic, and that regulatory decisions would be easy for the Agency to address -- easy because the data needs were anticipated by the chemical companies who had earlier constituted themselves into a consortium (PAFT) to get testing done.

But the assumption of a quick evaluation of CFC and halon substitutes proved to be in error. Bureaucracies tend to grow and the evaluation of the proposed substitutes was an ideal reason to establish a 'suborganization' to 'help' the evaluation process along. Usually, the more people become involved, the slower are the results. That's when I was transferred into the stratospheric ozone program to keep the evaluation process running as smoothly as possible without increasing any 'red tape'.

The first effort was to work with the companies to develop data in a form which would be much easier for the Agency to process and to streamline some of the decisions. Initially, streamlining began by adopting a risk-balancing approach. For example, we were not going to require chronic toxicity testing for the type of short-term exposure usage characteristic of fire suppression. In that sense, we have acted as an ombudsman to get these chemicals through the regulatory process.

EPA's regulatory system was not the only hurdle that had to be overcome. When the halon industry understood that they might be regulated by EPA of all agencies, their first reaction was

"what right did EPA have to meddle in fire protection?" (And, if you will remember last year's keynote, EPA took some heat on this.) And, EPA itself had to decide what role we were going to play in fire protection. Although the new Clean Air Act gives us wide regulatory latitude, we decided not to reinvent the wheel. The role we decided to play was to act as a facilitator to change the way people were thinking about fire protection and halon use and to create an environment which would make it easy for substitutes to come into the market. We reasoned that we didn't have the budget, we didn't have the staff, we certainly didn't have the expertise, and happily some of us didn't have the arrogance that would be required to develop a whole new program that would have likely been similar to programs already developed by NFPA, UL, FM etc. Even in regard to exposure we adopted what OSHA had already done.

Instead, we embarked on a program of cooperation and collaboration. And that process has led to the Significant New Alternative Policy (SNAP) program.

The role of EPA has many aspects. We were regulatory, but we were also promotional. We often have acted as a gadfly. We convinced some people that they needed to get out of halon. And, we have played a collaborative role with NFPA and the military, recognizing the special needs of the military (which is why we started the bank) and the special expertise of NFPA.

Last month we reached a milestone. The initial SNAP rule is out and there are some -- none perfect but pretty good -- halon substitutes. EPA has not been too onerous in its regulatory role, and now EPA is about to branch off into the role of outreach to get people to adopt these substitutes.

Problems remain, however. Everything we have done so far has been while watching a moving target...a sometimes rapidly moving target. The Montreal Protocol seems to be getting tighter and tighter all the time.

Each time the Parties to the Protocol have met, we and you have had to adjust to more restrictive production limits with more rapid phaseout schedules. We are under no illusions about the process of negotiation of the Parties to the Protocol. It is a political negotiation process which is modified by scientific assessments and technology development. Since much of the data which informs the discussions is based on modelled predictions of future use and emissions which are themselves uncertain, it is not surprising #at policy positions may also be uncertain. Nevertheless, some statements can be made concerning what the future of the HCFCs, PFCs and other global warmers are likely to be.

On HCFCs: Whenever the Parties have considered HCFCs they

have expressed a concern for the potential release of chlorine to the stratosphere. Generally EPA has taken the position that HCFCs should be used where other environmentally suitable alternatives are not available. Some examples of EPA's risk managed decision making are:

> Solvent substitutes for general metal cleaning which use HCFCs would be discouraged, if not listed as unacceptable, since metal cleaning is a large sector, emissions are poorly controlled and other alternatives are available.
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> Use of an HCFC streaming agent in residential settings would not be approved because other alternatives are available, and emissions cannot be controlled, and this use is potentially too widespread and uncontrollable.
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> HCFCs as a retrofit refrigerant for CFC-11 building chillers (HCFC-123) is encouraged in the U.S. -- with a low GWP, a low ODP -- its use has been extended to 2030. This is the most significant usage of an HCFC.

On PFCs: Bluntly, we don't like them and we intend to discourage their use. There is no use of PFCs which we believe to be absolutely necessary. Any approvals we have given are limited and we hope restrictive. The language is clear: when no other alternative/substitute technology/etc. will work, then and only then, can PFCs be used. These compounds last forever. If you believe that the planet will still be here in 500 years, you have to believe these chemicals should not be used!

Our goal is to protect the environment and we are operating under the assumption that this is your goal too. We could not succeed unless we cooperate.

With that as a contextual introduction, let me now pass the podium to Karen Metchis. Karen will review the current SNAP rule, and give you an advance look at future EPA activities.