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or impair mission readiness. DoD prefers that all critical halon based systems be "grandfathered." EPA is considering DoD's position and is exploring the possibility that specific emission control procedures be implemented. DoD and EPA will continue discussions related to a program to minimize future halon emissions.

AVAILABILITY OF SUBSTITUTES

Question 7(a):

What is the basis for believing that safe, non-toxic, and technically effective substitutes can be developed and used by all the affected users within the time frames being discussed and supported by Ambassador Benedick? Is the U.S. basing its negotiations on the above DuPont comment which appears quite speculative, is dependent on some unspecified incentives that apparently do not now exist, and fails to discuss the time required by the users to adapt to any such substitutes? What time is required for users to accommodate substitutes, assuming they are adequate?

Response:

As indicated in an earlier response, based on our on going analysis EPA believes that current control technologies, and use of currently available product and chemical substitutes will allow sufficient emissions reductions to achieve the quantitites of reductions now being discussed for the next 6 - 8 years.

Examples of specific controls, potential emission reductions and their rough costs are identified in Exhibits 3 and 4.

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SAMPLE SHORT-FERM EMISSIONS REDUCTIONS*

	Application	Current Weighted Emission (ML)	 Emission Control	Weighted Emission Reduced (M1)	Control Cost* (\$/kg)
0	Aerosols	1,328	 Ban non-essential and loophole uses	1,832	 Ş1
0	Mobile Air Conditioning	41,710	 Use alternative leak test gas (Helium)	42	5.54
0	Refrigeration	17,345	 Centrifugal/Reciprocal chillers recovery at service	1,331	< S1
			 Alternate leak test gas for chillers, transport, etc.	350	< \$1
			 Recovery at disposal for cold storage, retail food, chillers	878	< \$1
0	Flexible foam	14,800	 Use vertical chamber	46	< \$1
			 Use minimim foam density standard with methylene chloride	6,440	< \$1
0	Rigid Foam	12,758	 Use EPS or fiberglass in various insulation applications	2,550	< \$1
			 Replace foam products with paper or plastic products in food and packaging industries	3,030	< \$1
0	Solvents	33,095	 Use refrigerated chillers and covers on degreasers	2,985	< \$1
					ι,
			 Use carbon adsorption in dry cleaning process	330	< \$1
0	Sterilization	9,985	 Switch to Ethylene Oxide (EO)/CO2 mixture	7,488	< \$1 2 3
			 Switch to nitrogen purge, EO system	5,990	< \$1 \$ 5
0	Food Freezing	2,580	 Use air blast technology for freezing fuo	d 2,064	< \$1 2 3 5
0	Halon-1211 Portable Fire Extinguishers	972	 Alternative training procedure	67	< \$1
0	Halon-1301 Flood System Fire Extinguishers	11,120	 Segment the system	931	le tot
			~	28,866-34,209 (18-22% of tota eighted emissio	۲ ns)
				Totat will	BERGUISCO

* Very preliminary estimates, some of the above options are mutually exclusive.

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	Application	Current Weighted Emission (ME)	 Emission Control	Total Weighted Emission Reduced (M1)	Control Cost* (\$/kg)
0	Aerosols	1,328	 Use Chemical Substitutes	1,832	 \$2
0	Mobile Air Conditioning	41,710	 Tighten the System Switch to CFC-22	1,820 14,534	< 51 <\$10
0	Refrigeration	17,345	 Increase recovery at service and disposal and use alternate test gas	3,470	< \$1
			 Switch to CFC-22	870	<\$10
)	Flexible foam	14,800			\$
	,		 Switch to water blown foam	4,200	< \$4
			 Switch to formic acid for molded foam	1,200	< \$2
)	Rigid Foam	12,758	 Increase use of EPS and other insulating material	5,000	< \$2
)	Solvents	33,095	 Increase vapor recovery	4,970	< \$1
					•
)	Sterilization	9,985	 Complete switching to other systems EO/CO2 or N2 purge	9,985	< \$1
0	Food Freezing	2,580	 Complete switching to air blast technology	2,580	< \$1
)	Fire Extinguishing Portable	972	 Increase training and use alternative agent and non-destructive test	195	< \$1
0	Fire Extinguishing	11,120	 Use alternative test procedure, alternative test agent	5,000	< \$1
			-	74.700	

POSSIBLE MID-TERM EMISSIONS REDUCTIONS WITHOUT CHEMICAL SUBSTITUTES*

* Very preliminary estimates, options are sometimes mutually exclusive.

As indicated in the short-term options (0-4 years) 18 to 22% of weighted emission reductions can be obtained with existing technologies. Our preliminary estimates indicate that most of the reduction can be achieved at less than one dollar per kilogram of emission reduction. Additional 10 to 15 percent reduction can be achieved for less than \$3/kg.

Over a period of 6 - 10 years, our preliminary estimates indicate that 40 to 55% emission reductions can be achieved at less than \$2/kg. This range includes switching to alternative substitutes such as CFC-123, 142b - both or which are now available. If available, FC-134a could reduce emissions by an additional 10% at estimated cost of \$4 - 8/kg. For example, achieving 40-70% reduction by 1996 will provide up to 9 years from today to allow development and implementation of chemical substitutes in certain applications.

While DuPont claims that CFC-123 and 134a can reach the market in 5 years if financial incentives exist, our analysis is not soley based on their comments. Our draft contractor study indicates that:

- CFC-123 appears to be a good substitutue for CFC-11 with much lower ozone depletion potential.
- CFC-134a appears to be an excellent substitute for CFC-12 and has no ozone depletion potential.
- ^o Many countries and companies have 134a and 123 patents. CFC-123 is already available in limited quantities in the U.S. and Japan.
- Preliminary toxicology testing seems very encouraging for the abovementioned chemicals. However, it is take 5 years before we really know (shykind).

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 Costs of chemical substitutes are expected to be higher than CFC-11 and 12. However, in the long run, the economic disruptions would be minimized since large reductions can be achieved cost effectively in short and mid-term with existing technologies allowing time for minimizing transition costs to new chemicals. We believe sufficient time will be available to develop and implement alternatives for longterm reductions.

We also have convened an international substitute paccel that includes a toxicologist, marketing experts and industrial and academic chemists from many countries. They are currently reviewing CFC-123, 124, 132b, 134a and 141b. The discussions indicate that keys to substitute availability are:

- toxicology testing
- use testing
- adequate incentives for firms to make R & D incentives.

Our investigations so far indicate that small quantities of some of the above chemicals will soon be available to carry out preliminary toxicity, performance and thermodynamic properties evaluations for key user industries. We are bringing together representatives from user industries with the expert panel on substitutes and are working with some major user groups to facilitate testing of CFC-134a.

Question 7(b) (c):

Realizing that Dow has a vast economic stake in these matters as do many industries, to what extent has EPA and the Department of Energy (DOE), with its energy conservation duties, considered the matters raised by Dow? Do EPA and DOE disagree with Dow? Does the present U. S. position reflect these concerns that I assume are not unique to Dow?

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Response:

We have not done an analysis of caustic and chlorine imbalance. However, a cursory analysis indicates that some demand for chlorine would continue in production of alternative CFCs where, except FC-134a, all CFCs are partially halogenated.

Our analysis also indicates that tetrachloroethylene is required in CFCs and Dow is a major producer of chlorinated hydrocarbons including tetrachloroethylene.

We have taken the possibility of increased energy costs and health and safety trade-offs into account in developing control feasilibity and cost estimates.

Question (d):

EPA is specifically investigating the stock of existing appliances and the likely service requirements. In addition, EPA is investigating the full range of options, such as preventive maintenance, improved service procedures, and refrigerant recovery at product disposal, which would minimize emissions.

When will this EPA investigation be completed and the results available for U. S. consideration in the negotiations?

Response:

We intend to have the analysis completed by June 1, 1987. These factors have been considered in calculating the emission reduction potential of specific control options presented in exhibits 3 and 4.

Other Matters:

Question 8:

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In reply to Question 4(c), EPA said that "CFCs used to fill air conditioners in motor vehicles would be counted by the producing nation even if the vehicles were shipped to the U.S. or elsewhere." Is that true where, as already noted, foreign manufacturers ship the vehicles to the U.S. and charge the air conditioner with the CFCs in the U.S.? If that practice was expanded, what would be the the impact on the U.S.?

Response:

See Question 1 - above.

Question 1

I request your explanation of EPA's rulemaking and protocol activities and the extent to which those activities are being coordinated with your protocol activities?

Response to Question 1

We believe that given the global nature of this issue, a global solution to protecting the ozone layer is required. At the same time, under Section 157(b) of the Clean Air Act, we are required to evaluate the need for additional domestic regulation to protect the ozone layer. We are currently involved in activities which support both the international negotiations and domestic rulemaking activities.

Most of these activities (e.g., analysis of chemical substitutes, engineering and cost studies, and implementation issues) are essential either in the context of implementing an international agreement or, failing that, in the event that domestic unilateral action proves necessary. This point was specifically made at the February 18th meeting you cite. Participants were told at the begining of the day that the discussion of regulatory alternatives did not signal that the U.S. intended to take unilateral action, and would also be useful in implementing an international agreement.

You also raise the issue of the extent to which costs and feasibility are being considered as part of EPA's review of regulatory alternatives as required by section 157(b). One of the primary evaluation criteria we are using in analyzing regulatory options is cost. We are concerned not only about costs to users and consumers and across industry groups, but also about the degree to which actions might cause the premature retirement of capital equipment and their effect on the development of chemical substitutes. A key concern raised repeatedly by industry groups is that they need adequate time to move away from the current family of CFCs.

You also question the degree to which EPA has involved user industries in conducting its analysis. In a response to a prior letter, we enclosed exhibits listing the extensive contacts between EPA staff and users and on-going studies of the costs and feasibility of controls. We intend to continue these contacts and are working closely with several user groups to improve their members' understanding of this issue and to enhance our understanding of the impacts of regulatory alternatives. For example, as a follow-up to the February 14th meeting, we held a second facilitated meeting of producers, users, and environmentalists which focussed on specific design options for permit and fee systems. As the process continues we intend to work with user groups in further refining and analyzing these regulatory approaches which could be used either to implement unilateral action or to implement a global protocol. We recently held a similar facilitated meeting which related to trade issues.

Question 2

I understand that EPA is thinking about asking the court to delay the May 1 date. I would like to know why. I would also like to know the implications of that request. Does it suggest that at the end of the time EPA will propose a rule regardless of the status of the protocol regulation?

Response to Question 2

Under the court order, by May 1, 1987, EPA must either propose regulations or present a basis for a proposed decision to take no regulatory action. EPA is continuing to work toward that deadline, but the task of analyzing relevant implementation issues has proven complex and difficult. As a result, EPA may seek an extension of the May 1 deadline. If the court granted such an extension, EPA would still have the discretion to propose either regulations or a decision to take no action.

Question 3

I note that the February 18 document states (at page 8) that "EPA representatives agreed that they could prepare brief summaries and analyses of how various programs could work, highlighting specific questions." Please provide copies of them, as well as the legal basis for establishing (by rule) a fee provision.

Response to Question 3

We have attached as appendix A the materials distributed prior to the faciltated meeting on April 2 relating to fees and permits. In response to requests from representatives from industry, we now intend to explore working with specific user groups to develop materials for them to send to their members to assist in future evaluations.

Section 157(b) states that EPA "shall propose regulations for the control of any substance, practice, process, or activity (or any combination thereof)" We believe that this broadly-worded provision gives EPA wide latitude to develop effective and efficient regulatory approaches for achieving the goals of this section of the act. EPA is currently exploring whether a system of fees would be an appropriate means to achieve the regulatory goals. Any revenue raised from a fee would be incidental to its primary goal of protecting the ozone layer and human health.

Question 4

Please explain the plans for this conference and fair [technical conference and trade fair on CFC control innovations] and why industry must underwrite it. Also please provide the basis for this information about vendors [who have products under development] and identify them.

Response to Question 4

EPA is proposing a technology fair for innovative products and processes that could reduce emissions of chlorofluorocarbons and halons. We asked the Alliance for Responsible CFC Policy to co-sponsor the fair because of its stated interest in encouraging emission reductions and the development of chemical substitutes. We thought that the Alliance's early involvement and support would further ensure widespread interest and participation. The Alliance has recently informed us that the group is not interested in assisting with funding although its members are likely to participate. We intend to continue planning for this effort and view it as an important vehicle for informing industry of possible methods for reducing CFC and halon emissions.

The fair will be held in Washington in early fall and will feature nationally prominent speakers, workshops, product displays, and poster sessions. Some of the likely topics include:

CFC-134a and other possible chemical substitutes Solvent recovery services Refrigeration alternatives Refrigerant leak detectors CFC refrigerant recovery machines Foam/suspension Building insulation systems Sterilant gas recycle/central service Halon full-discharge test alternatives Fast food packaging alternatives GAO/MILSPEC procedure and practice

The trade fair is appropriate for focussing attention on CFC and Halon emission reductions because of the size of the chemical markets, the number of user firms, the complexity of emerging technologies, the timing of possible regulation, and the opportunity for exchange of ideas.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

THE ADMINISTRATOR

Hoñorable Henry Waxman Chairman, Subcommittee on Health and the Environment Committee on Energy and Commerce US House of Representatives Washington, DC

Dear Mr Chairman:

I am writing in response to your letters of March 16 and March 26 regarding the depletion of stratospheric ozone. In those letters, you raised questions concerning the effect of the recent Nimbus 7 satelite data, and the implications of these findings on future ozone depletion.

With regard to the impact of the Nimbus 7 data, I want to assure you that we have followed and will continue to follow closely the developing evidence from all sources including the recent National Ozone Expedition to Antarctica and the evaluation of data from the Nimbus 7 satellite. However, given the preliminary nature of the data, we do not believe that enough is yet understood to modify current estimates of risks. We are nevertheless analyzing the possible implications of these preliminary findings in order to be in a position to respond once they are better understood.

The U.S. position in the international negotiations on CFCs takes into account the likelihood that in future years we will have a better understanding of the relationship between chloro-fluorocarbons and ozone. Specifically, it calls for a periodic reassessment of control requirements based on the availability of new scientific, technical, and economic factors. We believe that this aspect of the current U.S. position provides for the flexi-bility needed to respond to changes in our understanding of this issue.

With regard to the implications of the Heath data for projections, of ozone depletion, as you note in your letter of March 25, questions still exist concerning the interpretation of the data from the Nimbus 7 satellite which must be resolved before any conclusions can be reached about current estimates of future depletion. NASA has initiated a thorough review of this data which should be completed in September. Until this data has been verified and its interpretation clarified, it would be premature to revise model estimates. Comparison of the Nimbus 7 data with that from the ground-based Dobson network and the TOMS data should provide a much clearer picture of recent trends in global ozone. We are, of course, extremely interested in the expedited review of this data. We will continue our discussion with the lead agencies in these areas, i.e., NOAA (for the groundbased network) and NASA (for the satellite-based data).

In your letter of March 25, you requested that we provide projections of future ozone depletion assuming Heath's findings are correct and that CFCs are the cause of the depletion. If these two assumptions are correct, then current models clearly do not accurately characterize the relationship between CFCs and ozone. Exhibit 1 illustrates the depletion that current models indicated have occurred over the past eight years and the amount assuming the Nimbus 7 data are accurate.

While this graph clearly shows that current models may be underestimating depletion, it does not provide a basis for extrapolating into the future, even making the assumptions you listed in your letter. More analysis would be required to explain the basis for this underestimate. Changes in kinetic rates, inclusion of heterogenous chemistry, or some other factor or combination of factors would have to be altered in current models before a credible new set of projections would be possible.

ANALYSIS OF RISKS

Implications of Developing Information



3/7/87

Statement of Richard Elliot Benedick, Deputy Assistant Secretary of State for Health, Environment and Natural Resources to the Subcommittee on Natural Resources, Agriculture Research, and Environment Committee on Science and Technology U.S. House of Representatives

March 12, 1987

The United States, along with other nations of the world, is engaged in an historic effort to undertake cooperative measures to prevent potentially serious adverse effects from depletion of stratospheric ozone. The Vienna Convention for the Protection of the Ozone Layer, signed in March 1985 under the auspices of the United Nations Environment Program (UNEP) and ratified by the United States in August 1986, was an important first step. But additional concrete measures are necessary. We are now engaged in negotiations under UNEP auspices on a protocol to the Convention which would provide for controls on ozone-depleting chemicals.

EPA is the agency with responsibility under the Clean Air Act for domestic regulation of ozone-depleting substances. We are working closely with EPA to keep our domestic and international efforts congruent. We and EPA have consulted closely with other agencies and with representatives of U.S. industry and environmental groups as the domestic and international processes develop.

Laying the Foundation of Common Understanding of the Issue

Between the adoption of the Convention in Vienna in March 1985 and the resumption of negotiations on control measures in December 1986, the international community participated in a unique cooperative effort to improve common understanding of the nature and impacts of the ozone depletion issue. The United States Government played a leading role in that process.

- -- A two-part UNEP workshop, in Rome in May 1986 and in Leesburg, Virginia in September 1986, focused on key economic issues related to the control of osonedepleting chemicals.
- -- In June 1986, the U.S. co-sponsored with UNEP an international conference with over 300 participants on the effects of both ozone depletion and climate change.

- -- The Coordinating Committee on the Ozone Layer (CCOL), a UNEP body a comprising scientists from many interested nations, assessed current knowledge of the atmospheric science and effects of ozone depletion, and presented their findings to UNEP for consideration in the development of measures to protect the ozone layer. Scientists and policymakers from EPA and NASA played a leading role.
- -- 150 scientists, coordinated by Dr. Robert Watson of NASA, prepared a landmark publication on the state of knowledge about atmospheric ozone, under the auspices of NASA, the World Meteorological Organization (WMO), UNEP, the European Communities, NOAA, FAA and the German Federal Ministry for Research and Technology.

At the same time, U.S. government representatives were working bilaterally with various governments to improve understanding of the nature of the problem and the options for reducing risks.

- -- EPA, NASA and NOAA worked with scientists in key nations to increase understanding of the risks if depletion_should occur and to advance scientific assessment and monitoring capabilities.
- -- We discussed the issue with policymakers in key countries. For example, I traveled, with a team from EPA, to Brussels and Bonn last November for consultations in preparation for the December negotiations.

As this extensive bilateral and multilateral effort moved forward, we saw that consensus was emerging, both in the United States and in the international community, in a number of important areas:

- -- The ozone layer is an exceedingly valuable resource for the present and future population of the world.
- -- The ozone layer is likely to be adversely affected by the long-lived chlorine molecules which stem from chlorofluorocarbons.

- If ozone depletion occurs, the increase in harmful ultra-violet radiation reaching the earth could pose significant, even if currently difficult to quantify, risks.
- -- While many scientific questions remain to be answered, the risks are sufficiently serious as to warrant control actions.
- -- The very nature of the ozone layer requires global cooperation if protective measures are to be effective.

The U.S. Position

The United States Government believes that the potential risks to the stratospheric ozone layer require early and concerted action by the international community. We seek agreement on the following:

- o A near-term freeze at current emission levels of CFC 11, 12, 113, and 114, and Halons 1211 and 1301;
- A longer-term scheduled reduction of up to 95% in emissions of these chemicals; linked to
- Periodic reassessment based on a regular review of the science and of economic and technical considerations.

No specific time frames and no specific percentage reductions have been determined for the scheduled reductions as of the present time; studies of environmental and economic implications of various options are under way, however, to provide the basis for a U.S. position on these elements of a protocol.

We believe a protocol should:

-- provide as much certainty as possible for industrial planning in order to minimize the costs of adjustment;

provide adequate time for shifting away from ozone-depleting chemicals to avoid social and economic disruption, while at the same time give a strong incentive for the rapid development and employment of safer substitutes and recycling techniques;

- -- address all the principal man-made sources of long-lived atmospheric chlorine and bromine;
- -- allow flexibility for national implementation by allowing trade-offs among controlled chemicals based on their relative ozone-depleting effects;
- -- take into full consideration scientific uncertainties and promote future improvements in understanding by instituting a requirement for periodic reassessment of the goal and timing of limits;
- -- create incentives to participate in the protocol by regulating relevant trade between parties and non-parties.

Geneva, December 1986 and Vienna, February 1987

We have come a long way since March 1985 in Vienna, when many nations questioned the need for control measures. In the first round of resumed negotiations last December, representatives from all regions agreed that new measures must be taken in the near term to control emissions of ozonedepleting chemicals. However, the discussions were general, and substantial differences over the scope, stringency and time-phasing of control measures remained.

Among other participants at Geneva in December, Canada and the Nordic countries advocated strong, early action. The European Communities (EC), Japan and the USSR acknowledged the need for controls, but did not yet support the long-term measures, broad coverage, and trade provisions we believe are necessary to make the protocol effective.

Between the December and February rounds, we consulted actively with a number of nations, through discussions with environmental, foreign ministry, and trade officials in Washington and abroad, through our Embassies, official visits, and scientific exchanges. For example, a team from NASA, NOAA and EPA traveled to Moscow. We met in Washington with Canadian representatives. I traveled to Europe again. Deputy U.S. Trade Representative Smith and Assistant Secretaries of State McMinn and Negroponte raised the issue with senior officials in Tokyo. Through the USIA "Worldnet" interactive satellite hookup, Dr. Robert Watson of NASA and I discussed the issue with experts, policymakers and journalists in ten European capitals.

The February round of negotiations in Vienna brought widening agreement on many aspects of a protocol, including a near-term freeze and longer-term reductions. Other elements of progress in Vienna include:

(1) formulation of a useful "Chairman's text" for the critical control Article II;

(2) movement toward agreement on ranking substances according to their ozone-depleting potential;

(3) good progress on restrictions on trade with non-parties;

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(4) an "enhanced" commitment to international cooperation on (i) research, (ii) systematic observation, and (iii) international scientific assessments;

(5) clear evidence of movement, although not yet unanimous, 61.d within the EC;

(6) setting of a date for the Diplomatic Conference (September 14-18 in Montreal).

Trade Measures

We seek a protocol which would protect the stratosphere but avoid giving unfair advantage to industries of countries which do not participate in the protocol. In Vienna, the sub-group on trade accepted with only minor changes U.S.-proposed language which would, inter alia, ban bulk imports from non-parties of controlled chemicals and ban or restrict imports from non-parties of products containing these chemicals. Progress on this issue was particularly welcome, since in December many key participants in the negotiations were resistant to discussion of trade measures, largely because they had not yet seriously addressed the issue. Now there is recognition that trade measures such as the U.S. proposed are necessary in order to (a) protect industries in countries party to the protocol from being put at a competitive disadvantage vis-a-vis industries of non-parties; (b) create an incentive for broad participation; and (c) discourage the movement of production facilities to non-parties.

Looking Ahead

All the movement is in the right direction. But the hardest negotiations are still to come. For example, the participants must still negotiate the specific stringency and timing of controls, determine precisely which substances are to be restricted, and specify treatment of developing countries, non-parties and late-signers.

The next round of negotiations is scheduled for April 27-30 in Vienna, with an informal meeting in Oslo April 8-9 to consider the chairman's text. The United States will continue to pursue the objectives I have outlined. We will continue to consult actively with other nations and with interested sectors in the United States.

This is a difficult and complex negotiating process. We have made substantial progress, but we have a long way to go to reach an effective agreement with broad participation. Meanwhile, we must be sure that our actions domestically support and do not undercut that international process, since this is clearly a matter which the U.S. cannot resolve alone. We have entered a new era of truly global environmental management, in which we are all made more conscious of the unity and vulnerability of our planet.

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United States Proposed Protocol Text

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UNEP Negotiations on an Ozone Layer Protocol

December 1-5, 1986 Geneva, Switzerland

The United States believes that the potential risks to the stratospheric ozone layer from certain man-made chemicals require early and concerted action by the international community. Since the adoption in Vienna in March 1985 of the Ozone Layer Convention, an intensive scientific research and technical analysis effort has been carried out and is continuing, as reflected in the recent series of UNEP-Sponsored workshops. The results continue to indicate the emergence of a serious environmental problem of global proportions.

The United States further believes that governments should pursue three broad objectives during the course of the negotiations, to be embcdied and elaborated in the final protocol. These are:

- A. Agreement on a meaningful near-term first step to reduce significantly the risk of stratospheric ozone depletion and associated environmental and human health impacts.
- B. Agreement on a long-term strategy and goals for coping with the problem successfully.
- C. Agreement on a carefully-scheduled plan for achieving the long-term goals, including periodic reassessment and appropriate modification of the strategy and goals in response to new scientific and economic information.

In response to UNEP's invitation, the U.S. has prepared for discussion purposes a draft text based on the U.S views statement which we recently circulated. This text is for the operative articles only, and is designed for incorporation into the protocol text developed during the previous round of negotiations (i.e., it would replace Articles II through V of the fourth revised draft text).

The United States believes that what is required is a straightforward, cost-effective approach that will provide technology incentives and clear targets to governments and industry for developing and introducing new technologies for chemical conservation, recycling and substitution. The U.S. believes that its proposed text provides such an approach.

U.S. DRAFT PROTOCOL TEXT: OPERATIVE ARTICLES

Article II: Control Measures

- Within [] year after entry into force of this Protocol, each Party shall ensure that its aggregate annual emissions of fully-halogenated alkanes does not exceed its 1986 level.
- 2. Within [] years after entry into force of this Protocol, each Party shall ensure that its aggregate annual emissions of fully-halogenated alkanes is reduced by [20] percent from its 1986 level.
- 3. Within [] years after entry into force of this Protocol, each Party shall ensure that its aggregate annual emissions of fully-halogenated alkanes is reduced by [50] percent from its 1986 level.
- 4. Within [] years after entry into force of this Protocol, each Party shall ensure that its aggregate annual emissions of fully-halogenated alkanes is reduced by [95] percent from its 1986 level.
- 5. The right of any Party to adopt control measures more stringent than contained herein is not restricted by this Article.

Article III: Calculation of Aggregate Annual Emissions

- 1. For the purposes of Article II, each Party shall calculate its aggregate annual emissions by taking its:
 - a. aggregate annual production;
 - [b. plus aggregate annual bulk imports;]
 - [c. minus aggregate annual bulk exports to other Parties;]
 - [d. minus aggregate annual amount of fully-halogenated alkanes which have been destroyed or permanently encapsulated.]
- 2. To calculate the aggregate amounts specified in the subparagraphs of paragraph 1, each Party shall multiply the amount of each fully-halogenated alkane by its ozone depletion weight, as specified in Annex A, and then add the products.

Article IV: Assessment and Adjustment of Control Measures

- 1. The Parties shall cooperate in establishing an international monitoring network for detecting, or aiding in the prediction of, modification of the ozone layer.
- 2. At least one year before implementing the reductions specified in paragraphs 2, 3, and 4, respectively, of Article II, the Parties shall convene an ad hoc panel of scientific experts, with composition and terms of reference determined by the Parties, to review advances in scientific understanding of modification of the ozone layer and the potential health, environmental, and climatic effects of such modification.
- 3. In light of such scientific review, the Parties shall jointly assess and may adjust the stringency, timing, and scope of the control measures in Article II and the ozone depletion weights in Annex A.
- 4. Any such adjustment shall be made by amending Article II and/or Annex A as provided in Article 9 of the Convention, except that such amendment would not be subject to the six month advance notice requirement of paragraph 2 of that Article.

Article V: Control of Trade

- 1. Within [] years after entry into force of this Protocol, each Party shall ban the import of fully-halogenated alkanes in bulk from any state not party to this Protocol [, unless such state is in full compliance with Article II and this Article and has submitted information to that effect as specified in paragraph 1 of Article VI].
- Within [] years after entry into force of this Protocol, each Party shall ban:
 - a. the export of technologies to the territory of non-parties
 - [b. direct investment in facilities in the territory of non-parties]

for producing fully-halogenated alkanes [, unless such state is in full compliance with Article II and this Article and has submitted information to that effect as specified in paragraph 1 of Article VI].

3. The Parties shall jointly study the feasibility of restricting imports of products containing or produced with fully-halogenated alkanes from any state not party to this Protocol.

Article VI: Reporting of Information

- Each Party shall submit annually to the Secretariat data showing its calculation of aggregate annual emissions of fully-halogenated alkanes, as specified in Article III, using the format developed by the Secretariat pursuant to paragraph 3a.
- 2. Each Party shall submit to the Secretariat appropriate information to indicate its compliance with Article V.
- 3. The Secretariat shall:
 - a. develop and distribute to all Parties a standard format for reporting such data as indicated by paragraph 1;
 - b. take appropriate measures to ensure the confidentiality of all data submitted to it pursuant to paragraph 1, except for the aggregate annual emissions figures;
 - c. compile and distribute annually to all Parties a report of the aggregate annual emissions figures and other information submitted to it pursuant to paragraph 2.

United Nations Environment Program

Protocol on Protection of the Ozone Layer Plenary Statement by the Representative of the United States

> Ambassador Richard Elliot Benedick Deputy Assistant Secretary of State

> > Geneva, December 1, 1986

Two years ago in Vienna the nations of the world took the unprecedented and momentous step of addressing an environmental risk of global significance before its actual impact was experienced by mankind. Many-of you here today can take pride in the Convention that emerged from that effort.

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We also recognize, however, that our success in achieving a framework Convention was tempered by our inability to reach agreement on specific measures to control the chemical substances which have been associated with ozone layer depletion. We have an opportunity this week to begin to rectify that situation. Indeed, as government officials charged with the health and well being of the citizens of our respective nations, we must not shrink from this challenge.

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In Vienna, we set in motion a process to arrive at this point with improved insights into the nature and impacts of the ozone depletion issue. A series of international workshops (Rome, Leesburg) have been held. The Coordinating Committee on the Ozone Layer has done its work. And the United States and other nations have carried out and shared the results of increasingly sophisticated modeling, monitoring and research. My government believes that the results of this collaborative effort can be summarized as follows:

-- Important scientific uncertainties remain.

- -- Nonetheless, the results of our models and inquiries continue to indicate the existence of a serious and growing threat to the integrity of the ozone layer.
- -- Further, production and emissions of CFCs and other chemicals, including halons, which are linked to ozone depletion, continue to increase.

Consequently, we believe that governments must take prudent steps to build in a measure of safety in order to protect current and future generations. Two years of analysis indicate that we simply cannot go comfortably about business as usual. Positions and views held earlier must now give way to a willingness to explore new approaches.

My government believes that the potential risks to the stratospheric ozone layer require early and concerted action by the international community. The United States further believes that, in deciding upon such actions, we might consider three general objectives:

- Agreement on a meaningful near-term first step to reduce significantly the risk of stratospheric ozone depletion and associated environmental and human health impacts.
- Agreement on a long-term strategy and goals for coping with the problem.

3) Agreement on a carefully scheduled plan for achieving the long-term goals, including periodic reassessment and appropriate modification of the strategy in response to new scientific and economic information.

I hope that, as we go forward this week, these objectives can be addressed. I hope that we can agree on a relatively simple and cost-effective approach that will provide incentives and clear targets to governments and industry for rapidly developing and using new technologies for emission controls, recycling practices, and safer substitute chemicals. Finally, I hope that lengthy negotiations can be avoided, and that a reasonable and defensible formula can be found on which most or all of the concerned governments can agree.

In this spirit, the United States offers, for the consideration of this body, a proposal which we hope will stimulate thoughtful and interesting discussion. I would emphasize that this proposal is submitted in response to a call by the UNEP Secretariat, as a basis for discussion and not as a preconceived solution to all of the complex issues involved. We will be listening carefully to your reactions, we will respect your own ideas, and we hope to learn from the discussion. In a word, the United States delegation is in a flexible, attentive position.

This United States proposal, which is reflected, as the Secretariat requested, in a draft protocol text which has been circulated, consists of three major elements:

- I. A near-term freeze on the growth of emissions, at or near 1986 levels, of those substances which are most damaging to the ozone layer because of their chemistry and their long atmospheric life;
- II. A long-term, scheduled reduction of emissions of these substances, down to the point of eliminating emissions from all but some limited uses for which no substitutes are commercially available -- such reduction could be as much as 95 percent; and
- III. A plan for periodically examining progress made, including provision for modifying the schedule, or removing or adding chemicals, based on new scientific knowledge and economic factors.

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These elements would provide a margin of safety against increasing harm to the ozone layer, while needed scientific research continues. This approach would also aid industrial planning, in order to minimize the costs of reducing reliance on these chemicals, while allowing time for adjustment.

At the same time, we endorse a concerted, coordinated international scientific program of monitoring and analysis, in order to advance our knowledge of stratospheric processes and the effects on human health and ecology of changes in the stratosphere.

Nearly three months ago, in the deer park at Leesburg, Virginia, I expressed my confidence to the UNEP workshop that the participants in this December negotiating session would bring to Geneva the ingenuity, good will, and sense of responsibility that characterized the "spirit of Leesburg."

In discussions I have had with a number of you in the weeks since Leesburg, I believe that spirit continues to prevail.

Let us work together in that spirit this week.

Thank you, Mr. Chairman.

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TESTIMONY OF J. CRAIG POTTER ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION U.S. ENVIRONMENTAL PROTECTION AGENCY BEFORE THE SUBCOMMITTEE ON HAZARDOUS WASTE AND TOXIC SUBSTANCES COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS U.S. SENATE

January 28, 1987

Good morning, Mr. Chairman and members of the Subcommittee. I am pleased to have the opportunity to discuss the current state of our knowledge of the changes In earth's atmosphere, the possible public health and environmental implications of these changes and what we at EPA are doing to address these issues both within the Upited States and in our international negotiations. With me today are Fitzhugh Green, Associate Administrator for international Activities, and Dr. Vaun Newill, Assistant Administrator for Research and Development. Our direction from the Administrator has been to place these issues among the Agency's highest priorities, and together, our offices spearhead EPA's efforts to understand and respond to these concerns.

Poliution that directly affects land, water, and the air we breathe has been the Environmental Protection Agency's traditional focus. However, the environmental significance of changes now occurring in the composition of the earth's atmosphere as a result of human activities presents a new and demanding challenge, and requires that all nations consider the effect of their actions on the atmosphere.

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Obviously, our atmosphere plays a fundamental role in shaping and protecting our planet's environment. Sustaining its viability is of paramount importance to all nations, and true global cooperation is necessary if we are to ensure its protection. For it is possible that a shift in the atmosphere's chemical and physical balance could lead to two separate but related environmental and health concerns.

The first concern involves possible future depletion of the stratospheric ozone layer. Here our concern rests upon a growing body of scientific evidence which indicates that continued use of chlorofluorocarbons (CFCs) and other ozone-reactive substances could result in reducing the effectiveness of the atmosphere's outer protective ozone shield. We are certain that if enough chlorine and other halogens are put in the atmosphere, the ozone layer will begin to be depleted. The current state of science also tells us that the effect of a diminution in the stratospheric ozone layer would be to allow more damaging ultraviolet-B (UV-B) radiation to penetrate to the earth's surface causing increases in the number of skin cancers, suppressing the immune system, and possibly damaging crops and aquatic organisms.

The second related concern which I will just briefly describe relates to the greenhouse effect or global warming. We know that the concentrations of several gases including CFCs are increasing in the atmosphere. Some, like chlorofluorocarbons and sometimes nitrous oxide, contribute to stratospheric ozone depletion; while others, such as methane and carbon dioxide, can actually add to the ozone column or reduce losses. Yet all are greenhouse gases.

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As such they block the escape of heat energy from the earth's surface, thus forming a thermal blanket and contributing to warmer temperatures.

in assessing the problems of stratospheric ozone depletion and the greenhouse effect, we must keep several things in mind. First, as mentioned earlier, both of these issues are examples of environmental problems which demonstrate how clearly we are part of a "global commons." Because CFCs and related ozonereactors quickly disperse throughout the atmosphere, all nations should be concerned about recent changes in the atmosphere. Although the producing nations must shoulder primary responsibility, all nations will need to cooperate in any effective solution to these problems. The U.S. has already begun to meet its responsibility by taking a leadership role through the banning of non-essential aerosol uses. Seven other nations, including Canada and the Scandinavian nations, have also taken this important first step. However, we can and must do more. CFC use has returned to levels approximating those reached in 1974 before concern first surfaced about ozone depletion. Our studies have shown that if anticipated CFC production and use continue as projected, global use of CFCs can be expected to increase, with potentially significant effects on the ozone column.

A second thing to keep in mind in assessing these problems is the need to distinguish between the scientific process of risk assessment and the public policy process of risk management. Risk assessment looks specifically and exclusively at the scientific and technical evidence in order to determine the health and environ-

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mental risks associated with depletion of the ozone layer. Risk assessment will have a particularly important role in evaluating the uncertainties associated with this issue.

Risk management, on the other hand, takes this risk assessment information as its starting point and determines which options are available to address the problem. Any course of action which the United States ultimately chooses must take into consideration the full spectrum of associated economic and social impacts, and must also recognize both the national and international aspects of the issue. Through the risk management process, and pursuant to our mandate under the Clean Air Act, we will make a determination of whether our nation will need to take additional specific actions to control risks related to stratospheric ozone depletion. EPA will make this decision publicly, with ample opportunity for comment by all interested parties.

We feel our risk assessment efforts in this area have led to a greater understanding of the problem of stratospheric ozone depletion and its implications. Decreases in total column ozone would increase the penetration of biologically damaging ultraviolet-B radiation reaching the earth's surface. Exposure to UV-B radiation has been linked by laboratory studies and epidemiology to squamous and basal skin cancers. While uncertainty exists concerning the appropriate action spectrum and measure of exposure, a range of estimates was developed linking possible future ozone depletion with increased incidence of nonmelanoma skin cancers.

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The relationship between cutaneous malignant melanoma and UV-B radiation is a complex one. However, recent studies, some of which are financially supported by the Agency, suggest that UV-B radiation plays an important role in causing melanoma. Studies have also demonstrated that UV-B radiation can suppress the immune response system in animals and possibly humans. While UV-B induced immune suppression has been linked to herpes virus infections and leishmaniasis, its possible impact on other diseases has not been studied.

To support our risk assessment efforts, we have a continuing research program to assess the environmental effects of UV-B. Several hundred varieties of crop plants have been examined and some 140, about two-thirds, exhibit some level of sensitivity to increased UV-B radiation. Some of the crops are important human food sources and our work is not completed in this area.

Our aquatic research, mainky with marine environments, has shown marine organisms, especially plankton and larval forms, to be sensitive to increased UV-B; so sensitive that the species composition may be altered by this radiation. The ramifications of these responses on larger fish which are at the top of the food web are still being examined.

Modest research and modeling efforts are examining the role of increased UV-B radiation on other air pollutants in the troposphere to determine if they may enhance pollutant formation.

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While work still needs to be done to quantify some of our research results, the research evidence clearly shows that increasing levels of UV-B are damaging to humans and many important plant and animal life forms both on land and in the sea.

Given these concerns, we have greatly expanded our efforts to better understand the risks and uncertainties associated with ozone depletion, and have factored our current understanding into our risk management activities.

In January of 1986, we announced our stratospheric ozone protection plan which sets forth a comprehensive agenda for dealing with both domestic and international aspects of this issue. This plan also formed the basis for settlement of a lawsuit filed by the Natural Resources Defense Council (NRDC) seeking to compel us to make a decision on the need for further domestic regulation.

I would first like to briefly describe what we have been doing recently in the international arena. As I mentioned earlier, the global aspects of this problem make it paramount that any true solution involve the other CFC producing and consuming nations. As a result, we have initiated a series of activities aimed at educating and encouraging other governments to support measures to reduce CFC use. Key activities include:

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-- U.S. leadership in negotiating and ratifying the Vienna Convention for the Protection of the Ozone Layer, which provides a framework for international cooperation on research, monitoring, and information exchange, and procedures for developing control protocols as needed; -- U.S. leadership in a two-part workshop organized by the United Nations Environment Programme (UNEP) which focused on key economic issues related to control of CFCs; -- U.S. co-sponsorship with UNEP of an international conference on the effects of both ozone depletion and

climate change.

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This series of meetings--all during the past 12 months-provided the analytical basis for assessing the nature of the problem and the options for reducing global risks. But our efforts have gone well beyond sponsorship of these meetings. For example--

-- Lee Thomas sent letters to his counterparts in over 100 nations advising them that this issue was a very high priority and requesting their active participation in the UNEP negotiations.

-- We have also sent teams of scientists to other key nations as part of our effort to increase understanding of other risks if depletion should occur. Over the next two weeks, a team from NASA, NOAA, EPA, and State will be in Europe, and next week a scientific team will be in Moscow expressly to continue this dialogue.

-- We have participated actively in UNEP negotiations on a protocol to the Ozone Layer Convention.

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Ambassador Negroponte will discuss the status of the international negotiations in greater detail in a few minutes. Let me just say here that the U.S. position -- a near-term freeze followed by a scheduled longer-term reduction of CFC emissions and use, subject to a periodic reassessment of the science -- has had the effect of altering the tone and content of the negotiations. We are now working hard to maintain the momentum and to broaden the level of international awareness and cooperation -- and looking to create and seize new opportunities to engage other nations in discussions of the science of ozone depletion as well as of measures needed to deal effectively with the problem.

On the domestic side of this issue, we are also moving forward rapidly. While we hope that we are able to reach a satisfactory international resolution of this issue in the near-term, we recognize that we face an obligation under the Clean Air Act to assess the need for further domestic regulation. The deadlines set forth in our plan, as mentioned earlier, are consistent with the court order negotiated with NRDC and others, calling for EPA to propose a decision on the need for further domestic regulation and, if warranted, specific regulations, by May 1, and to make a final decision by November 1 of this year.

To meet this deadline we have completed several steps: -- In March and July of last year we held workshops in Washington attended by a wide range of interest groups. These workshops discussed alternative regulatory options and their economic impact;

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-- in late November we submitted to a subcommittee of the Agency's Science Advisory Board -- convened specifically for the purpose of reviewing this issue -- our draft risk assessment document;

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-- within the Agency we are now in the process of preparing a regulatory impact analysis and evaluating options for action, all key steps in our regulatory process.

While I cannot yet say what will be the outcome of this process, I can state that we are committed to making a decision and to meeting the timeframes that be have laid out in our January 1986 plan.

I would also like to note the significant contributions made by industry. Their attempts to find mutual areas of agreement and their general support for some form of international protocol are certainly encouraging developments and are illustrative of the growing consensus on the science and the need for action. I should also add that the interest and involvement of the environmental community and staff from both the Senate and House have substantially aided our efforts. The presence of these groups at this hearing and the fact that representatives of three EPA offices are here today should underscore the growing importance of this issue. Given the complex nature of this issue, widespread cooperation in both the national and international scene is essential to the future progress we all desire.

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In summary, I believe that the activities I've just described are important first steps toward expeditiously and aggressively moving forward in our efforts to obtain an international agreement and to assess our domestic regulatory options.

I, Mr. Green and Dr. Newill would be pleased to attempt to answer any questions you may have.

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Statement of

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Ambassador John D. Negroponte, Assistant Secretary of State for

Oceans and International Environmental and Scientific Affairs to the

Subcommittee on Toxic Substances and Environmental Oversight Senate Committee on Environment and Public Works

January 28, 1987

The United States, along with other nations of the world, is engaged in an historic effort to undertake cooperative measures to prevent potentially serious adverse effects from depletion of stratospheric ozone. The Vienna Convention for the Protection of the Ozone Layer, signed in March 1985 under the auspices of the United Nations Environment Program (UNEP) and ratified by the United States in August 1986, was an important first step. But, as many of the members of this Committee noted in speaking in favor of ratification of the Convention, additional concrete measures are necessary. We are now engaged in negotiations under UNEP auspices on a protocol to the Convention which would provide for regulatory controls on ozone-depleting chemicals.

Laying the Foundation of Common Understanding of the Issue

Between the adoption of the Convention in Vienna in March 1985 and the resumption of negotiations on control measures in December 1986, the international community participated in a unique cooperative effort to improve common understanding of the nature and impacts of the ozone depletion issue. The United States Government played a leading role in that process.

- -- A two-part UNEP workshop, in Rome in May 1986 and in Leesburg, Virginia in September 1986, focused on key economic issues related to the control of ozone-depleting chemicals.
- -- In June 1986, the U.S. co-sponsored with UNEP an international conference with over 300 participants on the effects of both ozone depletion and climate change.
- -- The Coordinating Committee on the Ozone Layer (CCOL), a UNEP body a comprising scientists from many interested nations, assessed current knowledge of the atmospheric science and effects of ozone depletion, and presented their findings to UNEP for consideration in the development of measures to protect the ozone layer. Scientists and policymakers from EPA and NASA played a leading role.

-- 150 scientists, coordinated by Dr. Robert Watson of NASA, prepared a landmark publication on the state of knowledge about atmospheric ozone, under the auspices of NASA, the World Meteorological Organization (WMO), UNEP, the European Communities, NOAA, FAA and the German Federal Ministry for Research and Technology.

At the same time, U.S. government representatives were working bilaterally with various governments to improve understanding of the nature of the problem and the options for reducing risks.

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- -- EPA, NASA and NOAA have worked with scientists in key nations, such as India, Egypt and Australia, to increase understanding of the risks if depletion should occur and to advance scientific assessment and monitoring capabilities.
- -- We have discussed the issue with policymakers in key countries. For example, my Deputy Richard Benedick, who is the lead U.S. negotiator, and a team from EPA went to Brussels and Bonn last November for consultations in preparation for the December negotiations.

As this extensive bilateral and multilateral effort moved forward, we saw that consensus was emerging, both in the United States and in the international community, in a number of important areas:

- -- The ozone layer is an exceedingly valuable resource for the present and future population of the world.
- -- The ozone layer has been, is being, and will continue to be adversely affected by the long-lived chlorine molecules which stem from chlorofluorocarbons.
- -- This ozone depletion, by permitting greater quantities of harmful ultra-violet radiation to reach the earth, will pose significant, even if currently difficult to quantify, risks.
- -- These risks are sufficiently serious as to warrant control actions.
- -- The very nature of the ozone layer requires global cooperation if protective measures are to be effective.

The U.S. Position

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The United States Government believes that the potential risks to the stratospheric ozone layer require early and concerted action by the international community. We seek agreement on the following broad objectives:

- A meaningful near-term first step to reduce significantly the risk of stratospheric ozone depletion and associated environmental and human health impacts;
- A long-term strategy and goals for coping with the problem successfully; and
- A carefully-scheduled plan for achieving the long-term goals, including periodic reassessment and appropriate modification of the strategy and goals in response to new scientific, technical and economic information.

We believe a protocol to achieve these objectives should:

- -- provide a simple approach to facilitate agreement within the current UNEP timetable;
- -- provide as much certainty as possible for industrial planning in order to minimize the costs of adjustment;
- -- provide adequate time for shifting away from ozone-depleting chemicals to avoid social and economic disruption, while at the same time give a strong incentive for the rapid development and employment of safer substitutes and recycling techniques;
- -- address CFC's ll; l2, and ll3, and Halon l2ll and l301, so that all the principal man-made sources of long-lived atmospheric chlorine and bromine are included;
- -- allow flexibility for national implementation by allowing trade-offs among controlled chemicals based on their relative ozone-depleting effects;
- -- take into full consideration scientific uncertainties and promote future improvements in understanding by instituting a requirement for periodic reassessment of the goal and timing of limits;
- -- create incentives to participate in the protocol by regulating relevant trade between parties and non-parties.

In response to UNEP's invitation, the United States prepared a draft text for the operative articles of the protocol which we believe offers a straightforward, cost-effective approach that will provide incentives and clear targets to governments and industry for developing and introducing new technologies for chemical conservation, recycling and substitution. The U.S. draft protocol text is attached.

Geneva, December 1986

We have come a long way since March 1985 in Vienna. In the first round of resumed negotiations in Geneva last month, representatives from all regions agreed that new measures must be taken in the near term to control emissions of ozone depleting chemicals. However, differences over the scope, stringency and time-phasing of control measures remain.

The week-long session included some 120 participants from 25 governments plus international organizations, industry and environmental groups.

The U.S. delegation focused in the first round on seeking support for the basic elements of a protocol which would have both meaningful near and longer term control measures; would cover a broad spectrum of ozone depleting chemicals; and would contain good scientific assessment and technology incentives.

Country Positions

<u>Canada</u> firmly supports a strong agreement. Canada has presented a draft providing for a global emissions limit (a) allocated nationally on the basis of gross national product and population and (b) measured in terms of adjusted production (production plus imports minus exports to parties). However, in the first negotiating session, the Canadians, like the U.S., sought to achieve consensus on the broad outlines of a protocol rather than on specific formulas.

The European Communities (EC) have moved from insistence on a production capacity cap (their current capacity is approximately 30% above current production) to consideration of a cap on production itself. Representatives of the EC Commission distributed at Geneva a "provisional paper" proposing that production of CFC 11 and 12 (and possibly 113 and 114) be frozen at 1986 levels and that the controls be reviewed periodically (i.e., further steps might be decided in the future, but would not be included in the protocol at this time).

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

MAR 25 1987

OFFICE OF AIR AND RADIATION

NOTE TO: Office of the Vice President - Ms. Linda Swacina Agriculture - Dr. Orville Bentley Commerce - Mr. Michael T. Kelley Council of Economic Advisers - Mr. Steve Decanio Council on Environmental Quality - Mr. Alan Hill Defense - Mr. David Parbell Domestic Policy Council - Mr. Ralph Bledsoe Energy - Ms. Mary Walker EPA - Mr. Bill Long Interior - Mr. Martin Smith -. £ Justice - Mr. Thomas Hookano NASA - Mr. Shelby Tilford NOAA - Mr. Joseph Fletcher Office of Policy Development - Mr. Jan Mares Office of Science & Technology Policy -Mr. Richard Johnson OMB - Mr. David Gibbons Treasury - Mr. Stephen Entin USTR - Ms. Marian Barell Nelson E - Mr. Martin Balley EB - Mr. Dennis Lamb L/OES - Ms. Debble Kennedy 5. L/EBC - Mr. Gerald Rosen

FROM: Eileen B. Claussen, Director/OPD Office of Air and Radiation/EPA

SUBJECT: Background Material for Interagency Meeting (3/27/87) on Environmental and Economic Impact of CFC Controls

Attached are some materials that I believe will be useful in discussing the U.S. position at the upcoming Vienna negotiations. I expect to go through the materials on Friday... It would be very helpful if you could review and evaluate the attachment from two points of view: (1) do they, address the right issues and scenarios?; (2) do the conclusions and data reflect similar analyses carried out by your own agencies?.

Attachment

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E.O. 12356: N/A SUBJECT: WORKING GROUP ON PROTOCOL ON CONTROL OF CHLOROFLUOROCARBONS

1. U.S. PERM REP TO UNITED NATIONS ENVIRONMST PROGRAM (UNEP) TODAY (UAN. 23) RECEIVED FOLLOWING MESSAGE SIGNED BY UNEP ASSISTANT EXECUTIVE DIRECTOR GOLUBEV AND DATED JAN 20 WITM A REQUEST TMAT IT BE CABLED TO SECSTATE; QUOTE HONOURED TO INFORM YOU THAT THE SECOND SESSION OF THE AD HOD WORKING GROUP OF LEGAL AND TECHNICAL EXPERTS TO DEVELOP A PROTOCOL ON THE CONTROL OF CHLOROFLUOROCARBONS (VIENNA) WILL TAKE PLACE FROM 23 TO 27 FEBRUARY 1987. SESSION WILL BE OPENED AT 10 AM ON MONDAY, 23 FEBRUARY AT THE VIENNA INTERNATIONAL CENTRE. THE FOLLOWING AGENDA IS PROPOSED. OPENING OF SESSION ELECTION OF OFFICERS AND ADOPTION OF AGENDA BBB REVIEW OF PROGRESS AT THE FIRST VIENNA GROUP SESSION CCC FURTHER CONSIDERATION OF THE FIFTH REVISED DRAFT DDD PROTOCOL ON THE CONTROL OF CHLOROFLUOROCARBONS ADOPTION OF REPORT AND PLANS FOR FUTURE WORK EEE ANY OTHER BUSINESS FFF GGG CLOSURE OF THE MEETING

A REPORT OF THE FIRST SESSION OF THE VIENNA GROUP IS BEING SENT TO YOU UNDER SEPARATE COVER.

PLEASE INFORM ME OF THE NAME (S) OF YOUR REPRESENTATIVE (S) AS SOON AS POSSIBLE. HIGHEST CONSIDERATION. UNQUOTE. (750) CONSTABLE

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Finland, Norway and Sweden endorsed the U.S. approach in general, and tabled an amendment to the U.S. text calling for a first step phase-down of 25 percent rather than a freeze.

While the USSR delegation acknowledged the risk of ozone depletion and the need for control measures, they introduced a text calling for a global production limit for CFC 11 and 12 only, allocated to nations on the basis of population, with less developed countries exempt from controls.

Japan, too, acknowledged the need for controls, but favored a production capacity cap, only on CFC 11 and 12.

Developing country representation at Geneva was sparse. Argentina, Brazil and Egypt participated actively in support of an early agreement.

Looking Ahead

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The United States will continue in the next round of negotiations, February 23-27, to pursue the objectives outlined above. We are consulting actively with a number of nations in the interim, through discussions with environmental, foreign ministry, and trade officials in Washington and abroad, through our Embassies, official visits, and scientific exchanges.

Ambassador Benedick will leave in the next few days for consultations in Europe. Deputy U.S. Trade Representative Michael Smith discussed the issue with Japanese trade officials in Tokyo this week, and I will discuss it with Foreign Ministry and environmental policy officials in Tokyo next week. A team from NASA, NOAA and EPA will visit the Soviet Union February 3-9 to exchange information on the chemistry and dynamics of the atmosphere as it relates to ozone depletion and on the effects of increased ultraviolet radiation. We are meeting this week with Canadian representatives. Yesterday, through the USIA "Worldnet" interactive satellite hookup, Ambassador Benedick and Dr. Watson of NASA discussed the issue with experts, policymakers and journalists in London, Rome, Copenhagen, Paris and Geneva; another such program is planned for next month with several other capitals.

This is a difficult and complex negotiating process. We have made substantial progress, but we have a long way to go to reach an effective agreement with broad participation. Meanwhile, we must be sure that our actions domestically support and do not undercut that international process, since this is clearly a matter which the U.S. cannot resolve alone. We have entered a new era of truly global environmental management, in which we are all made more conscious of the unity and vulnerability of our planet.