Have Copy to VM

330

Dr Bill
Will you attend either one?
No Spirit Vicki should

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

April 3, 1987

MEMORANDUM FOR: VP - Linda Swacina
USDA - Orville Bentley
OPD - Jan Mares
DPC - Ralph Bledsoe/Vicki Masterman
CEA - Steve DeCanio
CEQ - Alan Hill/Coleman Nee
EPA - Craig Potter/Bill Long
State - Richard Benedick
NOAA - Joseph Fletcher/Barbara Moore
Commerce - Michael T. Kelley
USTR - Marian Barell Nelson/Pep Fuller
DOI - Martin Smith
DOI - Becky Norton Dunlop
DOE - Mary Walker/Ted Williams
NASA - Bob Watson
DOJ - Tom Hookano
DOD - David Tarbell
OSTP - Richard T. Johnson
Treasury - Stephen Entin

FROM: Dave Gibbons, Deputy Associate Director for Natural Resources

SUBJECT: Stratospheric Ozone Briefings

You and/or your representatives are cordially invited to attend two briefings being given to OMB by EPA on economic issues and models relating to stratospheric ozone. The next two briefings are:

Monday April 6, 1987, 5:30 P.M., Room 10103, NEOB

Environmental Protection Agency

Topic - Modelling of CFC Emissions

Friday, April 10, 1987, 5:30 P.M., Room 10103, NEOB

Environmental Protection Agency

Topic - Economics of Potential Controls

If you and/or your representatives wish to attend, please phone Darlene Fleming (395-6827) to be cleared into the building. Individuals planning to attend will need to provide their birth date to Darlene to gain access to the New Executive Office Building.

We hope you are able to attend.

OZONE SUBWORKING GROUP

Ralph Bledsoe
Chairman

Richard Benedick
State Department
647-2232 - Shelia
5/10/35

James Craig Potter
EPA
382-7400 - Dorothy
12/23/43

Michael T. Kelley
Commerce
377-0614 - June
8/21/43

J. Roy Spradley, Jr.
377-2977 12/7/46

Becky Norton Dunlop
Interior
343-4863 - Susie
10/2/51

Stephen Galebach
Justice
633-2107 - Carol
9/21/52

~~Marian Nelson~~
USTR
X7211
8/5/53

Irving L. Fuller
3/13/34 X7204
USTR

Dave Gibbons
OMB - X4586 - Denza

Steve Decanio or Thomas Moore
CEA - X5046 - Audrey

Jan Mares
OPD - X2752 - Nancy

Vicki Masterman
DPC

File - Strat. Ozone
330

THE WHITE HOUSE

Office of the Press Secretary
(Santa Barbara, California)

For Immediate Release April 5, 1988

STATEMENT BY THE PRESIDENT

I am pleased to sign the instrument of ratification for the "Montreal Protocol on Substances that Deplete the Ozone Layer." The Protocol marks an important milestone for the future quality of the global environment and for the health and well-being of all peoples of the world.

Unanimous approval of the Protocol by the Senate on March fourteenth demonstrated to the world community this countries willingness to act promptly and decisively in carrying out its commitments to protect the stratospheric ozone layer from the damaging effects of chlorofluorocarbons and halons.

But our action alone is not enough. The Protocol enters into force next January only if at least 11 nations representing two-thirds of worldwide consumption of chlorofluorocarbons and halons ratify the agreement. Our immediate challenge, having come this far, is to promote prompt ratification by every signatory nation.

I believe the Montreal Protocol, negotiated under the auspices of the United Nations Environment Programme, is an extremely important environmental agreement. It provides for internationally coordinated control of ozone-depleting substances in order to protect a vital global resource. It requires countries that are parties to reduce production and consumption of major ozone-depleting chemicals by 50 percent by 1999.

It creates incentives for new technologies -- chemical producers are already working to develop and market safer substitutes -- and establishes an ongoing process for review of new scientific data and of technical and economic developments. A mechanism for adjustment of the Protocol is established to allow for changes based upon the review process. The wisdom of this unique provision is already being realized

Data made available only during the last few weeks demonstrate that our knowledge of ozone depletion is rapidly expanding. For our part, the United States will give the highest priority to analyzing and assessing the latest research findings to assure that the review process moves expeditiously.

The Montreal Protocol is a model of cooperation. It is a product of the the recognition and international consensus that ozone depletion is a global problem, both in terms of its causes and its effects. The Protocol is the result of an extraordinary process of scientific study, negotiations among representatives of the business and environmental communities, and international diplomacy. It is a monumental achievement.

# # #

THE WHITE HOUSE

WASHINGTON

April 7, 1986

NOTE FOR OZONE SUBGROUP MEMBERS

FROM: VICKI MASTERMAN VM

SUBJECT: Draft Ozone Paper

Attached is a partial draft of an ozone issue paper. The options portion is only in summary form as a few of you are providing information to delineate the specific elements of each option and to quantify the pro's and con's of the various options.

We hope this draft will encourage you to provide written or oral comments very quickly. Our plan is to develop a draft that this subgroup will bring to the working group next week. Please call if you have any questions, 456-2749 or 456-6640.

Draft Ozone Paper

ISSUE

What should the Administration's position be regarding the April United Nations negotiations toward an international protocol for control of ozone depleting chemicals?

BACKGROUND

Strong international and domestic concern exists over ozone depletion caused by emissions of chlorofluorocarbons (CFCs) reacting in the upper atmosphere (stratosphere). Ozone is an essential buffer of ultraviolet light; significant depletion could cause skin cancer, suppress the human immune system, retard crop production and damage aquatic and terrestrial ecosystems.

Although stratospheric ozone concentrations have decreased over the past seven years, it is unclear whether any significant change in natural ozone levels has occurred. The only area where scientists have observed significant depletion is Antarctica. There, ozone depletion of approximately 50 percent has been found every spring since 1985. Scientists are not sure of the cause of the Antarctic depletion. Potential causes include chemical emissions, the solar cycle and climate change. Global depletion is expected to occur absent global reduction efforts.

Scientists are unable to predict when depletion will occur or what levels of chemical emissions will trigger significant depletion. Yet the sudden unexplained appearance of the Antarctic ozone hole suggests large global changes could occur before scientists observe them. Further complicating the problem is the fact that substantial CFC emissions will continue for years after a decision to curb emissions. This is because the industrial transition to CFC substitutes and emissions controls will take time, and products containing CFCs (e.g. refrigerators and air conditioners) may continue to emit the ozone depleting gases for years during use. There is also a question as to how soon ozone would recover after significant depletion; CFCs have an atmospheric lifetime of 75 to 100 years.

The Vienna Convention for the Protection of the Ozone Layer, ratified by the Senate in July 1986, established an international framework for scientific cooperation and initiated negotiations toward a protocol for controls on ozone depleting chemicals. The United States has had a leading role in the negotiations toward a control protocol. The next negotiating session is scheduled for April 27-30, 1987. The last negotiating session is tentatively scheduled for July 1987, with the diplomatic signing ceremony tentatively scheduled for September in Canada.

There is domestic as well as international movement toward controls on ozone depleting chemicals. Several Senators have proposed a complete phase-out of ozone depleting agents. And in response to a judicial consent decree, EPA must either propose controls or present the basis for taking no action by May 1987.

Industry recognizes the need for some form of control on ozone depleting agents. The industrial Alliance for Responsible CFC Policy favors reducing the growth of CFC production rather than reducing emissions and strongly disfavors unilateral domestic controls that would disadvantage U.S. competitiveness.

DISCUSSION

Causes of Depletion

Emissions of man-made chemicals are changing the chemical composition of the atmosphere. In particular, atmospheric concentrations of chemicals known to deplete ozone are increasing. These chemicals are: chlorofluorocarbons (CFCs) 11, 12, and 113; halons 1211 and 1301; methyl chloroform; and carbon tetrachloride. Global atmospheric concentrations of CFCs 11 and 12 have been growing in recent years at a rate of five percent per year. Concentrations of CFC 113 have been increasing at a rate of 10 percent per year. Concentrations of halon 1211 have been increasing by 23 percent a year. No trend estimates have been published for halon 1301. Concentrations of methyl chloroform have been increasing by 7 percent a year, and of carbon tetrachloride by 1 percent a year.

Measurements also show atmospheric increases in ozone enhancing agents. These chemicals are carbon dioixide and methane. Concentrations of nitrogen oxides are also increasing; these chemicals deplete ozone in the upper atmosphere (stratosphere) and enhance ozone in the lower atmosphere (troposphere). Even though emissions of ozone enhancing agents offset total atmospheric depletion, the offset is not sufficient to prevent ozone depletion at current emission rates. Moreover, the ozone enhancing chemicals increase ozone concentrations in the lower atmosphere while depletion occurs in the upper atmosphere altering the vertical distribution of ozone. Ozone in the lower atmosphere can be dangerous as it is a toxic gas and it contributes to global warming.

At current use volumes, CFCs 11 and 12 have the most ozone depleting potential, followed by CFC 113. Industrialized countries have relied heavily on CFCs 11 and 12 for use in aerosol propellants, refrigeration, foam-blowing, and solvents. The following is a proportional breakdown of uses:

CFC 11

Use	World	United States
Rigid Foam	39%	51%
Aerosol	31%	5%
Flexible Slabstock	15%	15%
Flexible Molded	4%	5%
Chillers	3%	6%
Unallocated	8%	18%

CFC 12

Use	World	United States
Aerosol	32%	4%
Mobile Air Conditioning	20%	37%
Rigid Foam	12%	11%
Refrigerators	6%	6%
Chillers	1%	1%
Miscellaneous	7%	10%
Unallocated	22%	31%

While use of CFC 113 has not been as great as use of the other CFCs, 113 is increasingly used in solvents for cleaning electronic equipment.

CFC emissions occur in production of the chemicals, in use of the chemicals (operating losses and leakage) and in destruction of products containing CFCs (e.g. foam crushing). Once emitted into the atmosphere, CFCs have unusually long atmospheric lifetimes of 75 to 100 years. Their chemical stability and unusual persistence enables them to reach the stratosphere where they react with ultraviolet radiation to release ozone-depleting chlorine.

Halons 1211 and 1301 are used in fire extinguishers. Current production of these chemicals is relatively low. However, halons contain bromine which has much greater ozone depleting potential than the chlorine in CFCs.

Scientists are not sure of the cause of the Antarctic ozone hole. Potential causes include man-made ozone depleting chemicals, the solar cycle, and climate change.

Depletion Projections

Various scientific models have predicted the future ozone depletion expected to result from varying rates of CFC growth. Projections of future depletion are also dependent upon the relative growth rates of the other ozone depleting and ozone enhancing chemicals.

EPA has estimated global ozone depletion in 2075 for six alternative CFC global use scenarios (assuming constant rates for other ozone altering chemicals). For reference in assessing these EPA projections, it may be useful to note that studies of future CFC demand estimate the median annual growth rate for CFCs 11 and 12 as 2.5 percent. The United Nations Environment Program suggested scenario testers use a range of 0% to 5% annual growth for CFCs 11 and 12 for the 1986-2100 period.

CFC Use	Projected Ozone 2075
Decrease 80% by 2010	3% Increase
Constant (1985-2100)	.3% Increase
1.2% Increase 1985-2050 and no growth 2050-2100	4.5% Depletion
2.5% Increase 1985-2050 and no growth 2050-2100	25% Depletion
3.8% Increase 1985-2050 and no growth 2050-2100	>50% Depletion
5% Increase 1985-2050 and no growth 2050-2100	>50% Depletion

Questions exist regarding the accuracy of the models. Generally, observational data support model predictions of the atmospheric concentrations of chemicals. Yet there is a 20-50 percent discrepancy between observed and predicted ozone in the upper stratosphere even though the accuracy of ozone predicting models is increasing with time. The models also failed to predict the 50 percent seasonal ozone depletion in Antarctic ozone that scientists confirmed in 1985.

Effects of Depletion

Depletion of the total amount of atmospheric ozone would increase the amount of harmful ultraviolet radiation reaching the earth. Although many uncertainties exist as to the precise impacts of the increase in ultraviolet radiation, scientific data and/or case studies indicate it would increase nonmelanoma skin tumors, increase cutaneous malignant melanoma, suppress the human immune system, increase cataracts, reduce crop yield, harm aquatic life, accelerate the degradation of polymers, and contribute to global warming and the attendant sea level rise threatening coastal populations.

Of all of the potential adverse effects of ozone depletion, the best scientific data exists for the likely increases in skin cancer. Several studies suggest that the ultraviolet radiation

naturally absorbed by ozone is the most important solar radiation component in the incidence of common skin cancer (nonmelanoma tumors). The mortality rate from nonmelanoma skin cancer is two percent. Health projections indicate there will be 500,000 new cases of nonmelanoma skin cancer in 1987 with an expected morality of 10,000. Studies show that a one percent increase in the ultraviolet radiation absorbed by ozone results in a 1.8 - 2.5 percent increase in the incidence of nonmelanoma skin tumors. (A one percent depletion in ozone increases the weighted ultraviolet radiation by about two percent.)

Although there is uncertainty about the relationship between solar radiation and the more serious form of skin cancer, cutaneous malignant melanoma, much evidence supports the link between solar radiation and this disease. Health projections indicate there will be 25,000 new cases of cutaneous malignant melanoma in 1987; the mortality rate from this disease is 30 percent.

Numerous variables affect the incidence of either form of skin cancer including duration of exposure, latitudinal location at time of exposure, time of day, time of year, behavior (clothes and sunscreens) and pigmentation of the skin. White people, whose skin contains less protective melanin, have higher incidence of skin cancer than people with more melanin. The higher incidence of skin cancer among white people than among non-white populations suggests the increase in skin cancer incidence from ozone depletion may not be as important globally as in the United States and western Europe.

Unfortunately, very little scientific data exists to assess the likely adverse effects of ozone depletion with the greatest potential global impact -- suppression of the immune system and disruption of aquatic and terrestrial ecosystems. These data are not likely to be available for a long time at current research funding levels. Even if the necessary research were undertaken immediately, meaningful results would not be available for years. Case studies suggest the potential effects of immune system suppression and ecosystem disruption would be disastrous and irreversible. In the studies conducted on plants and animals, ultraviolet radiation weakens the immunological system and reduces the ability to resist disease. Several studies also indicate that the immune response of humans is depressed by ultraviolet radiation. There is, however, no evidence as to the magnitude of the risk. Likewise, limited studies of the effect of ultraviolet radiation on crops and aquatics generally show adverse impacts, but are not sufficient to quantify the overall risk.

Status of International and Domestic Actions

(Status of Int'l & Domestic Actions)

International -- The United States, through the State Department and EPA, has played a leading role in the negotiations toward a Protocol to the Vienna Convention on the Control of Chlorofluorocarbons. The State Department received authority to negotiate a protocol pursuant to inter-agency approval of the November 28, 1986 Circular 175 requesting such authority. The Circular 175 authorized the delegation to negotiate a protocol providing for:

I. A near-term freeze on the combined emissions of the most ozone depleting substances;

II. A long-term scheduled reduction of emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (such reduction could be as much as 95%), subject to III; and

III. Periodic review of the protocol provisions based upon regular assessment of the science. The review could remove or add chemicals, or change the schedule or the emission reduction target.

The next negotiation toward a protocol is scheduled for April 27-30, 1987. As the Circular 175 authorized, the United States has pressed for a near-term freeze on emissions of CFCs and halons and for long-term emissions reductions of up to 95 percent subject to periodic scientific assessment. A proposed reduction of 95 percent has not been well-received in the negotiations. Short of the 95 percent proposal, countries have various preferences. A significant issue is how to deal with developing countries that have not reaped the economic benefits of CFC use and thus have not caused the ozone depletion problem, yet also threaten to contribute to depletion as they industrialize and use CFCs for aerosols, regrigeration, solvents and foam-blowing.

Domestic -- The United States has substantially reduced CFC use in aerosols and is now considering further controls on ozone depleting chemicals. In 1978, the United States unilaterally reduced CFC use as an aersol propellant pursuant to an EPA ban of CFC use in nonessential aerosol spray cans. Prior to 1978, CFC use in aerosols was 56 percent of United States CFC use and 25 percent of world use. Aerosols now represent less than five percent of United States use of CFCs 11 and 12, yet remain the largest single use of CFCs outside of the United States (31 percent).

As a result of a lawsuit by an environmental group against EPA, the agency plans to issue a notice summarizing its findings regarding an ozone protection program by May 1987. The notice will either propose further regulation of ozone depleting chemicals or present the basis for a proposed decision to take no

further action at this time.

Proposals for domestic ozone protection programs are largely dependent upon the outcome of the international negotiations toward a protocol on the control of ozone depleting chemicals. EPA's public announcement of its intent to announce its ozone protection plan findings by May 1987 placed considerable emphasis on United States participation in the international discussions. Indeed, the legislative parties drafting ozone protection bills and the environmental parties threatening continued litigation have been attending the international negotiations toward a protocol and have been basing their domestic actions on the progress of international negotiations. In 1980, representatives of U.S. industry formed the Alliance for Responsible CFC Policy. The Alliance has emphasized that any control action must be global in scope to protect the ozone layer and to prevent disadvantaging U.S. industrial competitiveness.

Two important scientific studies should be completed this calendar year. First, a team of scientists from NASA, NOAA, industry and universities is evaluating the existing data on the amount of the decline in total atmospheric ozone concentrations over the past several years. The team is reanalyzing the data with a view toward addressing the inconsistencies and the uncertainties. The team's findings will be ready in late 1987. Second, a team of scientists from government laboratories and universities is analyzing the results of the 1986 National Ozone Expedition in the Antarctic. This team is assessing the most recent measurements of the Antarctic ozone hole and is analyzing the potential causes.

Additional scientific studies are continuing. For example, NASA, NOAA and the Chemical Manufacturers Association are sponsoring the 1987 Airborne Ozone-Hole Campaign to study Antarctic ozone loss in July through September 1987.

OPTIONS

1. Continue Circular 175 Process

The Administration could let the State Department and EPA continue to negotiate toward a protocol on ozone depleting chemicals pursuant to the Circular 175 process. Under this process, the delegation would coordinate the inter-agency review of the U.S. negotiating positions as the international discussions progress.

(Delineation of elements of options and pro's and con's is still to come.)

2. Advise the U.S. Delegation of Desired Positions

The Administration could select a negotiating position for the delegation to take to the next round of talks. This position would be selected from among a range of negotiating options including:

a. Freeze plus 95% reduction in 10-14 years.

b. Freeze plus 40-70% reduction in 6-10 years.

c. Freeze plus 20-40% reduction in 6-10 years.

d. Freeze only

Within each alternative negotiating position, sub-options exist for the chemicals to be covered by the agreement, for the processes to be covered by the agreement (production, consumption, adjusted production), and for the countries to be covered by the agreement (i.e. equity issues for developing countries, trade issues with non-parties).

Each potential negotiating position would be subject to future scientific assessment.

3. Impose Domestic Controls Unilaterally

EPA could impose controls on U.S. ozone depleting chemicals while the delegation continues to participate in international discussions.

4. Await Scientific Results for International or Domestic Action

The Administration could delay international agreement or domestic action until there is more scientific certainty about the likely levels of ozone depletion and the causes of depletion.

United States Department of State

Bureau of Oceans and International Environmental and Scientific Affairs

Washington, D.C. 20520

April 28, 1987

TO: VP - Linda Swacina
USDA - Norman Strommen
OPD - Jan Mares
DPC - Vicki Masterman DR BLEDSOE - FYI
CEA - Steve DeCanio
CEQ - Coleman Nee
EPA - Bill Long/Steve Anderson
Commerce/NOAA - Dian Gaffen/J.R. Spradley
Commerce/ITA - Michael J. Kelly
USTR - Pep Fuller
Interior - Indur Goklany
Energy - Rick Bradley
NASA - Bob Watson
Justice - Tom Hookano
Defense - David Tarbell
OSTP - Dick Johnson
Treasury - Cathy Jabara
E - Martin Bailey
EB - Alix Sundquist
L/OES - Debbie Kennedy
L/EBC - Gerald Rosen

FROM: OES/ENH - Suzanne Butcher

SUBJECT: CFC Alliance Paper on Ozone Protection Negotiations

Attached is a paper by the Alliance for Responsible CFC Policy on the negotiation of an international agreement to control ozone-depleting chemicals. Please distribute the paper as appropriate within your agency.

Vicki —
who are members of this alliance?
Thx

647-9264

About 500 companies are members — Suzanne will give you a list @ the 4:00 mtg today —
MBR

ALLIANCE FOR RESPONSIBLE CFC POLICY
1901 N. FT. MYER DRIVE, SUITE 1204
ROSSLYN, VIRGINIA 22209
(703) 841-9363

April 21, 1987

Mr. Jan W. Mares
Senior Policy Analyst
Office of Policy Development
472 Old Executive Office Building
Washington, D.C. 20500

Dear Jan:

You have asked for our comments concerning the importance of eight criteria relating to the negotiation of an international agreement on chlorofluorocarbons. The attached document summarizes our views and stresses the importance of obtaining broader coverage of compounds and country participation.

An agreement that is too stringent initially could discourage participation thereby diminishing the effectiveness of the international agreement. Please contact us if you have questions regarding the enclosure.

Sincerely,

Kevin J. Fay

Enclosure

KJF:sct

FACTORS RELATING TO UNEP NEGOTIATIONS ON A CFC PROTOCOL

You have asked for our comments concerning the priority of the eight factors relating to the international negotiations of a protocol. Although some of the listed factors are related or have stages, the following comments reflect our views.

1. Coverage
2. Country Coverage
3. Timing
4. Trade
5. Scientific Review
6. Credit for Prior Reductions
7. Stringency
8. Developing Countries

Coverage: 11, 12, 113, 114, 115, 1301, 1211, Chlorinated Solvents

The Alliance supports the negotiation of an agreement covering all the fully-halogenated compounds (CFCs 11, 12, 113, 114, and 115), and agrees that the Halons (1301 and 1211) should also be covered. The chlorinated solvents fall into the category of CFC -22 as far as their depletion potential is concerned, and therefore, should not be covered at this time. The protocol should, however, provide an expedited mechanism to add or delete additional substances in future years as warranted by scientific and economic assessment.

Because of concerns by Japan and the European Economic Community (EC) it may be difficult to reach agreement on a production freeze on CFC 113 as it is critical to their electronics industries (as is the case in the United States). For purposes of the negotiation, an agreement to cap production capacity of CFC 113 (and the Halons) would be a significant accomplishment. (When the Japanese became concerned after the December negotiating session that -113 might be covered, they immediately announced proposed expansion of their production capacity). A production capacity agreement on 113 and the Halons would be a sufficient short-term step until the first scientific and economic assessment and has precedent in both the EC and Japan as they adopted capacity caps on -11 and -12 in the early part of this decade.

It is not desirable at this time to encourage expansion of production capacity of any of these substances in either developed or developing nations.

Country Coverage

As broad a coverage of countries as possible should be the goal of the negotiations. From a practical standpoint, however, it is most important to obtain the participation of the major CFC producer blocs (U.S., E.C., Canada, CMEA and Japan) and to encourage participation of developing nations who are seeking rapid industrial development or are rapidly growing in international trade (China, Korea, Mexico, etc.)

Initially, the emphasis should be to gain as signatories the current CFC producer nations and to discourage construction of additional production capacity for the fully-halogenated CFCs. Present world production capacity is likely to be sufficient until the first scientific assessment. (An effort should also be made to get countries who have signed the Vienna Convention to expedite their ratification process).

Timing

Timing is related to all of the other issues. Practically speaking, it will take 2-3 years for the protocol to take effect. The first step (an emissions freeze at or near current levels) should occur within a year of the official effective date. (Although the Alliance believes there is room for some moderate growth in the use of these fully-halogenated compounds, we will not oppose a short-term agreement on an emissions freeze so long as it is accompanied by a periodic review.) Additional steps should not occur prior to the first scientific, economic and technological assessment. No affirmative reduction agreement should be agreed to at this time. It may be desirable, however, to agree to a specific timetable for this review.

With regard to a Final Target, it is impossible to suggest a period of years given the current lack of understanding of the availability of CFC substitutes or emissions control technologies or without any better understanding of the scientific necessity of additional controls.

It is more appropriate to agree to a management process that provides for continuing periodic review, assessment, and decionsmaking (e.g., every 3-5 years).

Trade

Given current difficulties with U.S. international trade activities and concomitant enforcement issues, it is important to establish trade rules that are easily enforceable and can give participating nations confidence and assurances of fairness. Simplicity is key. (Adequate safeguards concerning U.S. trade should also be worked out in detail among U.S. industry and government officials.)

Initially, the trade articles should cover only the shipment of bulk chemicals and it should restrict shipments to non-signatories. A monitoring system should be established to locate all production sites, the number is relatively small, and discourage the construction of new production capacity.

If covering bulk chemicals proves adequate, then it should be unnecessary to attempt to restrict trade in products containing CFCs or manufactured with CFCs. As exhibit I shows, we estimate that approximately 2/3 of the U.S exports and imports may use or rely on CFCs in one way or another. Enforcement of trade restrictions on these products would be a potential administrative nightmare, inviting certain retaliatory measures from some countries, damaging the ability of U.S. companies attempting to compete in world markets, and discouraging participation in the overriding environmental protection effort.

At this time, only the coverage and restriction of trade in bulk chemicals offers any assurances of enforceability and compliance by all countries.

Scientific Review

A scientific review and management process is absolutely essential to the effective resolution of this issue from an environmental and economic perspective, particularly in light of the range of scientific views and uncertanties, and the diversity of economic issues and conditions that must be considered.

The Alliance recommends that the protocol establish a date certain for the first scheduled assessment of scientific, economic and technological information. This first assessment should occur no earlier than 1990 and no later than 1992. The first assessment should also be the decision point for the determination of any voluntary targets consistent with scientific necessity and economic and technological feasibility.

Credit for Prior Reductions

It would be very desirable to receive credit for prior reductions, but probably infeasible at least in the first agreement. U.S production is today roughly equivalent to its 1974 peak (if CFC 113 figures are included) and we are the largest per capita user of the compounds in the world. The U.S. dismantled 35% of its CFC 11 and 12 production capacity in the 1970's. It is not likely to be an attractive argument with the developing nations that we should get credit for our earlier unilateral action.

A preferred course would be to reach agreement on a freeze and not agree to any affirmative reduction measures at this time. Political and economic pressures will ultimately reduce the usage of CFCs as aerosol propellants in the EC and Japan over the next ten years.

Finally, the U.S attempting to get credit for its unilateral aerosol ban inevitably leads to a discussion of the "essentiality " of uses. We would prefer that the marketplace make that determination.

The issue could be revisited at the time of the first science assessment and review.

Stringency

The Alliance does not believe that the current use or emissions of CFCs presents an imminent threat to human, health or the environment but does believe that it is responsible to reduce emissions of the fully-halogenated compounds where economically and technologically feasible. It is, therefore, more important to reach an international agreement that has broad coverage of chemicals and participation of developed and developing nations.

It is not possible for the industry to say at this time what is economically or technologically feasible and cost-effective to reduce emissions or to utilize acceptable CFC substitutes. Absent the short-term scientific necessity, it is more prudent to agree to this step, if necessary, in a few years after the effort to maximize chemical coverage and country participation is completed. An agreement that threatens short-term reductions may discourage country participation and encourage developing nations to seek some assured production capability. This would be counterproductive to our overall efforts.

The ultimate goal should be based on better scientific understanding and awareness of the availability of alternative technologies or chemical substitutes. Establishment of an ultimate goal in this initial agreement would not make economic sense in light of the current uncertainties for substitutes, and could discourage broad participation.

Developing Countries

The developing nations are projected to have significant growth in the coming decades, but as a percentage of current CFC utilization we do not consider them to be a significant problem for the next 5-10 years. The goal in the international agreement should be to allow these nations to have the technologies made possible by CFCs without encouraging them to construct their own production capacity.

In order to accomplish this goal, some concessions for developing nations should be allowed with the understanding that new technologies and substitute chemical formulations will be available as soon as possible.

This argues for establishing some allowance for developing nations and is a further argument in support of the adjusted production formula (production + imports - exports) where exports to participating developing nations could be allowed and not counted against a current producer nations emissions/production cap.

It is not desirable that concessions for developing nations be continued indefinitely, however, and the issue question should be revisited at the time of the first assessment and review.

Testimony -
EPA Thomas
NOAA Callio
State Benedick
Interior - ?

Response to Stafford
"Under review" -
Not battle confrontation
OMB counsel & legislative affairs

Uniform
Work committal

EPA approvable
p.s., but
Not uniform,
at this time

EPA leans
toward (p.s)

→ Agencies want EPA to agree to a uniform position

DPC – Ralph Bleasoe (requested by Fran Seidel)

MEMBER COMPANIES, ALLIANCE FOR RESPONSIBLE CFC POLICY

A

Abbott Laboratories
N. Chicago, IL

Abco Refrigeration Supply Corp.
Long Island, NY

ACR/Peerless Pacific
Portland, OR

ACR Supply Company, Inc.
Durham, NC

ACR Supply, Inc.
Miami, FL

A/C Supply, Inc.
Harahan, LA

Acoustical Spray Insulators, Inc.
Allentown, PA

Acto-Kleen Company, Inc.
Pico Rivera, CA

Aetna Supply Company, Inc.
Bronx, NY

A.I.A. Waterproofing & Insula tion, Inc.
N. Miami, FL

Aim Insulation Company, Inc.
Bay City, MI

Air Cold Supply, Inc.
Los Angeles, CA

Air Comfort Corporation
Broadview, IL

Air Conditioning Contractors of America
Washington, DC

Air Conditioning & Refrigera tion Institute
Arlington, VA

Air Conditioning & Refrigera tion Wholesalers
Deerfield Beach, FL

Air Conditioning Suppliers, Inc.
Richmond, VA

AIRCO Refrigeration, Inc.
Montreal, Quebec, CANADA

Airflow Company
Gaithersburg, MD

Airtemp Corporation
Edison, NJ

Airtrol Supply, Inc.
Corpus Christi, TX

Air World
Grand Prairie, TX

Alco Controls
St. Louis, MO

All Air Conditioning Supplies, Inc.
St. Petersburg, FL

Allen Equipment Company
Houston, TX

Allied Chemical
Morristown, NJ

Allied Protective Coating, Inc.
Minneapolis, MN

Allied Supply Company, Inc.
Dayton, OH

Allred's, Inc.
Salt Lake City, UT

Harry Alter Company
Chicago, IL

Amana Refrigeration Co.
Amana, IA

American Air Filter Company, Inc.
Louisville, KY

American Association of Meat Processors
Elizabethtown, PA

American Bakers Association
Washington, DC

American Convenience Products Inc.
Milwaukee, WI

American Frozen Food Institute
McLean, VA

American Meat Institute
Arlington, VA

American Petroleum Institute
Washington, DC

American Society for Hospital Center Personnel
Chicago, IL

Amoco Foam Products Company
Atlanta, GA

Anchor Foam Systems, Inc.
Waukesha, WI

Anco Insulations, Inc.
Baton Rouge, LA

Anderson Bros. Refrigeration Service, Inc.
Rutler, WI

Anscott Chemical Industries, Inc.
Wayne, NJ

Applied Roofing Technology, Inc.
Orlando, FL

ARCO Chemical Company
Philadelphia, PA

ARCO Supply, Inc.
Puerto Rico

Arizona Refrigeration Supplies
Phoenix, AZ

Arjay Equipment Corporation
Winston-Salem, NC

Arrow-Risco, Inc.
Los Angeles, CA

Ashland Chemical Company
Columbus, OH

ASHRAE
New York, NY

Associated Supply Company, Inc.
Sacramento, CA

Association of Home Appliance Manufacturers
Washington, D.C.

Association of Home Applicance Manufacturers
Chicago, IL

Authorized Supply Corporation
Los Angeles, CA

B

Baker Bros., Inc.
Jacksonville, FL

Bally Case & Cooler, Inc.
Bally, PA

Bard Manufacturing Company
Bryan, OH

BASF Wyandotte Corporation
Parisippany, NJ

Basic Industries, Inc.
Baton Rouge, LA

Bells Supply Company, Inc.
Wilmington, DE

Beltway Heating & Air Conditioning
Forestville, MD

B&H Pizza Company, Inc.
Hershey, PA

B&H Urethane Systems, Inc.
Las Vegas, NV

Blue M. Electric Company
Blue Island, IL

Bon Air Service Company, Inc.
Grand Prairie, TX

A.E. Borden Company, Inc.
Woburn, MA

Borg-Warner Corporation
Decatur, IL

Borg Warner - York Division
York, PA

Bramec Corporation
Sioux City, IA

Bristol Compressors
Bristol, VA

W.A. Brown & Son, Inc.
Salisbury, NC

Builders World
Cassopolis, MI

Building Owners and Manufacturers Association International
Washington, DC

Burke Engineering Company
South El Monte, CA

Burton-Dixie Corporation
Blacksburg, SC

Burton Plating Company
Los Angeles, CA

C

California Cooling Supply Company
El Cajon, CA

Capitol Refrigeration Company, Inc.
Albany, NY

Cassady Supply Company, Inc.
Columbus, OH

Celotex Corporation
Tampa, FL

Cetylite Industries, Inc.
Pennsauken, NJ

Chase Supply Company
Alsip, IL

Chem Central Corporation
Chicago, IL

Chemical Manufacturers Association
Washington, DC

Chemical Specialties Manufacturers Association
Washington, DC

Chemtech Roofing & Insulation Systems, Inc.
Mt. Airy, NC

Circle Arrow Urethane Systems, Inc.
San Bernardino, CA

Clean Way Industries, Inc.
Keene, NH

Climate Engineering, Inc.
Denver, CO

Climatrol Sales Co.
Edison, NJ

Clinton Chemical Company
Leonard, MI

Coating Specialists
San Antonio, TX

Commercial Distributing Co.
Salt Lake City, UT

Commercial Refrigerator Manufacturers Association
Washington, DC

Cook Paint and Varnish Co.
Kansas City, MO

Cooperative Food Distributors of America
Washington, DC

Copeland Corporation
Sidney, OH

The Cornelius Company
Anoka, MN

County Insulation Company
New Castle, DE

Creative Urethanes, Inc.
Purcellville, VA

Crescent Manufacturing Company
Seattle, WA

Crest Systems, Inc.
Phoenix, AZ

The Crown Refrigeration Supply Company
Baltimore, MD

The Crump Company
Englewood, CA

Cyclops Corporation
Pittsburgh, PA

D

Dairy & Food Industry Supply Association
Washington, DC

Davidson Rubber Division
Dover, NH

Davidson Supply Company
San Francisco, CA

Day Supply Company
Hartford, CT

DeHart's Foam Insulation, Inc.
Bradenton, FL

Del Monte Corporation
Washington, DC

Dennis Supply Company
Sioux City, IA

Deshler Mechanical Contractors, Inc.
Hendersonville, TN

Discount Insulation & Roofing
Middleville, NY

Distributors Incorporated of Colorado
Denver, CO

Dolco Packaging Corporation
Sherman Oaks, CA

Douglas Barrels, Inc.
Charleston, WV

Dow Chemical Company
Midland, MI

Draper Canning Company
Milton, DE

H.C. Duke & Son, Inc.
East Moline, IL

E.V. Dunbar Company
Atlanta, GA

Duncan Supply Company, Inc.
Indianapolis, IN

Dunham-Bush, Inc.
West Hartford, CT

E.I. duPont de Nemours & Company
Wilmington, DE

E

Eaton Corporation
Athens, AL

EBCO Manufacturing Company
Columbus, Ohio

S. Eisenberg & Company
Bridgeview, IL

The Electromotive Corporation
Dallas, TX

Elliott Company of Indianapolis
Indianapolis, IN

Elliott-Williams Company, Inc.
Indianapolis, IN

Emerson Electric Company
St. Louis, MO

Empire Foam Corporation
Minneapolis, MN

Empire Freezers of Syracuse, Inc.
Syracuse, NY

Engineering and Refrigeration, Inc.
Jersey City, NJ

En-Tech, Inc.
Louisville, KY

Essex (Racon) Inc.
Wichita, KS

F

F.C.I. Sprayfoam Ltd.
Richmond, B.C., CANADA

Falcon Safety Products, Inc.
Mountainside, NJ

Fedders Corporation
Edison, NJ

Fixturcraft, Inc.
Nashville, TN

Flexible Polyurethane Foam Manufacturers Association
Southfield, MI

Flex-O-Lators, Inc.
High Point, NC

Florida Containers, Inc.
Sebring, FL

Foamco Systems International
Louisville, CO

Foam Insulation Contractors
Kansas City, KS

Foamseal, Inc.
Oxford, MI

Foam Systems Company
Riverside, CA

Food Marketing Institute
Washington, DC

Follett Corporation
Easton, PA

Fomo Products, Inc.
Akron, OH

Forma Scientific
Marietta, OH

Forsyth Urefoam
Winston-Salem, NC

Fox Appliance Parts, Inc.
Augusta, GA

Fox Service Company, Inc.
Austin, TX

Free-Flow Packaging Corporation
Redwood City, CA

G

G&O Thermal Supply Company
Chicago, IL

Gabriel Manufacturing Company, Inc.
Stony Point, NY

GAF Corporation
New York

Galileo Electro Optics Corporation
Sturbridge, MA

Ganser, Inc.
Bozeman, MT

J. "Red" Gaskins Company
Lake City, SC

G.B.H. Fabricating & Packaging, Inc.
Swedesboro, NJ

Gebauer Chemical Company
Cleveland, OH

Geldbach Refrigerator Company, Inc.
Sparata, NJ

General Coatings, Inc.
St. Paul, MN

Gene Conreaux & Company, Inc.
Indianapolis, IN

General Electric Company
Louisville, KY

General Fiberglass Supply, Inc.
West Allis, WI

General Foods Corporation
White Plains, NY

General Heating & Cooling
N. Kansas City, MO

General Radio & Electronic Company
Wilkes-Barre, PA

General Refrigeration Supply Company, Inc.
Lafayette, IN

Genessee Refrigeration Supplies, Inc.
Rochester, NY

Gilbert Foam Insulation Company, Inc.
Jersey Shore, PA

The Gilman Corporation
Gilman, CT

Goettl Air Conditioning, Inc.
Phoenix, AZ

B.F. Goodrich Chemical Group
Cleveland, OH

The Goodyear Tire & Rubber Company
Lagrange, IN

The Goodyear Tire & Rubber Company, Luckey Plant
Luckey, OH

W.L. Gore & Associates, Inc.
Newark, DE

Gould, Inc.
Chicago, IL

Great Lakes Systems, Inc.
Jenison, MI

Greenberg Supply Company, Inc.
Wilmington, DE

Grocery Manufacturers of America
Washington, DC

GTE Products Corporation
Woburn, MA

Gulf & Western Manufacturing Company
Danville, IL

Gusmer Corporation
Lakewood, NJ

H

Hackney Brothers Booy Company
Wilson, NC

Halocarbon Products Corporation
Hackensack, NJ

Halsey Supply Company, Inc.
Brooklyn, NY

Halstead & Mitchell
Scottsboro, AL

Hanover Distributing Company, Inc.
Charlotte, NC

John F. Harkins Company, Inc.
Landsdowne, PA

Harris Environmental Systems, Inc.
Andover, MA

Harris-Teeter Supermarkets
Charlotte, NC

Hart & Cooley
Holland, MI

Sid Harvey Industries, Inc.
Garden City, NY

Health Industry Manufacturers Association
Washington, DC

Heating & Cooling Wholesalers, Inc.
Grand Rapids, MI

Heying Foods, Inc.
West Union, IA

Highside Chemicals, Inc.
Gladstone, NJ

Hill Refrigeration
Trenton, NJ

Hinshaw Supply Company
San Francisco, CA

Hobart Corporation
Troy, OH

Honeywell, Inc.
Minneapolis, MN

Hormel, Inc.
Austin, MN

Hosier Refrigeration Supply, Inc.
Des Moines, IA

Howard Refrigeration Company, Inc.
Philadelphia, PA

Hussmann Refrigerator Company, Inc.
Bridgeton, MD

I

ICI Americas, Inc.
Wilmington, DE

Igloo Corporation
Houston, TX

Impro, Inc.
Deer Park, TX

Industrial Coatings, Inc.
Rogers, MN

Industrial Paper Distributors
Long Beach, CA

Insaco Inc.
Quakertown, PA

Insco Distributing
San Antonio, TX

Insoport Industries, Inc.
Williamsport, PA

Insta-Foam Products, Inc.
Joliet, IL

Institute of Heating & Air Conditioning Industries
Los Angeles, CA

Insuldeck Corporation
Bath, PA

International Association of Refrigerated Warehouses
Washington, DC

International Cold Storage Company, Inc.
Andover, KS

International Mobile Air Conditioning Association
Landsdale, PA

ITT Continental Baking Company
Charlottesville, VA

ITT Telecommunications
Corinth, MS

J

Jamison Door Company
Hagerstown, MD

Johnson Controls, Inc.
Oak Brook, IL

George L. Johnston Company
Detroit, MI

Jones Supply, Inc.
Kennewick, WA

Charles D. Jones Company
Denver, CO

Jon Pierce, Inc.
Fort Worth, TX

Jordan Supply Company, Inc.
Buffalo, NY

K

Kaiser Aluminum & Chemical Corporation
Oakland, CA

Kern Thermal Equipment Limited
Rexdale, Ontario,CANADA

Keyes Fibre
Stamford, CT

Keyes, Inc.
Grand Rapids, MI

King Radio Corporation
Olathe, KS

King Shrimp Company, Inc.
Brunswick, GA

King Weyler Equipment Company, Inc.
Fort Wayne, IN

W.B. Knox & Associates, Inc.
Lithonia, GA

Koldaire Supply Company
Fort Worth, TX

Kraco-Dyplast, Inc.
Miami, FL

Kuss Corporation
Findlay, OH

Kysor/Warren-Sherer
Conyers, GA

L

Lamb-Weston, Inc.
Portland, OR

F.H. Langsenkamp Company
Indianapolis, IN

Larkin Coils, Inc.
Atlanta, GA

The Larsen Company
Green Bay, WI

Larson Supply Company, Inc.
Allentown, PA

Lear Siegler, Inc./Transport Dynamics Division
Santa Ana, CA

Lear Siegler, Inc., Mammoth Division
Minneapolis, MN

Lennox Industries, Inc.
Carrollton, TX

Lewis Corporation
Oxford, CT

Liniflow Manufacturing Company
Erie, PA

Lyon Brokerage Company, Inc.
Minneapolis, MN

M

Majestic Weaving Company, Inc.
Cornwall, NY

R.D. Marshall & Company, Inc.
Albany, NY

Martin Insulation, Inc.
Ephrata, PA

Marvco Market Developers
Pompton Lakes, NJ

Master-Bilt Products
New Albany, MS

McCombs Supply Company
Denver, CO

McCoy Electronics Company
Mt. Holly Springs, PA

McGee Industries, Inc.
Aston, PA

McKesson Chemical Company
San Francisco, CA

McQuay Group, McQuay Perfex Inc.
Minneapolis, MN

Mechanical Contractors Association of America
Chevy Chase, MD

Mechanical Maintenance Company
E. Hartford, CT

Mechanical Supply Company
St. Louis, MO

Meier Supply Company, Inc.
Binghamton, NY

Melco Refrigeration & Air Conditioning
Ridgefield, NJ

Metal Building Maintenance Company
Walkerton, IN

Michiana Urethanes, Inc.
Sturgis, MI

Mid-City Supply Company, Inc.
Elkhart, IN

Mid-State Industrial Insulation, Inc.
Oildale, CA

Milk Industry Foundation
Washington, DC

Miller-Stephenson Chemical Company, Inc.
Danbury, CT

Mobay Chemical Corporation
Pittsburgh, PA

Morristown Foam Company
Morristown, TN

Motor Vehicle Manufacturers Association
Washington, DC

Mueller Brass Company
Port Huron, MI

Murray Corporation
Cockeysville, MD

N

Nabisco
East Hanover, NJ

NAHB Research Foundation, Inc.
Rockville, MD

National American Wholesale Grocers Association
New York, NY

National Association of Convenience Stores
Falls Church, VA

National Association of Homebuilders
Washington, DC

National Association of Retail Grocers
Washington, DC

National Commercial Refrigeration Sales Association
Philadelphia, PA

National Fisheries Institute
Washington, DC

National Meat Association
Washington, DC

NI-TEC, Inc.
Niles, IL

Nohle Refrigeration Supplies
Rochester, NY

Norel Paper Corporation
Bogota, NJ

Norfield, Division of Fallek Chemical Company
Danbury, CT

North American Heating & Air Conditioning Wholesalers Association
Columbus, OH

Northern Packaging Products Company
Cleveland, OH

Norton Company
Granville, NY

William F. Nye, Inc.
New Bedford, MA

O

Oeverage-Air
Spartanburg, SC

Olin Corporation
Stamford, CT

Orb Industries, Inc.
Upland, PA

Orchard Hill Farms, Inc.
Red Hook, NY

Ore-Ida Foods, Inc.
Boise, ID

Otisca Industries, Ltd.
Syracuse, NY

Lilly Division, Owens-Illinois
Toledo, OH

P

Paramount Electrical Supply Company, Inc.
New York, NY

Parker Hannifin Corporation
Lyons, NY

Pasky & Company, Inc.
Farmington Hills, MI

Patterson Frozen Foods, Inc.
Patterson, CA

Pennwalt Corporation
Philadelphia, PA

Pensacola Refrigeration Supply, Inc.
Pensacola, FL

Perley-Halladay Associates, Inc.
Malvern, PA

Pet Incorporated
St. Louis, MO

The Pillsbury Company
LeSueur, MN

Pioneer Supply Company
Burlington, IA

Plumb Supply Company
Des Moines, IA

Polycold Systems, Inc.
San Rafael, CA

Precision Valve Corporation
Yonkers, NY

Pride Solvents & Chemical Company, Inc.
West Babylon, NY

Pritchett-Stephen Refrigeration Company
Ft. Worth, TX

Proctor & Associates
Redmond, WA

Q

The Quaker Oats Company
Chicago, IL

R

Rawn Company, Inc.
Spooner, WI

Reeves Refrigeration & Heating Supply, Inc.
Minot, ND

Refrigerants Incorporated
Chicago, IL

Refrigeration & Electric Supply Company
Little Rock, AR

Refrigeration Engineering, Inc.
Grand Rapids, MI

Refrigeration Research, Inc.
Brighton, MI

Refrigeration Sales Company, Inc.
Long Island City, NY

Refrigeration Supplies Corporation
Cleveland, OH

Refrigeration Supply Company
Richmond, VA

Reichhold Chemicals Inc.
White Plains, NY

Remedial Insulation Barriers Company, Inc.
Buffalo, NY

R&H Supply Company
Montgomery, AL

Republic Refrigeration Wholesalers
Davenport, IA

Resco, Inc.
Harrisburg, PA

B.P. Rhinefort Company
Fort Worth, TX

Riker Laboratories, Inc.
Northridge, CA

RIP, Inc.
Fort Worth, TX

Ritchie Engineering Company, Inc.
Minneapolis, MN

Rmax, Inc.
Dallas, TX

R&R Supply Company, Inc.
Orlando, FL

R.L. Hartley Corporation
Indianapolis, IN

Robertshaw Controls Company
Richmond, VA

H.H. Robertson Company
Pittsburgh, PA

Robertson Electric Company
Charlottesville, VA

Robinair Manufacturing Corporation
Montpelier, OH

Roche & Hull, Inc.
Baltimore, MD

Rogers Refrigeration Company, Inc.
Marlow Heights, MD

Rogers Supply Company
Champaign, IL

W.A. Roosevelt Company
La Crosse, WI

Rovanco Corporation
Joliet, IL

S

Sanford, Semchak & Speights, Inc.
Bakersfield, CA

Sawyer Fruit & Vegetable
Bear Lake, MI

Scatena York Company
San Francisco, CA

Schroeder Refrigeration Corporation
Oakland, CA

Sealed Unit Parts Company, Inc.
Allenwood, NJ

Service Parts Company
Melrose Park, IL

Service Supply Company
Phoenix, AZ

Service Supply, Inc.
Meridian, MS

Service Supply of Victoria, Inc.
Victoria, TX

William B. Severn, Inc.
Philadelphia, PA

Sheet Metal & Air Conditioning Contractors National Association
Houston, TX

Sheet Metal & Air Conditioning Contractors National Association
Vienna, VA

Shelter Insulation, Inc.
San Antonio, TX

The Silna Corporation
Moonachie, NJ

The Joseph Simons Company
Hartford, CT

J.R. Simplot Company
Caldwell, ID

The Singer Company
Carteret, NJ

Single Service Institute
Washington, D.C.

SJC Corporation
Elyria, OH

Mrs. Smith's Frozen Food Company
Pottstown, PA

S & S Nonlimited, Inc.
Hopatcong, NJ

Society of the Plastics Industry
New York, NY

South Central Company, Inc.
Columbus, IN

South Texas Urethane, Inc.
Edinburg, TX

Southern Michigan Cold Storage Company
Benton Harbor, MI

Southwest Manufacturing
Aurora, MO

Spray, Inc.
Bolton, MA

Sprayfoam Southwest, Inc.
Tempe, AZ

Spencc. Insulation
New Albany, PA

Sporlan Valve Company
St. Louis, MO

Square D Company, SunDial Plant
Mesquite, TX

Standard Refrigeration Company
Melrose Park, IL

Stayton Canning Company Cooperative
Stayton, OR

Stoelting, Inc.
Kiel, WI

Stokely-Van Camp, Inc.
Indianapolis, IN

Stouffer Foods Corporation
Solon, OH

Sundstrand Heat Transfer, Inc.
Dowagiac, MI

Superior Supply Company
N. Kansas City, MO

Superior Supply Company, Inc.
Wichita, KS

Superior Valve Company
Washington, PA

Supply Distributors Corporation
Medford, MA

Sweetheart Plastics, Inc.
Wilmington, MA

T

Taylor Freezer
Rockton, IL

Taylor Industries, Inc.
Des Moines, IA

Tech Spray, Inc.
Amarillo, TX

Teck-Service, Inc.
Slidell, LA

Tecumseh Products Company
Tecumseh, MI

Tekni-Plex, Inc.
Somerville, NJ

Temple Division of Temple-Eastex, Inc.
Diboll, TX

Tenney Engineering, Inc.
Union, NJ

Termicold Corporation
Portland, OR

Texaco Chemical Company
Bellair, TX

Tesco Distributors, Inc.
Irvington, NJ

Texas Instruments
Dallas, TX

Texas Instruments Inc.
Attleboro, MA

Texas Urethane, Inc.
Austin, TX

Textile Chemical Company, Inc.
Reading, PA

Thermal Control Industries
Ellerbe, NC

Thermal Products, Inc.
Cerritos, CA

Thermal Supply, Inc.
Seattle, WA

Thermo-King Corporation
Bloomington, MN

Tobin Refrigeration Company
Denver, CO

Torin Corporaton
Torrington, CT

The Trane Company
Arlington, VA

The Trane Company
LaCrosse, WI

Treasure Isle, Inc.
Tampa, FL

Truck Trailer Manufacturers' Association
Washington, DC

Twin City Supply Company
Providence, RI

Tyler Refrigeration Corporation
Niles, MI

Tyler Refrigeration Corporation
Norwalk, CA

U

U.C. Industries
Parsippany, NJ

U.C.T., Inc.
Louisville, KY

Ugine Kuhlmann of America, Inc.
Paramus, NJ

Union Carbide Corporation
New York, NY

Universal Applicators, Inc.
Hugo, MN

United Refrigeration, Inc.
Philadelphia, PA

The Upjohn Company
Kalamazoo, MI

Urethane Foam Contractors Association
Dayton, OH

Urethane Chemical Company
Carrollton, TX

U.S. Urethane, Inc.
Bernardsville, NJ

V

Valcour Imprinted Papers, Inc.
Glen Falls, NY

Vanderbilt Export Corporation
Norwalk, CT

Van-Wall Urethane Contractors Inc.
Mansfield, TX

Van Waters & Rogers Division of Univar
San Mateo, CA

Vertecs Corporation
Kirkland, WA

Virginia Chemical, Inc.
Dallas, TX

Vollrath Refrigeration, Inc.
River Falls, WI

Voltek, Inc.
Lawrence, MA

Vulcan Materials Company
Birmingham, AL

W

Warm Springs Enterprises, Inc.
Ketchum, ID

Warwick Operating Corporation
New York, NY

Wayne Dennis Supply Company
Des Moines, IA

Wei T'O Associates, Inc.
Matteson, IL

Westfield Refrigeration & Air Conditioning Company
Westfield, NJ

Westinghouse Electric Corporation
Pittsburgh, PA

Westinghouse Electric Company
Staunton, VA

The Whalen Company
Easton, MD

White Consolidated Industries, Inc.
Cleveland, OH

White & Shaugher, Inc.
Paterson, NJ

The Williamson Company
Cincinnati, OH

William Wurzbach Company, Inc.
Oakland, CA

Wilson Refrigeration & Electric, Inc.
Anderson, SC

F.E. Winstel Company
Cincinnati, OH

Witco Chemical Corporation
New Castle, DE

Woodward Governor Company
Rockford, IL

Ralph Wright Refrigeration
Fort Worth, TX

Y

Young Supply Company
Detroit, MI

Alliance for Responsible CFC Policy
1901 N. Ft. Myer Drive, Suite 1204
Rosslyn, Virginia 22209
703/841-9363

TELEX TO SECRETARY HODEL

April 28, 1987 - 4:25 p.m.

Message for the Secretary from Bill Long, EPA (per his secretary, Debbie Good--382-4870)

Bill Long, EPA, Office of International Activities is attending a meeting in Geneva, Switzerland on Ozone Negotiations and asked his secretary to relay the following message to The Secretary, as well as the following individuals:

Lee Thomas, Administrator, EPA
John Negroponte, State Department
Anthony Calio, NOAA
James Miller, OMB
Jan Mares, The White House

On behalf of Senator Baucus, you are requested to appear before Senate Subcommittees on Hazardous Waste ~~and Toxic~~ Substances and on environmental protection, Wednesday, May 13 at 9:30 a.m. in Room 406, Dirksen, to discuss:

Status of international negotiations on protection of ozone layer;

U.S. position at said negotiations;

The role of your agency in the conduct of said negotiations; and,

Your role in development/assessment of said U.S. position.

Contact staff members Cooper or Shimberg for details. Letter to follow.

CHAIRMAN'S TEXT

Distr.
RESTRICTED

UNEP/WG.172/CRP.8/Rev.1
30 April 1987

Original: ENGLISH

Ad Hoc Working Group of Legal and Technical
Experts for the Preparation of a
Protocol on Chlorofluorocarbons to
the Vienna Convention for the
Protection of the Ozone Layer (Vienna Group)

Third Session
Geneva, 27-30 April 1987

TEXT PREPARED BY A SMALL SUB-WORKING GROUP OF
HEAD OF DELEGATIONS

ARTICLE II: CONTROL MEASURES

1. Each party, under the jurisdiction of which CFC 11, CFC 12, CFC 113, (CFC 114, CFC 115) are produced shall ensure that within (2) years after the entry into force of this Protocol the (combined annual production and imports) (combined adjusted annual production) of these substances do not exceed their 1986 level.

2. Each party, under the jurisdiction of which substances referred to in paragraph 1 are not produced at the time of the entry into force of this Protocol, shall ensure that within (2) years from the entry into force of this Protocol (its combined annual production and imports) (its combined adjusted annual production) do not exceed the levels of imports in 1986.

3. Each party shall ensure, that within (4) years after the entry into force of this Protocol levels of substances referred to in paragraph 1 attained in accordance with paragraphs 1 and 2 will be reduced by 20 per cent.

4. Each party shall ensure that within (6) (a), (8) (b) years after the entry into force of this Protocol, the 1986 levels of substances referred to in paragraphs 1 and 2 will be further reduced (by 30 per cent), (a) (if the majority of the parties so decide, (b) (unless parties by a two-third majority otherwise decide), in the light of assessments referred to in Article III, such decision should be taken not later than (2) (4) years after entry into force.

5. Parties shall decide by (two-third majority) (a majority vote)
   - whether substances should be added to or removed from the reduction schedule
   - whether further reductions of 1986 levels should be undertaken (with the objective of eventual elimination of these substances).

These decisions shall be based on the assessments referred to in Article III.

Note: A second paragraph reading as follows has to be added to Article III. Beginning 1990, and every four years thereafter, the parties shall review the control measures provided for in Article II. At least one year before each of these reviews, the parties shall convene a 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.

THE WHITE HOUSE

WASHINGTON

April 30, 1987

MEMORANDUM FOR NANCY J. RISQUE

FROM: RALPH C. BLEDSOE

SUBJECT: Stratospheric Ozone Policy-Making

I just received a call from Becky Norton Dunlop at Interior regarding a telex they received from Sen. Baucus' office. Baucus is calling for May 13 hearings on stratospheric ozone before the Senate Subcommittee on Hazardous Waste and Toxic Substances. He has invited Secretary Hodel of Interior, Lee Thomas of EPA, Jim Miller of OMB, John Negroponte of State, Tony Calio of NOAA, and Jan Mares of OPD to provide testimony on:

- o the status of international negotiations on protection of the ozone layer,
- o the U.S. position at said negotiations,
- o the role of their agency in the conduct of said negotiations,
- o their role in development/assessment of the U.S. position.

Attached is a draft background paper you might wish to consider sending forward to alert others to this call for testimony.

(As an aside, Becky feels some of our appointees in EPA have led Congress to raise this issue. She thinks they feel that since it has truly become interagency in nature, EPA has lost control, and this is a way for them to get it back.)

Attachment

DRAFT MEMORANDUM FROM NANCY RISQUE

Stratospheric Ozone Issue Development
April 30, 1987

ISSUE: What should be the Administration position on testimony on stratospheric ozone before Sen. Baucus' Subcommittee on Hazardous Waste and Toxic Substances?

BACKGROUND: Sen. Baucus has asked the following people to appear for hearings on stratospheric ozone: Don Hodel of Interior, Lee Thomas of EPA, Jim Miller of OMB, John Negroponte of State, Tony Calio of NOAA, and Jan Mares of OPD. They are to testify on:

- o the status of international negotiations on protection of the ozone layer,
- o the U.S. position for these negotiations,
- o the role of their agency in the conduct of said negotiations,
- o their role in development and assessment of the U.S. position.

The U.S. position was originally developed in November, 1986 by the State Department and EPA. It received interagency approval through a Circular 175 process coordinated by State, and has been used as a negotiating position at international meetings in Geneva (December 1986 and April 1987) and Vienna (February 1987).

On March 2, at a Domestic Policy Council working group meeting, Justice, Interior, Commerce, OMB and OPD recommended that the U.S. position be brought to the Council before final positions are negotiated, and an international protocol are signed. The working group agreed, and Lee Thomas has consented to present the issue to the DPC. The Chairman Pro Tempore, Ed Meese, has concurred that the issue should be considered by the Council.

DISCUSSION: Now that the U.S. position on stratospheric ozone has been put on the Council agenda, it is part of the President's policy development process. Thus, any testimony should be subject to this limitation. Looking ahead, it will be considered again by the Council Working Group next week, May 6, and it is tentatively scheduled for a DPC planning meeting (without the President) on May 20. Depending on the outcome of that meeting, the issue will be presented to the President, in his role as chairman of the Council, later in May or in early June. The President's decision would establish the policy for international and domestic U.S. actions.

RECOMMENDATION: In testifying on this issue, Administration officials should restrict their testimony to process answers, since the policy content is still under consideration by the President through the Council, which he chairs.

TELEX TO SECRETARY HODEL

April 28, 1987 - 4:25 p.m.

Message for the Secretary from Bill Long, EPA (per his secretary, Debbie Good--382-4870)

Bill Long, EPA, Office of International Activities is attending a meeting in Geneva, Switzerland on Ozone Negotiations and asked his secretary to relay the following message to The Secretary, as well as the following individuals:

Lee Thomas, Administrator, EPA
John Negroponte, State Department
Anthony Calio, NOAA
James Miller, OMB
Jan Mares, The White House

On behalf of Senator Baucus, you are requested to appear before Senate Subcommittees on Hazardous Waste and Toxic Substances and on environmental protection, Wednesday, May 13 at 9:30 a.m. in Room 406, Dirksen, to discuss:

Status of international negotiations on protection of ozone layer;

U.S. position at said negotiations;

The role of your agency in the conduct of said negotiations; and,

Your role in development/assessment of said U.S. position.

Contact staff members Cooper or Shimberg for details. Letter to follow.

Draft Ozone Paper

Issue

What should the Administration's position be regarding the April United Nations negotiations toward an international protocol for control of ozone depleting chemicals?

Background.

Strong international and domestic concern exists over stratospheric ozone depletion caused by emissions of man-made chemicals reacting in the upper atmosphere (stratosphere). Ozone is an essential buffer of ultraviolet light; significant depletion could cause skin cancer, suppress the human immune system, retard crop production and damage aquatic and terrestrial ecosystems. Although stratospheric ozone concentrations have decreased over the past seven years, scientists have not observed significant global depletion to date. Global depletion is expected to occur absent global reduction efforts. Significant depletion (approximately 50 percent) has been observed in the Antarctic in the spring of each year since 1985. Antarctic ozone levels have been declining since 1965 with the vertical depth of the ozone hole increasing each year.

The Vienna Convention for the Protection of the Ozone Layer, ratified by the Senate in July 1986, established an international framework for scientific cooperation and initiated negotiations toward a protocol for controls on ozone depleting chemicals. The United States has had a leading role in the negotiations toward a control protocol. The next negotiating session is scheduled for April 27-30, 1987. Mention subsequent meetings & dates also.

There is domestic as well as international movement toward controls on ozone depleting chemicals. Several Senators have proposed a complete phase-out of ozone depleting agents. And in response to a judicial consent decree, EPA must either propose controls or present the basis for taking no action by May 1987.

Industry recognizes the need for some form of control on ozone depleting agents. Yet industry strongly disfavors unilateral domestic controls that would disadvantage U.S. competitiveness.

Ozone Depletion: Causes, Projections and Effects

Causes of Depletion -- Emissions of man-made chemicals are changing the chemical composition of the atmosphere. In

particular, atmospheric concentrations of chemicals known to deplete ozone are increasing. These chemicals are: chlorofluorocarbons (CFCs) 11, 12, and 113; halons 1211 and 1301; methyl chloroform; and carbon tetrachloride. Global atmospheric concentrations of CFCs 11 and 12 have been growing in recent years at a rate of five percent per year. Concentrations of CFC 113 have been increasing at a rate of 10 percent per year. Concentrations of halon 1211 have been increasing by 23 percent a year. No trend estimates have been published for halon 1301. Concentrations of methyl chloroform have been increasing by 7 percent a year, and of carbon tetrachloride by 1 percent a year.

Measurements also show atmospheric increases in ozone enhancing agents. These chemicals are carbon dioixide and methane. Concentrations of nitrogen oxides are also increasing; these chemicals deplete ozone in the upper atmosphere (stratosphere) and enhance ozone in the lower atmosphere (troposphere). Even though emissions of ozone enhancing agents offset total atmospheric depletion, the offset is not sufficient to prevent ozone depletion at current emission rates. Moreover, the ozone enhancing chemicals increase ozone concentrations in the lower atmosphere while depletion occurs in the upper atmosphere altering the vertical distribution of ozone. Ozone in the lower atmosphere can be dangerous as it is a toxic gas and it contributes to global warming.

At current use volumes, CFCs 11 and 12 have the most ozone depleting potential, followed by CFC 113. Industrialized countries have relied heavily on CFCs 11 and 12 for use in aerosol propellants, refrigeration, foam-blowing, and solvents. The following is a proportional breakdown of uses:

CFC 11

Use	World	United States
Rigid Foam	39%	51%
Aerosol	31%	5%
Flexible Slabstock	15%	15%
Flexible Molded	4%	5%
Chillers	3%	6%
Unallocated	8%	18%

CFC 12

Use	World	United States
Aerosol	32%	4%
Mobile Air Conditioning	20%	37%
Rigid Foam	12%	11%
Refrigerators	6%	6%
Chillers	1%	1%
Miscellaneous	7%	10%

Unallocated	22%	31%

While use of CFC 113 has not been as great as use of the other CFCs, 113 is increasingly used in solvents for cleaning electronic equipment.

CFC emissions occur in production of the chemicals, in use of the chemicals (operating losses and leakage) and in destruction of products containing CFCs (e.g. foam crushing). Once emitted into the atmosphere, CFCs have unusually long atmospheric lifetimes of 75 to 100 years. Their chemical stability and unusual persistence enables them to reach the stratosphere where they react with ultraviolet radiation to release ozone-depleting chlorine.

Halons 1211 and 1301 are used in fire extinguishers. Current production of these chemicals is relatively low. However, halons contain bromine which has much greater ozone depleting potential than the chlorine in CFCs.

Scientists are not sure of the cause of the Antarctic ozone hole. Potential causes include man-made ozone depleting chemicals, the solar cycle, and climate change.

Depletion Projections -- Various scientific models have predicted the future ozone depletion expected to result from varying rates of CFC growth. Projections of future depletion are also dependent upon the relative growth rates of the other ozone depleting and ozone enhancing chemicals.

EPA has estimated global ozone depletion in 2075 for six alternative CFC global use scenarios (assuming constant rates for other ozone altering chemicals). For reference in assessing these EPA projections, it may be useful to note that studies of future CFC demand estimate the median annual growth rate for CFCs 11 and 12 as 2.5 percent. The United Nations Environment Program suggested scenario testers use a range of 0% to 5% annual growth for CFCs 11 and 12 for the 1986-2100 period.

CFC Use	Projected Ozone 2075
Decrease 80% by 2010	3% Increase
Constant (1985-2100)	.3% Increase
1.2% Increase 1985-2050 and no growth 2050-2100	4.5% Depletion
2.5% Increase 1985-2050 and no growth 2050-2100	25% Depletion
3.8% Increase 1985-2050 and	

no growth 2050-2100	>50% Depletion
5% Increase 1985-2050 and no growth 2050-2100	>50% Depletion

Questions exist regarding the accuracy of the models. Generally, observational data support model predictions of the atmospheric concentrations of chemicals. Yet there is a 20-50 percent discrepancy between observed and predicted ozone in the upper stratosphere even though the accuracy of ozone predicting models is increasing with time. The models also failed to predict the 50 percent seasonal ozone depletion in Antarctic ozone that scientists confirmed in 1985.

Effects of Depletion -- Depletion of the total amount of atmospheric ozone would increase the amount of harmful ultraviolet radiation reaching the earth. Although many uncertainties exist as to the precise impacts of the increase in ultraviolet radiation, scientific data and/or case studies indicate it would increase nonmelanoma skin tumors, increase cutaneous malignant melanoma, suppress the human immune system, increase cataracts, reduce crop yield, harm aquatic life, accelerate the degradation of polymers, and contribute to global warming and the attendant sea level rise threatening coastal populations.

Of all of the potential adverse effects of ozone depletion, the best scientific data exists for the likely increases in skin cancer. Several studies suggest that the ultraviolet radiation naturally absorbed by ozone is the most important solar radiation component in the incidence of common skin cancer (nonmelanoma tumors). The mortality rate from nonmelanoma skin cancer is two percent. Health projections indicate there will be 500,000 new cases of nonmelanoma skin cancer in 1987 with an expected morality of 10,000. Studies show that a one percent increase in the ultraviolet radiation absorbed by ozone results in a 1.8 - 2.5 percent increase in the incidence of nonmelanoma skin tumors. (A one percent depletion in ozone increases the weighted ultraviolet radiation by about two percent.)

Although there is uncertainty about the relationship between solar radiation and the more serious form of skin cancer, cutaneous malignant melanoma, much evidence supports the link between solar radiation and this disease. Health projections indicate there will be 25,000 new cases of cutaneous malignant melanoma in 1987; the mortality rate from this disease is 30 percent.

Numerous variables affect the incidence of either form of skin cancer including duration of exposure, latitudinal location at time of exposure, time of day, time of year, behavior (clothes and sunscreens) and pigmentation of the skin. White people,

whose skin contains less protective melanin, have higher incidence of skin cancer than people with more melanin. The higher incidence of skin cancer among white people than among non-white populations suggests the increase in skin cancer incidence from ozone depletion may not be as important globally as in the United States and western Europe.

Unfortunately, very little scientific data exists to assess the likely adverse effects of ozone depletion with the greatest potential global impact -- suppression of the immune system and disruption of aquatic and terrestrial ecosystems. These data are not likely to be available for a long time at current research funding levels. Even if the necessary research were undertaken immediately, meaningful results would not be available for years. Case studies suggest the potential effects of immune system suppression and ecosystem disruption would be disastrous and irreversible. In the studies conducted on plants and animals, ultraviolet radiation weakens the immunological system and reduces the ability to resist disease. Several studies also indicate that the immune response of humans is depressed by ultraviolet radiation. There is, however, no evidence as to the magnitude of the risk. Likewise, limited studies of the effect of ultraviolet radiation on crops and aquatics generally show adverse impacts, but are not sufficient to quantify the overall risk.

Status of International and Domestic Actions

International -- The United States, through the State Department and EPA, has played a leading role in the negotiations toward a Protocol to the Vienna Convention on the Control of Chlorofluorocarbons. The State Department received authority to negotiate a protocol pursuant to inter-agency approval of the November 28, 1986 Circular 175 requesting such authority. The Circular 175 authorized the delegation to negotiate a protocol providing for:

I. A near-term freeze on the combined emissions of the most ozone depleting substances;

II. A long-term scheduled reduction of emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (such reduction could be as much as 95%), subject to III; and

III. Periodic review of the protocol provisions based upon regular assessment of the science. The review could remove or add chemicals, or change the schedule or the emission reduction target.

The next negotiation toward a protocol is scheduled for April 27-30, 1987. As the Circular 175 authorized, the United States has pressed for a near-term freeze on emissions of CFCs and halons and for long-term emissions reductions of up to 95 percent subject to periodic scientific assessment. A proposed reduction of 95 percent has not been well-received in the negotiations. Short of the 95 percent proposal, countries have various preferences. A significant issue is how to deal with developing countries that have not reaped the economic benefits of CFC use and thus have not caused the ozone depletion problem, yet also threaten to contribute to depletion as they industrialize and use CFCs for aerosols, regrigeration, solvents and foam-blowing.

Domestic: The United States has substantially reduced CFC use in aerosols and is now considering further controls on ozone depleting chemicals. In 1978, the United States unilaterally reduced CFC use as an aersol propellant pursuant to an EPA ban of CFC use in nonessential aerosol spray cans. Prior to 1978, CFC use in aerosols was 56 percent of United States CFC use and 25 percent of world use. Aerosols now represent less than five percent of United States use of CFCs 11 and 12, yet remain the largest single use of CFCs outside of the United States (31 percent).

As a result of a lawsuit by an environmental group against EPA, the agency plans to issue a notice summarizing its findings regarding an ozone protection program by May 1987. The notice will either propose further regulation of ozone depleting chemicals or present the basis for a proposed decision to take no further action at this time.

Proposals for domestic ozone protection programs are largely dependent upon the outcome of the international negotiations toward a protocol on the control of ozone depleting chemicals. EPA's public announcement of its intent to announce its ozone protection plan findings by May 1987 placed considerable emphasis on United States participation in the international discussions. Indeed, the legislative parties drafting ozone protection bills and the environmental parties threatening continued litigation have been attending the international negotiations toward a protocol and have been basing their domestic actions on the progress of international negotiations. In 1980, representatives of U.S. industry formed the Alliance for Responsible CFC Policy. The Alliance has emphasized that any control action must be global in scope to protect the ozone layer and to prevent disadvantaging U.S. industrial competitiveness.

Two important scientific studies should be completed this calendar year. First, a team of scientists from NASA, NOAA, industry and universities is evaluating the existing data on the amount of the decline in total atmospheric ozone concentrations over the past several years. The team is reanalyzing the data

with a view toward addressing the inconsistencies and the uncertainties. The team's findings will be ready in late 1987. Second, a team of scientists from government laboratories and universities is analyzing the results of the 1986 National Ozone Expedition in the Antarctic. This team is assessing the most recent measurements of the Antarctic ozone hole and is analyzing the potential causes.

Additional scientific studies are continuing. For example, NASA, NOAA and the Chemical Manufacturers Association are sponsoring the 1987 Airborne Ozone-Hole Campaign to study Antarctic ozone loss in July through September 1987.

OPTIONS

1. Continue Circular 175 Process

The Administration could let the State Department and EPA continue to negotiate toward a protocol on ozone depleting chemicals pursuant to the Circular 175 process. Under this process, the delegation would coordinate the inter-agency review of the U.S. negotiating positions as the international discussions progress.

2. Advise the U.S. Delegation of Desired Positions

The Administration could select a negotiating position for the delegation to take to the next round of talks. This position would be selected from among a range of negotiating options including:

a. Freeze plus 95% reduction in 10-14 years.

b. Freeze plus 40-70% reduction in 6-10 years.

c. Freeze plus 20-40% reduction in 6-10 years.

d. Freeze only

Within each alternative negotiating position, sub-options exist for the chemicals to be covered by the agreement, for the processes to be covered by the agreement (production, consumption, adjusted production), and for the countries to be covered by the agreement (i.e. equity issues for developing countries, and trade issues with non-parties).

Each potential negotiating position would be subject to future scientific assessment.

3. Impose Domestic Controls Unilaterally

EPA could impose controls on U.S. ozone depleting chemicals while the delegation continues to participate in international discussions.

4. Await Scientific Results for International or Domestic Action

The Administration could delay international agreement or domestic action until there is more scientific certainty about the likely levels of ozone depletion and the causes of depletion.

Pros & Cons for each

Bledsoe

A Proposal For A Revised CFC Negotiation Posture For the U.S.

Background. In 1976 the U.S. unilaterally initiated a ban on the use of CFC as propellants in aerosol containers. This action was based on preliminary scientific information that CFCs could have an adverse environmental effect. To date only the Nordic countries and Canada have followed suit. (West Germany, we are told, is planning such a ban.) Our actions have had the following effect between 1976 and 1985 according to industry data:

- o U.S. use of CFCs as aerosols declined 92% (from 412 to 32 million pounds).
- o Total U.S. use of CFCs declined by 13% (from 750 to 650 million pounds) mainly because non-aerosol use increased by 83% (from 338 to 618 million pounds).

EPA feels total use has increased.

- o In the Rest-Of-The-World (ROW), use of CFC aerosols declined by 31% (from 632 to 438 million pounds).
- o Total ROW use of CFCs increased by 9% (from 1150 to 1250 million pounds) because of a 57% increase in non-aerosol use (from 518 to 812 million pounds).
- o Aerosols often use CFC-11 and 12 which are environmentally the worst actors.
- o Currently 25% of world CFC use is for aerosols. In ROW the corresponding figure is 35%.
- o The rate of growth for non-aerosol CFC usage was 6.93% for the U.S., 5.12% for ROW, and 5.87% for the entire world.

* The following information excludes consumption in the eastern bloc nations.

Happens that a freeze would result in a more-or-less stable overall ozone situation. (See Exhibit C.) However, a freeze at current levels of CFC consumption would have the largest negative economic impact on the U.S. and others who have already eliminated aerosol use. The ROW would be able to preserve more beneficial uses while eliminating aerosols. In fact, we estimate that the ROW could absorb reductions up to 25 or 30% phased in over 5-10 years by merely shifting out of aerosol usage of CFCs.

Environmentalists will not be satisfied with a freeze because while total ozone would remain constant, the ozone profile would be redistributed with more ozone near the ground and less in the stratosphere. They believe an 85% reduction is the minimally acceptable position.

Finally, CFCs add to potential global warming.

Proposal. To ensure a level playing field, the U.S. should seek as a first step, a worldwide reduction equivalent to a 95% reduction, from 1976 levels, on aerosol CFC usage. This would allow the immediate establishment of a new "baseline" quota for each nation based on, say, its 1985 consumption level minus 95% of CFC aerosol use in 1976. This would:

- Effectively reduce worldwide CFC usage by about 22% "immediately". Most of this would be in CFC 11 and 12, the most environmentally damaging.

- Establish a baseline which would not economically penalize the U.S. and other countries which have banned CFC for aerosols for their early, unilateral action--an action which all EEC nations have benefited from environmentally but were unwilling to undertake.

- It would allow each nation to reduce uses in the most economically-efficient fashion.

To cushion any adverse social and economic impacts in the short run, each developed nation could be given a small (x%) growth allowance until 1997, i.e., for ten years.

It is assumed that x = 2%, i.e., the baseline quota is allowed to increase by 2% each year.

Tables 2 and 3 provide approximate future CFC consumption figures under this scheme. This scheme would:

- Provide greater reductions in CFCs than the currently proposed freeze until 1997. Cumulative consumption would be less with this proposal than under a freeze until past 2005--if this scheme were extended till at least that time.

- Compared with a freeze-plus-20% reduction, the proposed reduction scheme is environmentally better for the first few years and worse after that. See Table 3 for a sample calculation with a hypothetical schedule which assumes that: (a) the freeze would be at 1985 levels and become effective in 1988, and (b) the additional 20% reduction becomes effective in 1990. That table shows that using this schedule, "crossover" would occur around 1993. Obviously one can vary the crossover point by varying either the rate of

allowed growth applied to an adjusted base or the schedule.

- Drastically reduce growth rates for nonaerosol uses from a 95% increase over 10 years to 22% for the U.S., and a possible 65% to 22% for the ROW. These are based on assuming that nonaerosol uses would grow at the same level as the 1976-85 average.

- It would buy time to gain additional information on the phenomenon and to work on environmentally, and otherwise, safe substitutes. It is not expected that ozone-depletion over the short run should be drastically affected by this approach. See Exhibit C provided by EPA/NASA during the briefings. An examination of this figure shows that under this proposal there would be virtually no change in stratospheric ozone in the early years. In fact, the ozone-depletion curve under this proposal would be above line A until 2006--at which point it will intersect that line.

Finally, it is recommended that domestic agencies reallocate budgets and priorities to make this issue, both prevention and mitigation, a top priority. For example:

- NIH/NCI research on skin cancers.

- NIH research on UV effects on the immune system and other, non-cancer health effects.

- DOI, USDA research to address possible effects of UV radiation on aquatic and plant species.

The ban on aerosols is a first step. If the science continues to suggest the potential for serious life-threatening consequences, we would urge significant reduction from the 1985 adjusted base.

Further Discussion

Those countries which have not accepted the aerosol ban will probably be unhappy with this proposal. They would argue that there are several CFC uses especially in the U.S. which are just as frivolous (e.g., auto air conditioners and fast-food packaging), and that the U.S. per capita and per GNP consumption remains higher than in the rest of the world. To counter these arguments we should note that:

- The U.S. took the first step in eliminating non-essential aerosol use.

- U.S. needs are greater than Europe's because the U.S. has, a larger proportion of population living in warmer, more humid climates, and that the distances between cities makes air-conditioned automobiles more beneficial. It may make sense to readjust quotas partly on the basis population-weighted climatic conditions.

- The "non-aerosol-ban" nations have had a free-ride since 1978. It seems appropriate for the "non-aerosol-ban" nations to shoulder their fair share of the future burden. In fact, even this would not compensate the aerosol-ban nations for the cost of past reductions, and research that enabled the phase out of CFC aerosol usage.

- By establishing a historical 1985 base, the U.S. would probably have to reduce actual consumption since its initial baseline would be lower than current consumption. Moreover, it will involve a substantial slow down in non-aerosol CFC growth in the U.S.

Under the above scheme, developing nations could be given a higher allowable growth rate than developed nations. For the 10-year period (i.e., until 1997) such a differential growth rate is not expected to increase overall CFC consumption drastically because of the present relatively low level of consumption in the developing world. Finally, any reduction in CFCs will help reduce concerns regarding fossil fuel combustion's effect on global warming (via CO2 emissions).

Caveats. The numbers presented here are to be used with caution.

- They assume consumption = emissions.

- They also assume all CFCs have an equal ozone-depletion potential.

- They ignore consumption/emissions in the eastern-bloc nations (EBN).

- The numbers were generated by using the pie charts on Exhibit A and B.

Table 1: Total CFC Use (Excluding EBNs), 1976-85, in Millions of Pounds

	U.S.		ROW		Total	
	1976	1985	1976	1985	1976	1985
Non-Aerosol	338	618	518	812	856	1430
Aerosol	412	21	632	438	1044	459
Subtotal	750	639	1150	1250	1900	1889

Table 2: Total CFC Use (Excluding EBNs) Under Proposal, in Millions of Pounds

	U.S.			ROW			Total		
	1985 Actual	1985 Base	1995	1985 Actual	1985 Base	1995	1985 Actual	1985 Base	1995
Non-Aerosol	618	618		812	812		1430	1430	
Aerosol	32	21		438	32		470	53	
Subtotal	650	639	779	1250	844	1029	1900	1483	1808

Table 3: Comparison of Non-EBN Consumption Under Various Reduction Schemes, 1988-1997, in Millions of Pounds

Year	Freeze[1]	@ 2% Increase[2]	Freeze-plus-20% reduction[3]	A[4]	B[5]
1988	1900	1573	1900	-327	-327
1989	1900	1605	1900	-295	-622
1990	1900	1637	1520	+117	-505
1991	1900	1670	1520	+150	-355
1992	1900	1703	1520	+183	-172
1993	1900	1738	1520	+219	+ 47
1994	1900	1772	1520	+252	+299
1995	1900	1807	1520	+287	+586
1996	1900	1844	1520	+324	+910
1997	1900	1881	1520	+361	+1271
Total	19,000	17,230	15,960		

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1 This assumes that the "immediate" freeze will be at 1985 levels and go into effect in 1988.

2 This column is for the proposal using a 2% in annual adjustment to the base line. This assumes that first year of compliance with proposal will be 1988.

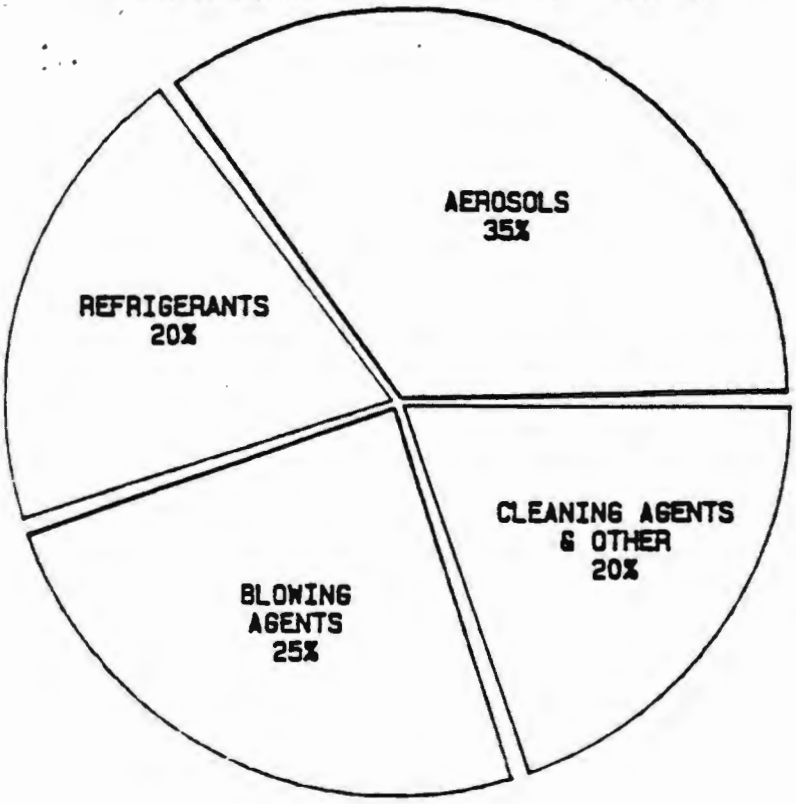
3 This assumes that 20% reduction will go into effect in 1990.

4 A = Difference between the previous two columns.

5 B = Cumulative difference between proposal and "freeze-plus-20% reduction". Negative sign indicates that proposal (at 2% increase) produces fewer cumulative emissions. This column shows that "crossover" occurs in 1992/3.

FC-11/12/113/114/115 VOLUME BY INDUSTRY

1985 WORLDWIDE (EX. U.S.): 1250 MM LBS



1976 WORLDWIDE (EX. U.S.): 1150 MM LBS

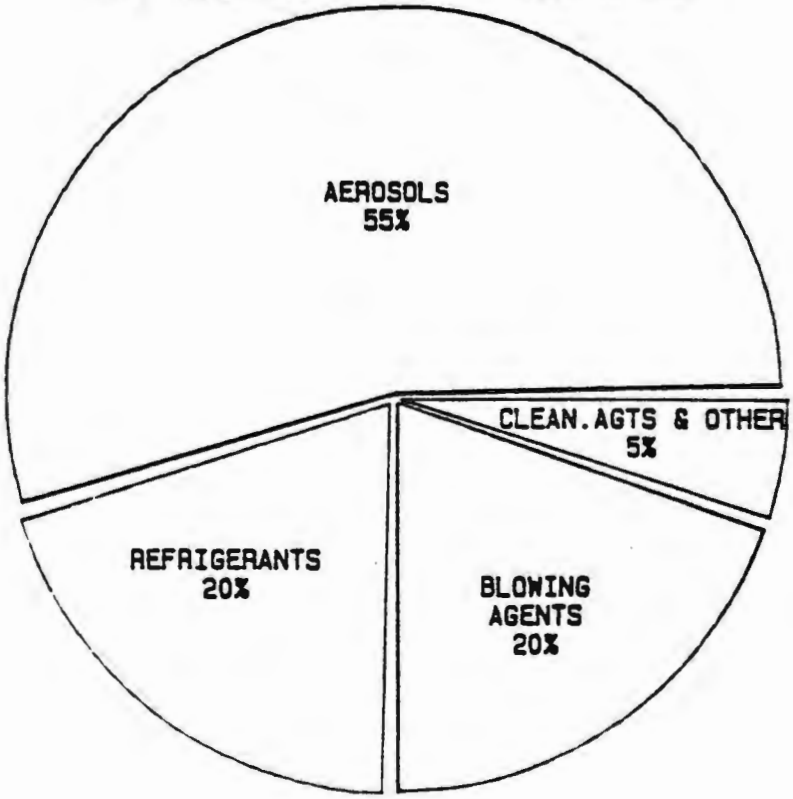
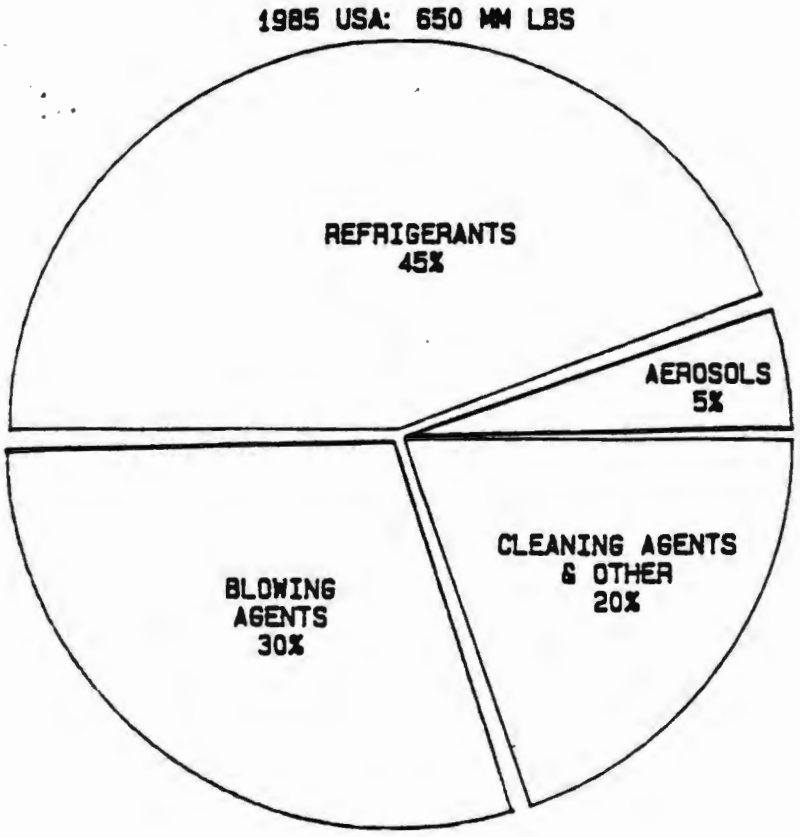
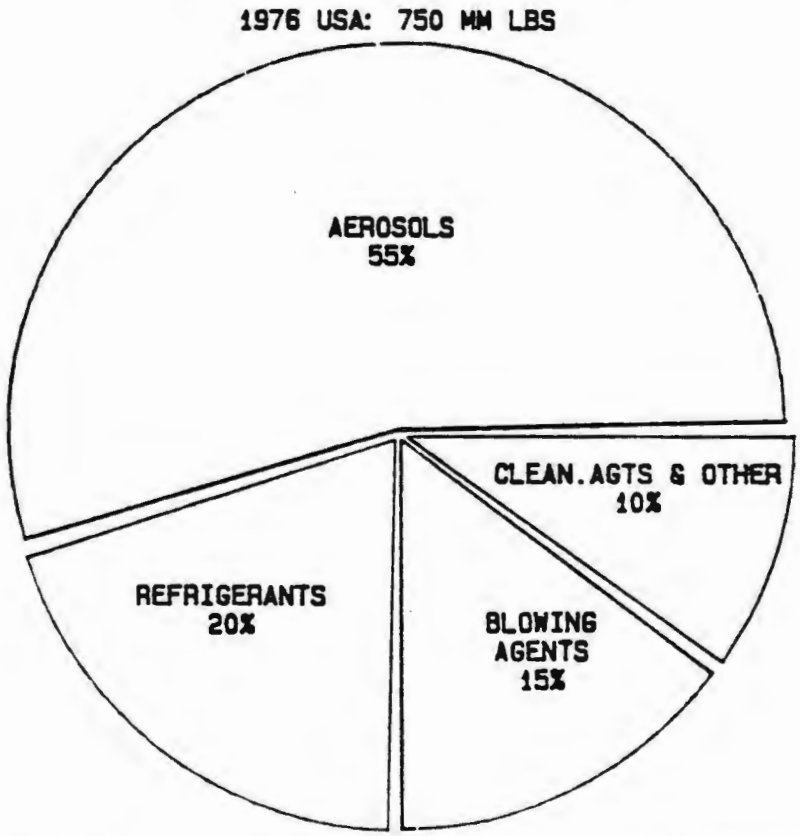


EXHIBIT B

FC-11/12/113/114/115 VOLUME BY INDUSTRY





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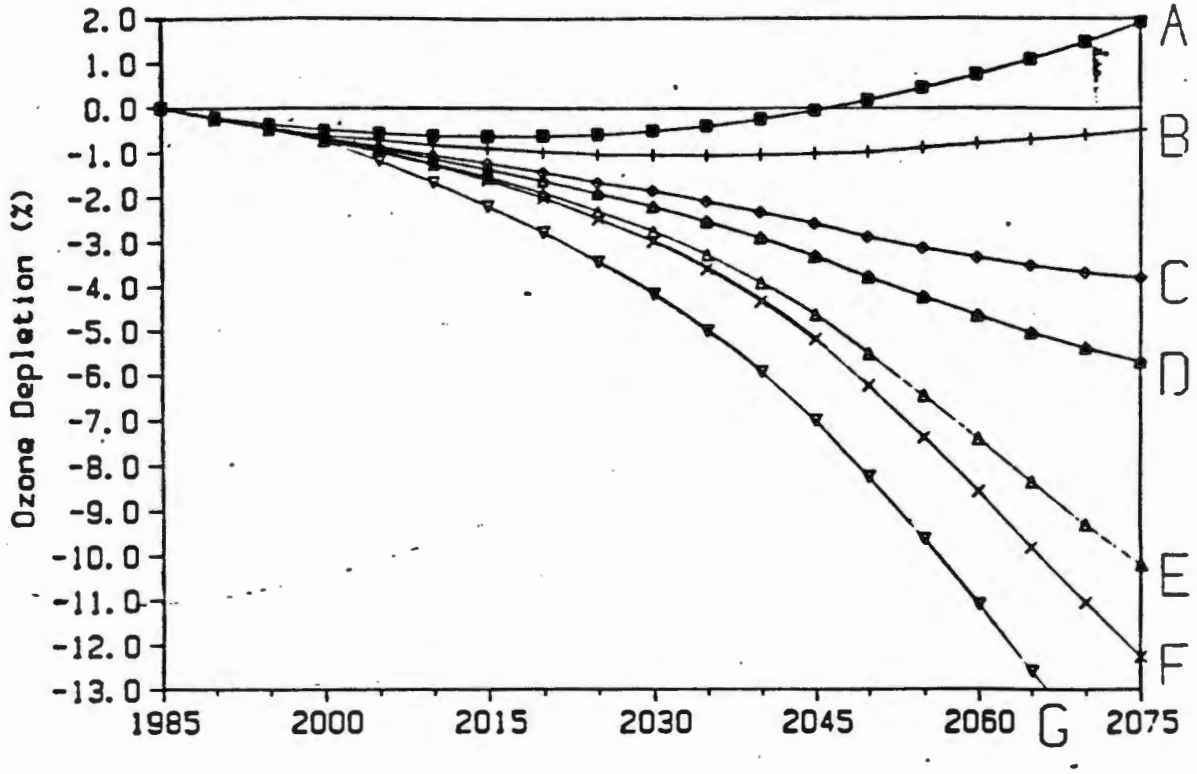

A = Freeze of all Cl-containing compounds at 1986 levels.
- 100% compliance globally
- CH_4 @ 1%/yr
- N_2O @ 0.25%/yr
- CO_2 @ 0.8%/yr (per Wuebbles et al., 1984)

} This is similar to WMO (1986), and looks ≈ same.

B = Freeze all Cl-containing compounds at 1986 levels
- 100% Compliance
- CH_4 @ 0.019 ppm/yr
- N_2O @ 0.20%/yr
- CO_2 @ 0.7%/yr (per NAS 50th percentile)

C = Same as B, except CH_3CCl_3, Halon 1211 and Halon 1301 allowed to grow @ 2.5%/yr from 1985 to 2050 (constant thereafter)

D = Same as C, except CFC-113 allowed to grow @ 2.8%/yr from 1985 to 2050 ; (constant thereafter)

E = Same as D, except developing nations allowed to grow to current global average use per capita

F = Same as E, except 80% compliance globally. (Note: baseline rate for CFC-11 and CFC-12 is 2.5%/yr 1985 to 2050, constant thereafter).

G = No controls at 2.5%/yr from 1985 to 2050; constant thereafter

U.S. NEGOTIATING STRATEGY
UNEP OZONE PROTOCOL NEGOTIATIONS
THIRD SESSION: APRIL 27 - 30, GENEVA

PROTOCOL ELEMENT	U.S. POSITION
1. Chemical coverage ① all shld be incl'd in one form or another ② can explore flexible approaches for ea compound	A. Include CFC 11, 12, 113, 114, 115, and Halons 1211 and 1301 B. Flexible treatment of 114, 115, and Halons on European produc.
2. Calculation of Emissions Be careful to preserve alt def's of D (i.e. w/t permanent encapsulation)	A. Support "Adjusted Production" formula (P+I-E-D) B. Consider other viable "hybrid" formulas C. Introduce Mkt approach
3. Stringency First Step: freeze ① yr. 20% ② yrs	A. Freeze emissions at 1986 levels
Interim Step: (EC proposes 20% reduction via automatic trigger)	A. 50% reduction via automatic trigger B. 20 - 40% reduction via automatic trigger
Final Phase: leave open for future (avoid detailed discussion; focus on interim step)	A. per Circular 175
4. Timing	
Freeze: (EC proposes 2 years after entry into force)	A. 1 year after entry into force
Interim step: (EC proposes 6 years after entry into force)	A. 4 - 10 years after entry into force (depending on stringency)
Final phase:	A. 10 - 15 years after entry into force (per Feb. 1987 USG position paper)

PROTOCOL ELEMENTS	U.S. POSITION
5. Country Coverage	A. Seek widest possible participation — include all major producing countries (seek entry into force provision which assures this) — encourage LDCs to join (see #6 and 7 below)
6. Trade Aspects (strong, workable non-Party import restrictions supported by all delegations)	A. Support draft Trade article — Ban bulk imports from non-parties — Ban/restrict non-party imports of products containing — Determine feasibility of restricting non-party imports of products made wit (resist attempts to amend this to a restriction) — Seek drafting improvements recommended by inter-agency trade group
7. Developing Countries	A. Develop provisions to ensure broad LDC participation with minimal loss of environmental protection — Possible exemption from control measures — Resist attempts for mandatory technology transfer provisions
8. Scientific Assessment (all delegations support as integral part of protocol)	A. Develop assessment and review article (based on U.S. text) — regular review: every 4 years (EC supports — emergency review: as determined by Parties

DRAFT, 4/17 Comments to V. Masterman
456-2749
-6640

POINTS OF AGREEMENT

The Stratospheric Ozone Problem

1. A USG goal is to prevent harmful depletion of stratospheric ozone.

A. Atmospheric concentrations of certain ozone-depleting chlorofluorocarbons and halons are increasing.

B. If the stratospheric ozone layer is significantly depleted, significant adverse health, crop, and environmental effects are likely.

C. Despite the remaining uncertainties, the scientific findings to date have prompted strong domestic and international pressure for action to reduce emissions of ozone-depleting chemicals.

2. The USG prefers international action over unilateral domestic action for economic and environmental reasons.

A. Insuring the progress of the international negotiations toward an agreement is important.

B. The international agreement must include as many countries as possible.

C. The international agreement should cover the five main ozone-depleting chemicals (CFC 11, CFC 12, CFC 113, Halon 1201, Halon 1311).

D. Parties to the agreement should share equitably in the costs.

(1) The Departments of Interior and Commerce recommend that an international agreement give the USG due credit for past unilateral reduction of aerosol emissions.

(2) EPA and the State Department question whether the USG is due credit for such past unilateral reduction and note that past attempts to obtain such credit have failed.

E. The international agreement must contain an enforceable trade provision to encourage compliance by parties and to encourage non-parties to join.

F. The international agreement must provide for periodic scientific assessments to verify or change the scope of the agreement as to reduction targets, reduction schedules, chemical coverage, compliance and trade.

Actions to Date

1. The USG has participated in two international negotiating sessions toward a Protocol to the Vienna Convention on the control of ozone-depleting chemicals. The next negotiation is scheduled for April 27-30.

A. The State Department received authority to negotiate a protocol pursuant to interagency approval of the Circular 175 authorizing the USG delegation to negotiate a protocol for:

"I. A near-term freeze on the combined emissions of the most ozone-depleting substances;

II. A long-term scheduled reduction emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (such reduction could be as much as 95 %), subject to III; and

III. Periodic review of the protocol provisions based upon regular assessment of the science. The review could remove or add chemicals, or change the schedule or the emission reduction target."

B. The Executive Branch is currently considering options within the terms of the Circular 175 including the definition of a freeze, the delineation of near-term and long-term and the specification of a percentage reduction.

2. The USG delegation is currently developing the USG position for the April 27-30 negotiations.

A. The Interior Department requested the next negotiating session be delayed pending DPC review. The State Department strongly objected to delaying the the scheduled meeting.

B. The USG negotiating position in the past two meetings has been for a near-term freeze and a 95 percent reduction in an unspecified time period.

C. The USG delegation believes the future progress of the negotiations depends upon USG adjustment of its position to reflect the developments of past sessions.

D. The Interior Department, the Commerce Department and OMB resist altering the USG position prior to DPC consideration, yet do not wish to jeopardize the continuation of the international negotiations.

Wed 2:00 5806 Climate Friday 1:00pm

Thursday 3:30pm

JK Bradley's proposal

U.S. Negotiating Strategy for
UNEP Ozone Protocol Negotiations
Third Session: April 27-30, Geneva

I. Controls

A. First Step

1. Freeze "emissions" at 1986 levels.

- o include all CFCs and Halons
- o automatic 0-2 years after entry into force

2. 20% Reduction

- o include CFC 11, 12, 113
- o automatic 2-4 years after entry into force

B. Second Step

- o "up to" 50% reduction, subject to science
- o include CFC 11, 12, 113
- o within 8-10 years after entry into force

3 and other tech & compliance info? (i.e. substit's + LDC's.)

C. Third Step

- o "up to" 95% reduction, subject to science
- o include CFC 11, 12, 113
- o within 14-16 years after entry into force

II. General Provisions

- o Emissions. Define "emissions" as weighted "adjusted production " (P+I-E-D) (but consider other alternatives.)

- o Country Coverage. All major producing/using countries must sign; encourage potential major producers/users (e.g., China, India) to sign; allow (?) LDC's to join (but not if they get an emissions allowance)

- o Scientific Assessment. Next major review 4-6 years after entry into force, then every 6 years thereafter; minor reviews every 2 years (also include technical and economic assessments)

- o Trade Aspects. Support provisions to encourage compliance with controls.

0 Freeze at 1986 CFC 11, 12, 113, 114,115 and Halons

2 20% Reduction of CFC 11, 12, 113

4 Major Science Review

6

8 "Up to" 50% Reduction of CFC 11, 12, 113 Based on Science

10 Major Science Review

12

14 "Up to" 95% Reduction of CFC 11, 12, 113 Based on Science

16 Major Science Review

...rest
..., contribu-
...nd food assist-
...ateral aid went to
..., now two-thirds goes
...e than 40 percent of all
...Egypt.
...signated for only two coun-
...the overall aid program is being cut

...s as one security pot? It ai...
gency, funds can be taken from the
ment. This would require major structura...
in thinking and budgeting. But that's just what m...
be called for from Congress.

In the meantime, the smaller foreign aid pie must be shared more equitably. There are good reasons to give billions in aid to Israel and Egypt. None of them are good enough to justify eviscerating so many other programs.

Topics of The Times

Ozone Subversion

A few man-made chemicals are gnawing at the ozone layer, the invisible shield in the stratosphere that protects life from ultraviolet rays. The State Department hopes Europe and Japan will phase down production of the ozone-destroying chemicals, starting with a 50 percent cut. But just as negotiations are to resume, the department's position is being undermined by the Office of Management and Budget.

Budget and other officials want State to demand only token reductions. They pooh-pooh the scientific warnings and contend the economic costs of phasing out the chemicals would be too high. But the Environmental Protection Agency has determined the hazard is real and cumulative; the destructive chemicals last for decades. The O.M.B. position would compel a humiliating American withdrawal from a position of leadership on a vital issue.

The threat to the ozone layer is hard to quantify but a substantial increase in ultraviolet radiation would provoke more skin cancer and eye damage and immeasurable disruption to other animal life. The State Department deserves support, not subversion, from the White House.

Disaster in Phoenix

Perhaps the worst thing about the Phoenix Suns' drug scandal, involving at least half a dozen present and former pro basketball players, is that it comes as no surprise. If drug availability is a river in the rest of society, it's an ocean in professional sports. After two members of the Houston Rockets were expelled from the league for cocaine abuse, their teammates described relentless pressure from dealers and the fortitude required to resist.

The threat of losing a huge salary for performing work that's really play ought to inspire fortitude enough. Let the Mets' Dwight Gooden explain why it doesn't. Or Micheal Ray Richardson, the onetime New Jersey Net. Or Steve Howe, the former Los Angeles Dodger. Then consider two who died: Len Bias, almost a Boston Celtic, and Don Rogers, a Cleveland Brown.

If sports stars can succumb to drugs one at a time, why not several at once? That, say prosecutors, is what happened in Phoenix, where three current and two former players were indicted last week on cocaine-related charges. In addition, the team's star, Walter Davis, checked into a rehabilitation clinic for the second time.

Several years ago, after two college football teams were wiped out in plane crashes, the professional leagues made contingency plans for replacing teams in the event of disaster. As the drug disaster claims casualties, those plans may have to be used.

Spring Cleaning in the Bronx

In his five years as a Bronx City Councilman, Fernando Ferrer was known for competence as a legislator and loyalty to the borough's powerful Democratic machine. Now, in only a few days as Bronx Borough President, he has shown commendable independence.

The Bronx City Council delegation last week elected Mr. Ferrer to replace Stanley Simon, who was indicted in the Wedtech scandal. The new Borough President promptly resigned as a Democratic district leader, a move designed to show that the political machine would no longer run the government. He then upset party stalwarts by urging Bronx lawmakers not to oppose Governor Cuomo's veto of the Legislature's flabby ethics bill.

Now Mr. Ferrer has initiated an overdue Borough Hall housecleaning by inviting the City Comptroller to conduct an audit of purchasing, hiring practices, staff deployment and other key activities. Mr. Ferrer also invited the Comptroller to scrutinize the operations of the Bronx Overall Development Corporation, long a vehicle for influence-peddling by Stanley Friedman, the former Bronx boss recently convicted of racketeering.

Mr. Ferrer's fresh start gives borough residents, and all New Yorkers, reason for cheer.