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DOMESTIC POLICY COUNCIL

June 11, 1987

STRATOSPHERIC OZONE - BENEFITS AND COSTS

- o Interagency process has been arduous.

as in paper
X Not all differences in assumptions have been reconciled

- Purpose is to present "best judgment" on range of estimates and assumptions, recognizing that this will not represent unanimity among agencies.

- o Concept of economic cost of control actions *on CFC* is relatively straightforward.

- Calculate total present discounted value of costs of cutting back CFC's and moving to substitutes.

- Costs will be shown as a range reflecting alternative *estimates* ~~assumptions~~ about the growth of demand.

- o Concept of economic benefits much more difficult, because the largest benefit, from perspective of U.S. and in terms of current knowledge, is the benefit from avoiding a large number of skin cancer deaths in the future.

- How to put an economic value on lives saved?

- How to account for the fact that these benefits will accrue mostly to future generations?

- We will follow recommendation of the Working Group Subcommittee on Benefits and Costs, and report results under a range of assumptions selected by the Subcommittee.

o Valuation of deaths averted *is a*

-- ~~Shorthand~~ way of expressing how much society would be willing to pay to reduce the skin cancer risk from ozone depletion.

-- Estimates *are* based on people's willingness to pay to avoid risks -- a market-based concept grounded in empirical data.

-- Economists (and the agencies) do not have a consensus value. *however* CEA agrees with Working Group Subcommittee on Benefits and Costs recommendation to report initial values of \$2 million and \$4 million *per life*.

o Discounting of future benefits.

-- Agencies disagree on discount rate to use; we concur *however* with Working Group Subcommittee recommendation to report 4% and 6%. This is an attempt to bracket what the average real rate of return on capital over the entire economy actually is.

-- Real rate of return on capital is what future generations would use if they could make the decision.

-- Using a discount rate higher than the real rate of return on capital means placing less weight on well-being of our children and grandchildren than we place on our own.

-- Using a discount rate lower than the real rate of return on capital would overestimate benefits more than it would overestimate costs.

-- There is, however another way to view the decision. The cost of controlling the CFCs may be likened to the cost of an insurance policy against a very bad, but somewhat uncertain, outcome---^{le}severe depletion of the ozone layer. People and governments ^{apparently} require lower rates of return on insurance investments than on other investments, ^{this fact tends to} suggesting use of a lower discount rate in this case.

o Comparison of benefits and costs. [See Handout.]

/, -- Benefits of the freeze substantially outweigh the costs.

[Chart 1] This is true in all cases reported. [Chart 2]

[[Note: If asked, the cases are: 2 initial values of life
2 growth rates for value
of life
2 discount rates
4 time profile of when
deaths would occur
32 cases in all.]]

2. -- On average [Chart 1] and in almost all cases reported [Chart 2], the benefits of the additional 20% reduction exceed the costs.

-- On average [Chart 1] and in ^{the majority of} ~~most~~ cases [Chart 2], the benefits of the additional 30% reduction exceed the costs.

However, case less strong.

-- Conclusion:

- 1 * Freeze is clearly indicated.
- 2 * Next 20% reduction should also be done, with very high probability of being right.
- 3. * Next 30% reduction ^{may also be justified} ~~also likely to be called for~~, but better information will be available before taking the ~~or should be used.~~ step. Include it in the protocol, but require a positive vote before implementing it.

In conclusion, I want to

- o Commend EPA on the thoroughness and high standard of its Risk Assessment *which we reviewed - 500,000*

- Strongly recommend increase in research budget *for effects side of project* (currently less than \$1 million per year) to get further information on immune system, crop, and aquatic effects in time for the scientific, technical, and economic review before the 30% cut. ^{EPA believes} \$6-10 million per year would be needed. *This is in comparison to over 100 mil per yr now spent on atmospheric research.*

TABLE 1: COMPARISON OF BENEFITS AND COSTS OF CFC CONTROL STEPS

Step	BENEFITS*		COSTS**	
	(billions of dollars)		(billions of dollars)	
	Discount Rate		Discount Rate	
	<u>4%</u>	<u>6%</u>	<u>4%</u>	<u>6%</u>
(No action) to (Freeze)	\$739	\$131	\$1.6 - \$3.3	\$1.0 - \$1.4
(Freeze) to (Freeze + 20%)	34	6.4	3.5 - 7.0	2.2 - 3.0
(Freeze + 20%) to (Freeze + 50%)	58	11	9.2 - 18.7	5.8 - 8.0

*Assumptions for Benefits Calculations:

- (1) Deaths averted and scenarios for "Freeze" and cuts correspond to deaths averted and scenarios for health effects estimates. E.g., "Freeze" is a "Protocol Freeze," not a true global freeze, etc.
- (2) Benefits and costs as shown in Table are incremental benefits and costs of indicated steps. Present values of marginal benefits are averaged over ranges of parameters reported by Working Group Subcommittee on Benefits and Costs:
 - Value of life initially: \$2,000,000; \$4,000,000
 - Increase in value of life over time: growth at 2% per year; value of life constant.
 - Four different time profiles for deaths averted
- (3) Benefits calculated for premature skin cancer deaths averted only. Benefits for preventing non-fatal skin cancers, cataracts, and other economic damages would be additive.

**Assumptions for Cost Calculations:

- (1) Low ends of ranges: marginal costs grow at .625% per year forever.
- (2) High ends of ranges: marginal costs grow at 2.5% per year forever.

TABLE 2: SENSITIVITY ANALYSIS--COMPARISON OF BENEFITS AND COSTS UNDER DIFFERENT ASSUMPTIONS

<u>Step</u>	<u>Percent of cases in which benefits exceed costs</u>	<u>Percent of cases in which benefits approximately equal costs</u>	<u>Percent of cases in which benefits are less than costs</u>
(No Action) to (Freeze)	100%	0%	0%
(Freeze) to (Freeze 20%)	78%	3%	19%
(Freeze + 20%) to (Freeze + 50%)	56%	19%	25%

Assumptions: Same as Table 1.

HC

491441

C. Anderson

May 21, 1987

President Ronald Reagan
The White House
1600 Pennsylvania Avenue
Washington, D.C. 20500

Dear Mr. President:

The depletion of stratospheric ozone by halocarbon compounds presents one of the most important environmental challenge of our time. The consequences of inaction would be unprecedented - millions of new cases of skin cancer, millions of dollars in damage every year to crops and materials, increasing air pollution, and a powerful stress on our forests and oceans.

Recognizing the singular nature of the threat, more than two dozen nations have been negotiating a protocol under the sponsorship of the United Nations Environment Programme to limit the emissions of halocarbons. E.P.A. Administrator Lee Thomas took an important leadership role in this process when he announced the U.S. position calling for a 95% phaseout of emissions with interim reductions of 20% and 50%. A large near term reduction of 50% is needed to provide the incentive for the development of substitute chemicals, which the industry says can be available in quantity in five years. The 95% phaseout is needed for two reasons. First, just to stabilize concentrations in the atmosphere at current values, an 85% reduction in emissions is required. Secondly, only a strong commitment by the industrialized nations to wean themselves from dependence upon these chemicals will create the credibility necessary for the rest of world to cooperate in the Vienna Convention. Increasing per capita consumption in the less developed countries is sure to offset reductions in the U.S., Japan, and Europe if the commitment to an eventual phaseout is absent.

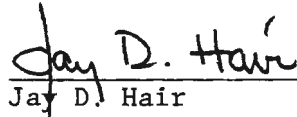
Decisions are currently being made within the Domestic Policy Council as to the final U.S. position. An automatic interim 50% target and a commitment to the longterm phaseout are the critical elements of the U.S. position. The wisdom of that position was reaffirmed at a Senate hearing last week when scientists for the first time stated that halocarbons are the likely cause of the ozone hole over Antarctica. The existence of the hole underscores the urgent need to act. With this new evidence in hand, the Europeans and Japanese have been moving toward the U.S. position, so this is no time to compromise on these two critical elements.

As leaders of the major environmental organizations in this country, we commend the strong leadership exercised by your E.P.A. on this issue, the most critical environmental issue of our time. Successful negotiation of a strong protocol to protect the ozone layer would make a distinguished and lasting landmark for your Presidency. We urge that you lend your personal support to the position developed by the E.P.A.

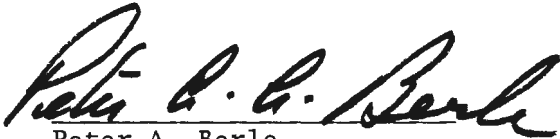
Respectfully,


John H. Adams
Executive Director

Natural Resources Defense Council


Jay D. Hair

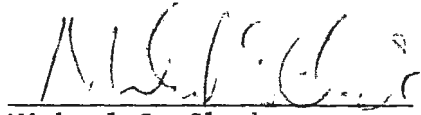
Executive Vice President
National Wildlife Federation


Peter A. Berle

President
National Audubon Society


Frederic D. Krupp

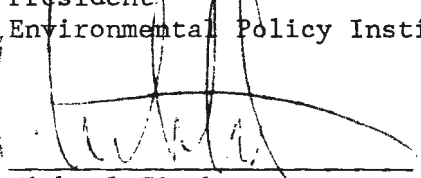
Executive Director
Environmental Defense Fund


Michael S. Clark

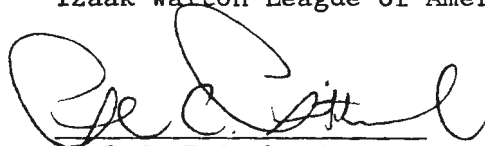
President
Environmental Policy Institute


Jack Lorenz

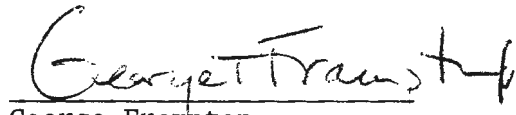
Executive Director
Izaak Walton League of America


Michael Fischer

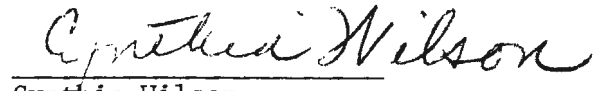
Executive Director
Sierra Club


Paul C. Pritchard

President
National Parks & Conservation Assoc.


George Frampton

President
The Wilderness Society


Cynthia Wilson

Executive Director
Friends of the Earth

HD

49 344

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

C. Anderson

May 19, 1987

The President
The White House
Washington, D.C. 20500

Dear Mr. President:

On behalf of the members of the Alliance for Responsible CFC Policy, I am writing to urge that the United States not support any reduction measures as part of the United Nations Environment Programme (UNEP) negotiations on a protocol to protect the ozone layer by restricting chlorofluorocarbons (CFCs).

encl

Any reduction measures at this time are scientifically and environmentally unnecessary, and may place U.S. industries at a significant competitive disadvantage worldwide. Our industries will support, however, a freeze on the emissions of these compounds as part of the UNEP negotiations so long as the agreement incorporates a long-term management process for the assessment of scientific, economic and technological information as a basis for any additional control measures in the future.

An emissions freeze is an effective environmental protection step in the near-term, but it will also impose significant costs on the U.S. economy. Based on our analysis, the freeze will impose more than \$1 billion in costs on the U.S. economy from CFC price increases alone between 1988 and 2000. Near-term reduction measures will impose far greater costs on our industries, the impacts of which have not yet been properly evaluated by anyone in or out of government.

Page Two

Mr. President

CFCs are relied upon by several critical industries including air conditioning and refrigeration, automobile, electronics, food processing and foam manufacturing. We have estimated direct employment related to CFC use is in excess of 715,000 jobs with the annual value of goods and services in the U.S. of \$28 billion. (A representative list of Alliance members is attached.)

The industry has supported the negotiations of the protocol for protection of the ozone layer. An international agreement to freeze emissions accompanied by a long-term management and assessment process is a dramatic environmental protection step and one that will protect the competitiveness of U.S. industries worldwide.

We urge you to oppose U.S. support for any reduction measures as part of this international agreement at this time.

Sincerely,

A handwritten signature in cursive script that reads "Richard Barnett".

Richard Barnett
Chairman

Enclosure

RB:sct



MEMBER COMPANIES, ALLIANCE FOR RESPONSIBLE CFC POLICY

A

Abbott Laboratories
Chicago, IL
Acco Refrigeration Supply
Corp.
Long Island, NY
ACR/Pearless 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 &
Insulation, 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 &
Refrigeration Institute
Arlington, VA
Air Conditioning &
Refrigeration Wholesalers
Orlando Beach, FL
Air Conditioning Suppliers, Inc.
Richmond, VA
ARCO 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 Pro-
ducts 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 Appliance
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
Parsippany, 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
Bramco Corporation
Sioux City, IA
Bristol Compressors
Bristol, VA
W.A. Brown & Son, Inc.
Salisbury, NC
Builders World
Cassopolis, MI
Building Owners and Manufac-
turers 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.
Pensauken, NJ
Chase Supply Company
Alsip, IL
Chem Central Corporation
Chicago, IL
Chemical Manufacturers
Association
Washington, DC
Chemical Specialties Manufac-
turers 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 Manu-
facturers 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 Contrac-
tors, 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
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.
Jafford, 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 Com-
pany, 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 Com-
pany, Inc.
Sparta, NJ
General Coatings, Inc.
St. Paul, MN
Gene Conreux & 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
Genesee Refrigeration Sup-
plies, Inc.
Rochester, NY
Gilbert Foam Insulation Com-
pany, 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 Com-
pany, 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
Insko 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 Weyer 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, CA

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
Perflex 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
Otis 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.
Spawner, 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
Spencer Insulation
New Albany, PA
Sportan Valve Company
St. Louis, MO
Square D Company, SunDial
Plant
Mesquite, TX
Standard Refrigeration Company
Melrose Park, IL
Stayton Canning Company
Cooperative
Stayton, OR
Stoetting, 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.
Lidell, LA
Tecumseh Products Company
Tecumseh, MI
Tekni-Flex, 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 Corporation
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
Vertec Corporation
Kirkland, WA
Virginia Chemical, Inc.
Dallas, TX
Vollrath Refrigeration, Inc.
River Falls, WI
Votek, 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
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Rosslyn, Virginia 22209
703/841-9363

ALLIANCE FOR RESPONSIBLE CFC POLICY
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ROSSLYN, VIRGINIA 22209
(703) 841-9363

May 18, 1987

The Honorable George P. Shultz
Secretary
Department of State
Main State Department Bldg.
2201 C Street, N.W.
Washington, D.C. 20520

Dear Secretary Shultz:

The Alliance for Responsible CFC Policy appreciates the opportunity to provide further input concerning the ongoing negotiations to obtain a protocol to the Vienna Convention for Protection of the Ozone Layer. In view of the recently completed Ad Hoc Working Group meeting, we felt it would be useful to reiterate the Alliance's position concerning the international agreement.

The most critical aspects in the United Nations Environment Programme (UNEP) negotiations are the broad coverage of chemical compounds, country participation and the establishment of a long-term management process for future decision making. Efforts to focus on attainment of reduction steps in this agreement are scientifically and environmentally unnecessary, economically unwise, and, we believe, imprudent from a negotiation standpoint.

We believe the current use or emission of CFCs for the near future does not present a threat to human health or the environment. The Alliance encourages that steps be taken to curtail additional growth in the production capacity of these compounds until such time as scientific analysis provides better information. Reduction steps, however, should be considered only as part of the future assessment process if deemed to be necessary at that time.

The Alliance has stated, however, that it will not oppose a freeze on the emission of the fully-halogenated compounds so long as it is accompanied by a periodic assessment of the scientific, economic and technological issues as a basis for future steps. An agreement to freeze the emissions of these compounds should be considered an effective environmental protection step. It should also be recognized as one that will impose significant costs on the U.S. economy.

According to a recently completed analysis of the CFC using and producing industries, a freeze on CFCs 11, 12 and 113 could lead to price increases of 300-400% by the mid-1990's. Costs to the economy would be approximately \$1 billion during the period 1988-2000. Annual costs would exceed \$180 million in the mid-1990's.

A freeze will reduce aggregate projected CFC use by approximately 1.1 million metric tons by the year 2000, or the equivalent of about four years of current U.S. CFC production. This curtailment of CFC use over the next decade will create a significant market incentive for users and producers to search for substitute compounds and other environmentally effective processes.

Some EPA officials have acknowledged that a freeze will "eventually" spur the development of substitute compounds. The above economic analysis supports our assertion, however, that this development work will proceed rapidly.

The U.S. industry will have a more definitive answer concerning the availability of substitute compounds in 3-4 years. In our view, no agreement on a reduction step should be signed, assuming a freeze is achievable, until after the next scientific assessment is completed.

To our knowledge, neither EPA nor anyone else has completed an economic or environmental impact analysis of the reduction steps currently being considered at UNEP. Although, we do understand that EPA currently has a study in progress.

Furthermore, an agreement to reduce CFC use and emissions prior to the known availability of acceptable substitute compounds may actually prove counterproductive. A reduction timetable that does not allow user industries the time to wait for development of appropriate long-term CFC substitutes may leave no other choice but to begin planning based on the currently available, but less desirable substances. Once such a commitment is made on the part of the user industries the desire for both users and producers to pursue development of new compounds will be greatly diminished.

These concerns greatly necessitate the need for a long-term management process for proper decision making.

Page Three

Finally, if we continue to seek reduction steps in the negotiation process without a proper focus on the trade and developing-nations issues, we may lose the opportunity to obtain a fair and reasonable agreement that protects both the environment and U.S. competitiveness in the world market. In our view the U.S. has placed too much emphasis on reduction steps rather than on a well-rounded agreement in the UNEP negotiations.

We urge you to consider these points as you give consideration to the U.S. position and hope to meet with you and your staff soon to discuss our economic analysis.

Sincerely,

(S)

Richard Barnett
Chairman

Enclosures

RB:sct

IDENTICAL LETTER SENT TO:

The Honorable George Bush
Vice President of the United States
Old Executive Office Building
17th Street & Pennsylvania Avenue, N.W.
Washington, D.C. 20501

The Honorable Edwin Meese III
Attorney General
Department of Justice
Main Justice Building
10th and Constitution Avenue, N.W.
Washington, D.C. 20530

The Honorable Clayton Yeutter
U.S. Trade Representative
600 17th Street, N.W.
Room 209
Washington, D.C. 20506

The Honorable James C. Miller III
Director
Office of Management and Budget
Old Executive Office Building
17th Street & Pennsylvania Avenue, N.W.
Washington, D.C. 20503

The Honorable Lee Thomas
Administrator
Environmental Protection Agency
401 M Street, SW
Suite 1200, West Tower
Washington, D.C. 20460

The Honorable George P. Shultz
Secretary
Department of State
Main State Department Bldg.
2201 C Street, N.W.
Washington, D.C. 20520

The Honorable Caspar W. Weinberger
Secretary
Department of Defense
The Pentagon
Washington, D.C. 20301

Page Two

The Honorable Malcolm Baldrige
Secretary
Department of Commerce
Herbert C. Hoover Bldg.
14th Street and Constitution Ave., N.W.
Washington, D.C. 20230

The Honorable Elizabeth Hanford Dole
Secretary
Department of Transportation
Nassif Building
400 Seventh Street, S.W.
Washington, D.C. 20590

The Honorable Donald P. Hodel
Secretary
Department of the Interior
Interior Building
18th & C Street, N.W.
Washington, D.C. 20240

The Honorable John S. Herrington
Secretary
Department of Energy
Forrestal Building
1000 Independence Avenue, S.W.
Washington, D.C. 20585

DOMESTIC POLICY COUNCIL

June 11, 1987

STRATOSPHERIC OZONE - BENEFITS AND COSTS

- o Interagency process has been arduous.
 - Not all differences in assumptions have been reconciled.
 - Purpose is to present "best judgment" on range of estimates and assumptions, recognizing that this will not represent unanimity among agencies.
- o Concept of economic cost of control actions is relatively straightforward.
 - Calculate total present discounted value of costs of cutting back CFC's and moving to substitutes.
 - Costs will be shown as a range reflecting alternative assumptions about the growth of demand.
- o Concept of economic benefits much more difficult, because the largest benefit, from perspective of U.S. and in terms of current knowledge, is the benefit from avoiding a large number of skin cancer deaths in the future.
 - How to put an economic value on lives saved?
 - How to account for the fact that these benefits will accrue mostly to future generations?
 - We will follow recommendation of the Working Group Subcommittee on Benefits and Costs, and report results under a range of assumptions selected by the Subcommittee.

[[[The following two bullets cover major points, but there is not enough time for it. What is your preference?]]]

o Valuation of deaths averted.

- Shorthand way of expressing how much society would be willing to pay to reduce the skin cancer risk from ozone depletion.
- Estimates based on people's willingness to pay to avoid risks -- a market-based concept grounded in empirical data.
- Economists (and the agencies) do not have a consensus value. CEA agrees with Working Group Subcommittee on Benefits and Costs recommendation to report initial values of \$2 million and \$4 million.
- Should this value be allowed to increase over time as per capita income increases? Again, no agreement.
 - * Wealthier people (hence future generations) will have greater willingness to pay to avoid risks, but
 - * We will be making sacrifices for wealthier future generations
- No adjustment made for effects of age on willingness to pay to avoid risk, hence value of life saved.

o Discounting of future benefits.

- Agencies disagree on discount rate to use; we concur with Working Group Subcommittee recommendation to report 4% and 6%.

- Real rate of return on capital is what future generations would use if they could make the decision.
- Using a discount rate higher than the real rate of return on capital means placing less weight on well-being of our children and grandchildren than we place on our own.
- 7 -- Using a discount rate lower than the real rate of return on capital is like buying an insurance policy against a very bad outcome.

[[[Resume discussion here.]]]

o Comparison of benefits and costs. [See Handout.]

- Benefits of the freeze substantially outweigh the costs.

Go True in all cases reported. *How determining cases?*

- On average and in almost all cases reported, the benefits of the additional 20% reduction exceed the costs.

- On average and in most cases, the benefits of the additional 30% reduction exceed the costs. But more information will be available before that step is taken.

Benefit and cost estimates can be updated.

- If the Freeze and the first 20% reduction are considered as a single step (as in the Chairman's text), the benefits outweigh the costs.

*noted
but wait*

have in protocol

o Commend EPA on the thoroughness and high standard of its Risk Assessment.

-- Strongly recommend increase in research budget for estimation of health and other effects, in time for the scientific, technical, and economic review before the 30% cut.

COMPARISON OF BENEFITS AND COSTS

MARGINAL BENEFITS*
(billions of dollars)

MARGINAL COSTS**
(billions of dollars)

Discount Rate

Discount Rate

STEP	Discount Rate		Discount Rate	
	4%	6%	4%	6%
(No action) to (Freeze)	\$739	\$131	\$1.6 - \$3.3	\$1.0 - \$1.4
(Freeze) to (Freeze +20%)	34	6.4	3.5 - 7.0	2.2 - 3.0
(Freeze +20%) to (Freeze +50%)	58	11	9.2 - 18.7	5.8 - 8.0
(No action) to (Freeze +20%)	773	137	5.1 - 10.3	3.2 - 4.4

*Assumptions for Benefits Calculation:

- (1) Deaths averted and scenarios for "Freeze" and cuts correspond to deaths averted and scenarios for health effects estimates. E.g., "Freeze" is a "Protocol Freeze," not a true global freeze, etc.
- (2) Present values of marginal benefits are averaged over ranges of parameters reported by Working Group Subcommittee on Benefits and Costs:
 - Value of life initially: 2,000,000-\$4,000,000
 - Increase in value of life over time: growth at 2% per year; constant at 2% per year; value of life constant.
 - Four different profiles for deaths averted
- (3) Benefits calculated for premature deaths averted only. Benefits for preventing non-fatal skin cancers, cataracts, and other economic damages would be additive.

**Assumptions for Cost Calculations:

- (1) Low end of range: marginal costs grow at .625% per year forever.
- (2) High end of range: marginal costs grow at 2.5% per year forever.

SENSITIVITY ANALYSIS: Comparison of Benefits and Costs Under Different Assumptions

<u>Step</u>	<u>Percent of cases in which benefits exceed costs</u>	<u>Percent of cases in which benefits approximately equal costs</u>	<u>Percent of cases in which benefits are less than costs</u>
(No Action) to (Freeze)	100%	0%	0%
(Freeze) to (Freeze 20%)	78%	3%	19%
(Freeze + 20%) to (Freeze + 50%)	56%	19%	25%
(No Action) to (Freeze + 20%)	100%	0%	0%

Assumptions: Same as previous table.

THE WHITE HOUSE

WASHINGTON

June 12, 1987

MEMORANDUM FOR THE DOMESTIC POLICY COUNCIL

FROM: RALPH C. BLEDSOE *Ralph Bledsoe*
Executive Secretary

SUBJECT: Stratospheric Ozone

As requested at the June 11 Council meeting, a draft of a decision memorandum that will be sent to the President is attached for your review. It was prepared following a meeting of a small group of Council principals appointed by the Chairman Pro Tempore.

You are asked to comment on the accuracy and general format of the memorandum, and provide your department or agency position on the issues for which you have a view. Comments should be returned or telephoned to my office, (Room 200 OEOb -- 456-6640), no later than noon on Monday, June 15, 1987. If you have any questions, please call Vicki Masterman or me at that number.

We will notify you immediately if there is need for a Domestic Policy Council meeting to further discuss this issue. Otherwise, the decision memo will be forwarded to the President.

Attachment

THE WHITE HOUSE

WASHINGTON

June 12, 1987

MEMORANDUM FOR THE PRESIDENT

FROM: THE DOMESTIC POLICY COUNCIL

SUBJECT: Stratospheric Ozone

Issue: What guidance should the U.S. delegation be given for the next stages of international negotiation of an agreement for regulation of chemicals believed capable of future depletion of stratospheric ozone?

Background

During the 1970's, concerns were expressed in the scientific community that continued growth in the use of certain chemicals would result in future depletion of stratospheric ozone, which some scientists predict would cause such adverse health and environmental effects as increased skin cancer deaths, cataracts, crop damage and aquatic impacts. Others, however, believe that some of the scientific assumptions and projections, which extend as far as the year 2165, do not accurately account for future technological and scientific developments that may occur.

Most scientists, however, predict that significant ozone depletion will occur unless international action is taken to control the chemicals at issue, even though there are numerous medical and scientific uncertainties about the potential impacts of such depletion. Ideally, any freeze or reduction in CFCs should be based on reliable scientific evidence that use of CFCs causes depletion of stratospheric ozone. While there are differing views within the Council on the reliability of the scientific evidence available at this time, the irreversibility of CFC accumulations and consequent ozone depletion argues for strong action to secure some form of international agreement this year, with provision for future scientific assessment.

Concern over these predictions led Congress to add an ozone protection section to the Clean Air Act in 1977 and to ban aerosols in 1978. Similar actions were taken by other countries. Currently, there is strong judicial and congressional pressure for action to protect the ozone layer. Both the Senate and the House have passed resolutions supporting international negotiations. If an effective international agreement is not reached, Congress and the courts are likely to require unilateral domestic reductions of the chemicals in question. Such unilateral U.S. action would not protect the ozone layer and would likely disadvantage American businesses in world markets.

The U.S. is currently a party to the 1985 Vienna Convention for Protection of the Ozone Layer. Your ratification message to the Senate stated that this Convention addresses stratospheric ozone depletion "primarily by providing for international cooperation in research and exchange of information . . . and could also serve as a framework for negotiation of regulatory measures that might in the future be considered necessary. . . ." The U.S. has been a leader in the three Convention meetings held thus far to develop an international agreement on control of the chemicals in question. The U.S. delegation has been guided by a Circular 175 approved by the State Department. The next meeting is scheduled for June 29, 1987 with plans to conclude the negotiations in Montreal by September.

In a recent cost benefit analysis done by CEA, the potential benefits of taking some actions to protect the ozone layer were found to be much greater than the costs of controlling the relevant chemicals. For example, a freeze plus a 20-percent reduction of emissions of selected chemicals was concluded to be clearly economically justified. Further reductions may also be economically justified under other scenarios considered, although further information and evaluation of these benefits and costs would be needed. The chemicals in question are used in the production of refrigerators, mobile air-conditioners, computers, foam insulation, fire extinguishers, and electronic industry. Some of them also have national defense applications.

Discussion

The most recent negotiations have produced a Chairman's Text for an agreement, which each country has been asked to review prior to the June 29 meetings. The Domestic Policy Council met on May 20 and June 11 to discuss the Chairman's Text, as well as the overall negotiations. The Council agreed that we should continue with negotiations based on the general framework of the Circular 175. Several members felt, however, that the delegation should be given further specific instructions, which are covered in the following issues and options. Your decisions on these are requested.

ISSUE 1 -- FREEZE

Should the delegation seek a freeze at 1986 levels on production/consumption of all seriously ozone-depleting chemicals (CFCs 11, 12, 113, 114, 115; Halons 1201 and 1311), to take effect one or two years after the protocol entry into force (EIF)?

Yes _____

No _____

This proposal is contained in the Chairman's Text and has unanimous support of the Council.

DRAFT

ISSUE 2 -- SCHEDULED 20% REDUCTION

Should the delegation agree to a 20% reduction from 1986 levels of CFCs 11, 12, 113, 114 and 115, two to four years after EIF, following an international review of updated scientific evidence?

The Council supports this option, but it is divided over the following options for how the reductions should be implemented:

_____ Option 1. The 20% reduction should occur regardless of a scientific review. *out*

This proposal is contained in the current Chairman's Text and is supported by.....

_____ Option 2. The 20% reduction should take place following a scientific review, unless 2/3 of the parties vote against.

This option is supported by.....

_____ Option 3. The 20% reduction should take place only if a majority vote in favor, following a scientific review.

This option is supported by.....

ISSUE 3 -- SCHEDULED FURTHER REDUCTIONS

Should the delegation seek further CFC reductions, more or less than 50% cumulative, from 1986 levels? These would occur 8 or more years after EIF?

_____ Option 1. Yes, and such reductions should be specified to occur automatically at designated points in time. *out*

This option is supported by.....

_____ Option 2. Yes, and such reductions should occur only after further scientific reviews, and if a majority of the protocol parties vote in favor.

This is consistent with the Chairman's Text and is supported by

_____ Option 3. Further reductions should not occur unless the parties enter into an additional protocol based on scientific evidence not now available. *2/3*

This option is supported by.....

ISSUE 4 -- ENTRY INTO FORCE AND PARTICIPATION

Ideally, all nations should participate in the protocol for it to globally address the ozone depletion problem. Recognizing that this is not likely, the Council feels we should nevertheless seek maximum participation.

Should the delegation agree to entry into force of a freeze and any future reductions only when a sufficient number of countries have signed and ratified the protocol?

_____ Option 1. Yes, and this determination should be made by the U.S. delegation.

This option is supported by.....

_____ Option 2. Yes, and determination should be according to a formula that takes into account population, production, consumption and other factors about the parties.

This option is supported by.....

_____ Option 3. No, but reassess U.S. actions after other countries have signed.

This option is supported by.....

ISSUE 5 -- GRACE PERIOD FOR LESSER DEVELOPED COUNTRIES

To encourage their participation, lesser developed nations should be given a grace period up to the year 2000?

_____ Option 1. Yes

This option is supported by.....

_____ Option 2. No

This option is supported by.....

ISSUE 6 -- LONG RANGE OBJECTIVE

Should the delegation seek a statement that the ultimate objective is to substantially eliminate all potential threats to the stratospheric ozone layer from man-made chemicals, as determined by regularly scheduled scientific assessments.

Yes _____

No _____

This proposal has unanimous support of the Council.

*on out
Revised*

ISSUE 7 -- VOTING

Should the delegation seek to negotiate a system of voting that gives due weight to the significant producing and consuming countries?

Yes _____ No _____

This proposal has unanimous support of the Council.

ISSUE 8 -- CREDITS FOR PREVIOUS ACTIONS

Should the delegation seek a system of credits for previous emissions reductions, such as the 1978 U.S. ban of non-essential aerosols.

_____ Option 1. Definitely propose such a system.

This option could provide an advantage to the U.S. in meeting any reduction targets, and is supported by.....

_____ Option 2. Let the delegation decide.

This option is supported by.....

_____ Option 3. Do not propose such a system. In previous negotiations, other countries objected to this proposal, claiming that we are still the largest producer of CFCs.

This option is supported by.....

ISSUE 9 -- MONITORING

Should the delegation seek strong provisions for monitoring and reporting to secure the best possible compliance with the protocol?

Yes _____ No _____

This proposal has unanimous support of the Council.

Edwin Meese III
Chairman Pro Tempore

Attachment

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.