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DOCUMENT NO. & TYPE	SUBJECT/TITLE	DATE	RESTRICTION
~~1. memo~~	~~John Negroponte to Wallis, re circular 175, 7p~~ A 1/10/03 F00-013 #91	~~11/28/86~~	~~P1/F1~~
~~2. letter~~	~~George Shultz to Ed Meese, re international negotiations, 2p~~ A 1/10/03 F00-013 #92	~~6/1/87~~	~~P1/F1~~
~~3. summary~~	~~Protocol, 1p~~ A 1/10/03 F00-013 #93	Nd	P1/F1

RESTRICTIONS

P-1 National security classified information [(a)(1) of the PRA].
P-2 Relating to appointment to Federal office [(a)(2) of the PRA].
P-3 Release would violate a Federal statute [(a)(3) of the PRA].
P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA].
P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA].
P-6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA].

C. Closed in accordance with restrictions contained in donor's deed of gift.

F-1 National security classified information [(b)(1) of the FOIA].
F-2 Release could disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA].
F-3 Release would violate a Federal statute [(b)(3) of the FOIA].
F-4 Release would disclose trade secrets or confidential commercial or financial information [(b)(4) of the FOIA].
F-6 Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA].
F-7 Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA].
F-8 Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA].
F-9 Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA].

Nancy -
How we got to the current situation on ozone.
Bill

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20506

May 29, 1987

MEMORANDUM FOR BILL GRAHAM

FROM: BEVERLY BERGER AND DICK JOHNSON

SUBJECT: BACKGROUND/STRATOSPHERIC OZONE PROTOCOL NEGOTIATIONS (INFORMATION MEMO)

Attached are several memoranda and papers relevant to international negotiations on stratospheric ozone.

- U.S. has been participating in international negotiations on stratospheric ozone since 1983, which led to the Vienna convention in March 1985.
    - No agreement on controls in 1985. U.S. was pushing an aerosol ban, Europe was pushing a production cap.
    - Convention set up process for scientific assessments and workshops.
- Between March 1985 and December 1986 there were a number of scientific and economic workshops, which led to reports such as the World Meteorological Organization's very thorough three volume assessment of an understanding of the processes controlling the present distribution and change of atmospheric ozone. The U.S. was not involved in negotiations in this period.
- The Circular 175 on Ozone, dated November 28, 1986, was circulated to many agencies--but not to Office of Science and Technology Policy (OSTP) or Department of Interior (DoI). See Attachment A.
- OSTP had not been involved in establishing U.S. positions for negotiations at meetings prior to the April 1987 meeting.
- Negotiations on protocols to the convention occurred in December 1986, February 1987 and April 1987.

- U.S. delegates to the April 1987 negotiating session were specifically instructed that they "...should not at this meeting definitively agree to specific terms, but rather aim for bracketed text, consistent with Circular 175 authority, for further review in Washington." (See Attachment B, page 3 of the U.S. Position Paper.) The interagency review process would then establish the U.S. position for final negotiations.

- Prior to the departure of U.S. delegates to the April 1987 negotiations, OSTP and DoI did not support any reduction of CFC's beyond a freeze until a new major science review was conducted. Following the science review, the schedule and amount of any reduction would then be established.

- The schedule of future meetings related to the ozone protocol is shown in Attachment C.

United States Department of State

Washington, D. C. 20520

ATTACHMENT A

ACTION MEMORANDUM
S/S

November 28, 1986

TO: E - Mr. Wallis

FROM: OES - John D. Negroponte

SUBJECT: Circular 175: Request for Authority to Negotiate a Protocol to the Convention for the Protection of the Ozone Layer

ISSUE FOR DECISION:

Whether to authorize negotiation of a protocol to the Vienna Convention for the Protection of the Ozone Layer which would control emissions of ozone-depleting substances.

ESSENTIAL FACTORS:

The Problem

There is general scientific agreement that human activities are substantially altering the chemistry of the atmosphere in ways which threaten both the quantity and the vertical distribution of ozone. Certain chlorine and bromine substances, when emitted into the atmosphere, act as catalysts in a series of chemical reactions resulting in a depletion of ozone. Ozone depletion, by permitting greater quantities of harmful ultra-violet radiation to reach the earth's surface, will pose significant, even if currently difficult to quantify, risks for health and ecosystems. Given the complex chemistry and dynamics of the atmosphere, scientific uncertainties currently prevent a conclusive determination of safe levels of emissions. Because of the long atmospheric lifetime of these molecules, emissions affect the ozone layer for decades. The nature of the ozone layer requires international action if protective measures are to be effective.

The chemicals at issue for this protocol -- chlorofluorocarbons ("CFCs") and some bromine compounds -- have substantial economic and social value, being widely used in refrigeration, foam-blowing, fire-extinguishers, as solvents, and in most countries as aerosols. (Their use in non-essential aerosols was banned in the United States in 1978.) The U.S., Japan and EC countries currently account for about 90% of world production and consumption.

The International Process

The Vienna Convention for the Protection of the Ozone Layer, adopted under auspices of the U.N. Environment Program (UNEP) on March 22, 1985 and ratified by the United States on August 14, 1986, provides for cooperation in research, monitoring and information exchange. The Convention obliges the Parties to cooperate in taking measures to protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer. The Diplomatic Conference which adopted the Convention did not reach agreement, however, on a protocol to control emissions of ozone-depleting substances. The final act of the Diplomatic Conference called for a series of scientific and economic workshops on the atmospheric science, effects of ozone depletion, and alternative control measures, followed by resumption of negotiations, looking toward adoption of a control protocol in 1987 if possible. Negotiations are to resume December 1, 1986, with a diplomatic conference to conclude the protocol tentatively scheduled for April 1987.

The Domestic Setting

The Environmental Protection Agency, under terms of a court order approving a settlement reached in a lawsuit against the EPA Administrator by the Natural Resources Defense Council, must publish in the Federal Register by May 1, 1987 a proposed decision on the need for further domestic regulation of CFCs under Sec. 157 of the Clean Air Act. Compared to other environmental laws, the Act sets a low threshhold for required action by EPA: "the Administrator shall propose regulations for the control of any substance, practice, process, or activity...which in his judgment may reasonably be anticipated to affect the stratosphere, especially ozone in the stratosphere, if such effect in the stratosphere may reasonably be anticipated to endanger public health or welfare." In this connection, EPA is going through an extensive risk assessment process. A final EPA decision is required by the court order by November 1, 1987.

An important goal in seeking an early and effective international agreement (in addition to the goal of more effectively protecting the ozone layer) is to avoid disadvantage to U.S. industry as a result of unilateral U.S. regulatory action required by the Clean Air Act. Unilateral U.S. action in advance of international agreement could undercut the global control effort.

The principal producer- and user-industry group, the "Alliance for Responsible CFC Policy," has reversed its previous total opposition to controls, issuing a statement September 16, 1986 that "responsible policy dictates, given the scientific uncertainties, that the U.S. government work in cooperation with the world community...to consider establishing a reasonable global limit on the future rate of growth of fully halogenated CFC production capacity."

Proposed Position

Our approach in the international negotiations is intended to influence those negotiations to achieve the most effective international agreement possible. It does not prejudge the EPA Administrator's decision on domestic regulation.

Although considerable evidence exists linking certain chlorine and bromine substances to depletion of ozone, remaining scientific uncertainties prevent any conclusive statement concerning safe levels of emissions. As a result, the Administrator of EPA recommends an international risk management strategy which would give a strong incentive for rapid development and employment of emission controls, recycling practices and safer substitute chemicals. We should therefore seek a protocol that explicitly or in effect provides 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.

These elements would provide a desirable margin of safety against harm to the ozone layer while scientific research continues. At the same time, this approach would provide as

much certainty as possible for industrial planning in order to minimize the costs of reducing reliance on these chemicals, while allowing adequate time for adjustment.

The timing, stringency and scope of the phased reductions will have to be negotiated. We would promote a scheme which allows flexibility for each nation to determine how it will implement domestically its international obligation. In reponse to UNEP's invitation, we have prepared for discussion purposes the attached draft text for the operative paragraphs of a protocol.

We would favor setting national limits at or near current levels, in order to avoid increases in emissions from any Party. Elimination of most emissions would obviate the difficult question of equity -- the view that developing countries have a right to a fair share of world markets if a global limit on emissions is set: developing countries will have less reason to seek to expand use of products which will be obsolete in the forseeable future and they will benefit from the development of substitutes and of recycling and containment techniques.

We will seek to include in the protocol measures to regulate relevant trade between parties and non-parties in order to create incentives for nations to adhere to the protocol's emissions limits. These measures will have an ancillary effect of protecting U.S. industry from unfair competition. We will assure that any trade provisions included in the protocol are consistent with the General Agreement on Tariffs and Trade (GATT) and other aspects of U.S. trade policy.

We have undertaken extensive consultations with industry and environmental groups and will continue to do so as the negotiations progress.

Legal Authority and Funding

We expect that no additional legislation will be required to implement the provisions of a protocol specifying the regulation of ozone-depleting substances. As discussed in the attached legal memorandum, EPA has authority under the Clean Air Act to regulate ozone-depleting substances which may reasonably be expected to endanger public health or welfare and is currently conducting the risk assessment required to determine the need for additional regulation.

It has not yet been determined whether this protocol would be concluded as an executive agreement or as a treaty subject to the advice and consent of the Senate. This will depend, in part, on the content of the protocol and nature of the undertakings therein. The requirements of the National Environmental Policy Act (NEPA) and E.O. 12114 on Environmental Effects Abroad of Major Federal Actions are currently being considered.

Costs related to implementation of a protocol will depend on the requirements of the protocol. As a party to the Vienna Convention for the Protection of the Ozone Layer, we are already committed to the establishment of a Secretariat (in an existing international organization such as UNEP or WMO) and Conference of the Parties when that agreement enters into force. Any additional costs to administer the protocol will be incremental. We will seek to minimize the services required of the Secretariat and any requirement for funding to support such services, and we will make every effort to ensure that necessary support staff are provided within existing levels. EPA will be responsible for reports to the Secretariat, participation in technical reviews, and other commitments of a technical nature assumed under the protocol.

Financial support for a cooperative science program to form the basis for periodic review of the protocol provisions will need to be considered. EPA, NASA, NOAA and other technical agencies would participate in any cooperative science program resulting from the protocol with their own funds. The U.S. already has a dynamic and extensive program on both the atmospheric science and effects science, and as such is already by far the largest contributor to international scientific cooperation in these areas. The protocol may be a means to draw additional commitments from other nations to contribute to scientific efforts. It will be possible to assess the need for any additional U.S. support in this area only as the negotiations progress. We will consult with and obtain the approval of OMB regarding any commitment that could not be satisfied out of currently appropriated funds.

RECOMMENDATION:

That you authorize negotiation of a protocol to the Vienna Convention for the Protection of the Ozone Layer which would control emissions of those substances which are the most

significant contributors to ozone depletion in accordance with the principles outlined above. Subsequent authority will be sought to conclude any international agreement resulting from these negotiations.

Approve _____ Disapprove _____

Attachments:

A. Legal Memorandum
B. Draft protocol text

Circular 175: Protocol for Protection of Ozone Layer

Drafter: OES/ENH:SButcher
11/16/86 647-9312 0936T
Revised 11/26/86 16:00

Clearance: OES:REBenedick
OES/ENH:JRouse
L:EVerville
L/OES:DColson
L/OES:DKennedy
L/T:HCollums
L/EBC:GRosen
E:MBailey
EB:ASundquist
IO:LGalini
M/MO:ALaPorta
M/COMP:CCasper
EPA:BLLong
NASA:JFletcher
NOAA:JFletcher
Commerce:MTKelly
USTR:APorges/RReinstein
DPC:THarris
CEQ:CNee
DOE:EWilliams
OMB:JIrwin/DGibbons

ATTACHMENT B

~~LIMITED OFFICIAL USE~~

U.S. POSITION PAPER
UNEP OZONE LAYER PROTOCOL NEGOTIATIONS
THIRD SESSION: APRIL 27 - 30, 1987
GENEVA, SWITZERLAND

I. Background:

This is the third round of resumed negotiations under UNEP auspices on a protocol to control chemicals which deplete stratospheric ozone.

In the first session (December 1986) there was general agreement on the need for international measures to control emissions of ozone-depleting chemicals. However, differences remained over the scope, stringency, and timing of the controls, and other key issues (e.g., what to control, how to allocate national limits). The U.S. assumed a leadership role at this session, maintaining that the risk to the ozone layer warranted a scheduled phase-down of emissions of the major ozone-depleting chemicals. We also emphasized that the protocol should provide for periodic assessment and possible adjustment of the control measures, based on a periodic review of advances in scientific/technical knowledge.

In the second session (February 1987), and in discussions with the EC and other key participants since then, substantial progress has been made toward acceptance of the U.S. freeze-reduction approach. Other proposals which would seriously disadvantage the U.S. (e.g., proposals to allocate emissions limits on the basis of population and GNP) have been deflected. In addition, the EC, Japan, and possibly the USSR appear to be moving toward broadening coverage beyond CFCs 11 and 12, and have accepted the need for further reduction steps beyond the freeze. U.S. proposals for trade provisions and review mechanisms have also met with general agreement.

The third session is intended by the UNEP organizers and most other participants to resolve remaining issues, particularly the reduction process and schedule.

I. Overall Position:

The general objectives for the USG continue to be as delineated in the Circular 175 of November 28, 1986:

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

B. 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 C; and

C. 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.

III. Objectives for this Session:

A. Keep the negotiations focused on elaborating a protocol based on the U.S. freeze-reduction approach (now included in the Chairman's text), and resist efforts to resurrect other options (e.g., Canadian, Soviet).

B. Continue to press for as broad a coverage as possible of potentially major ozone-depleters (CFC 11, 12, 113, 114, 115, Halons 1211 and 1301).

C. Focus attention on defining a meaningful initial reduction step beyond a freeze. ~~(of sufficient magnitude to induce technological innovation).~~ ie

D. Try to narrow stringency and timing ranges in the Chair's control article text.

D. Maintain U.S. position on need for longer-term phasedown, consistent with overall negotiating goals (section II above).

E. ~~Maintain and~~ Elaborate earlier U.S. positions on trade and scientific assessment, which have received strong support.

F. Strive for progress on the LDC issue, emphasizing an approach that will encourage LDCs to join but does not undercut our long-range environmental objectives.

G. Work toward a mix of protocol elements which encourages as many producer and user counties as possible to become Parties (including Eastern Bloc countries).

IV. Positions on Specific Topics:

A. Scope of Chemical Coverage: The delegation should strive to have all the major potential ozone depleters (i.e., CFC 11, 12, 113, 114, 115, halon 1211 and 1301) subject to the control article reduction schedule. However, after the freeze, the delegation may consider putting 114, 115, and/or the halons under a different control regime, as a means of encouraging broader country participation or achieving other key U.S. objectives.

B. Stringency and Timing:

1. Freeze: Virtually all delegations have accepted that the first step should be a freeze at 1986 levels, and the delegation should continue to support this. The delegation should also strongly support a timing of one year after entry into force for the freeze (the EC proposal calls for a timing of 2 years after entry into force). The delegation should also explore the possibility of having the freeze take effect prior to entry into force of the protocol via, e.g., a voluntary commitment in a Diplomatic Conference resolution.

2. Reduction Schedule: The Chair's text calls for a 10-50% reduction (in brackets) for the second phase, in an unspecified period of time. The EC's opening position is for a 20% reduction within six years after entry into force, with an "automatic" trigger -- i.e., it would go into effect unless amended by a two-thirds vote of the Parties.

Within the context of the Circular 175 authority, the delegation should continue to explore various combinations of reduction schedules, ranging between the EC proposal and the U.S. proposed protocol text. The delegation should not at this meeting definitively agree to specific terms, but rather aim for a bracketed text, consistent with the Circular 175 authority, for further review in Washington.

C. Calculation of emissions: The delegation should continue to seek a formula to use as the basis for control which: does not undercut the control measures, encourages innovative practices and technologies in support of those measures, maximizes trade freedom among parties, does not put the U.S. at a competitive disadvantage vis a vis other parties, and encourages the broadest participation possible.

Thus, the delegation should continue to pursue for this session the "adjusted production" formula (P + I - E - D). However, if agreement on this is not possible, and there appears to be no movement (by the EC in particular) the delegation may explore other formulas, on an ad referendum basis, which meet the above criteria.

If there is significant opposition to including "-D" (amount destroyed) in the initial base year calculation, the delegation may discuss letting D = 0 for the first 1-3 years after entry into force of the protocol. The delegation should reserve its position on whether "permanently encapsulated" should be counted in this term.

D. Trade between Parties and Non-Parties: The delegation should actively support trade provisions which: (a)

protect countries party to the protocol from being put at a competitive disadvantage vis a vis non-parties; (b) create an incentive for non-parties to join the protocol; and (c) discourage the movement of production to non-parties.

Therefore, the delegation should continue to support the trade article developed at the last session, and resist attempts to weaken it. The delegation should seek the drafting improvements recommended by the interagency trade issues group (see attached paper).

E. Developing Countries: The delegation should continue to be open to an "LDC" provision, in order to encourage broader membership in the protocol. However, the delegation should stress that any form of exemption must not significantly undermine the environmental goals of the protocol.

F. Scientific Assessment: The delegation should insist that scientific assessment be an integral part of the protocol. The delegation should support having a legal drafting group take the various texts for assessment mechanisms now on the table, and draft a composite text which provides for possible adjustment of the controls based on regular and emergency review of scientific, technical, and economic information. The report of the scientific sub-group from the last session, and the text of Article IV of the U.S. proposed text (tabled at first session, and largely accepted by the EC), should be used as a focus for this exercise.

Regarding timing of the reviews, the delegation should support having regular CCOL-level reviews at least every two years, a major review (like the NASA/NOAA/WMO/UNEP et al assessment) at least every four years, and emergency reviews when called for by the Parties.

G. Entry into Force provisions: The draft protocol text (Article XII) calls for entry into force thirty days after deposit of nine instruments of ratification (etc.). At the first session, the USSR opposed the 9/30 format in favor of an 11/90 requirement. If this continues to be a major obstacle to Soviet concurrence on this article, the delegation may accept a 10/60 or 11/90 format.

The delegation should also seek to amend this article so as to ensure that the protocol enters into force only when a sufficient number of the major producer/user countries have deposited instruments of ratification (etc.). Thus, the delegation should propose that this article specify that of the number of instruments required for entry into force:

(a) 50% of total world consumption or production is represented; or

(b) a substantial majority (e.g. 75%) be from countries with an adjusted production (or whatever formula is agreed to) greater than a certain level (the delegation would agree to propose a specific value for this at a subsequent session).

The delegation should also seek to amend this article so as to avoid creating an incentive for some countries to delay entry into the protocol, while reaping the global environmental benefits of reductions by countries which became Parties at the outset. To this end, the delegation should seek to add the following at the end of paragraph 3 of this article:

"Any such Party shall assume all applicable obligations then in effect for all other Parties."

H. Other Legal/Institutional issues: The delegation should seek drafting improvements consistent with the substantive elements of U.S. position.

V. Other Issues:

A. Future Session: In the event that it is not possible to complete work on the protocol at this session (which is likely) the delegation should support UNEP convening a fourth session in early July.

B. Tactics: No members of the delegation shall advocate or indicate support for substantial negotiating element not in this position paper. All members of the delegation are required to obtain approval from the head of delegation before discussing with any person outside the delegation any fall-back position in this position paper.

C. Press: All press inquiries shall be referred to the head or alternate head of delegation, or their designee.

D. Budgetary Commitments: The delegation should not commit the USG to any activity which cannot be funded out of current appropriations.

Drafted by:

Jim Losey - EPA/OIA (382-4894)
Suzanne Butcher - State/OES (647-9312)
4/22/87

Clearances:

State:	Commerce:	CEQ:
EPA:	USDA:	OMB:
NASA:	Interior:	CEA:
NOAA:	DOD:	OPD:
USTR:	Justice:	OSTP:
DOE:	Treasury:	

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ATTACHMENT C

Ozone Protocol Schedule

June 8-19	UNEP Executive Council, Narobi
June 19	Comments on Chairman's Text (of April 30, 1987)
June 29-30	Meeting of Chairman's "informal" small group of representative delegation heads in Brussels
July 6-8	Meeting of lawyers and drafters at the Hague
Sept 8-11	Ad hoc group of experts, Montreal
Sept 14-16	Diplomatic Conference, Montreal

THE WHITE HOUSE

WASHINGTON

May 29, 1987

MEMORANDUM FOR NANCY J. RISQUE

FROM: BOB SWEET

SUBJECT: Ozone Strategy

Attached is a memorandum prepared by Jan Mares of OPD. It provides a good summary of the negotiations on stratospheric ozone to date.

The DPC met Wednesday, May 20 where Richard Benedick, Chief U.S. Negotiator, provided the Council with an overview of the issues that needed their guidance. At the close of the meeting, several questions were posed that required additional Working Group review. Since that time, there has been one Working Group meeting where Dr. Albritton, of NOAA, made an excellent presentation on the scientific aspects of stratospheric ozone depletion. (One of the questions the Council asked was some clarification about the "squishiness" of the science.) The Working Group then agreed to address several questions in a series of small sub-group meetings and reconvene on Tuesday, June 2, 1987 at 2:00 PM to hear brief presentations from EPA on the health effects of ozone depletion, cost/benefit analysis, whether halons should be included in the negotiation, pending court actions, and possible congressional activity.

This issue is extremely complex and requires the assimilation of a great deal of information by the Working Group members in order to provide an appropriate response to the Council's questions.

I believe a supplemental paper should be drafted following Tuesday's meeting answering the Council's questions and circulated to the members prior to the June 11 meeting.

I will be meeting with the presenters, Eileen Claussen of EPA, J.R. Spradley of NOAA, Steve Galebach of the AG's Office, Dave Gibbons of OMB, Jan Mares of OPD, and Richard Benedick of the State Department, to prepare for the Tuesday Working Group meeting and identify those issues that remain unresolved.

THE WHITE HOUSE

WASHINGTON

May 29,1987

MEMORANDUM FOR NANCY RISQUE AND GARY BAUER

FROM: BOB SWEET AND JAN MARES

SUBJECT: Stratospheric Ozone Protocol Negotiations

The Environmental Protection Agency, under terms of a court order resulting from a lawsuit by the Natural Resource Defense Council against the EPA Administrator, must publish in the Federal Register by December 1, 1987, a proposed decision on whether there is need for further domestic regulation, under the Clean Air Act, of chemicals which deplete the stratospheric ozone layer. These chemicals (certain chlorofluorocarbons (CFCs) and halons) are used for solvents, refigerants, foam blowing, fire extinguishing agents, sterilants, aerosal propellants, and other miscellaneous uses.

Compared to other environmental laws, the Act sets a low threshold for required action by EPA. The U.S. produces over one-third of the world's CFCs and halons. Because of the global nature of the problem of ozone depletion, unilateral U.S. regulatory action would not be as effective in protecting the ozone layer as uniform global action.

The U.S. has been participating in international negotiations since 1983 on this subject, leading to the 1985 Vienna Convention on Protection of the Ozone Layer. Negotiations on a protocol to this Convention resumed in December, 1986, and the protocol is scheduled for signing in September, 1987 in Montreal. An important U.S. objective in attaining an early and effective international agreement on ozone is to avoid disadvantages to U.S. economy resulting from unilateral U.S. action that may be required by the Clean Air Act.

The objectives for the U.S. government in the international negotiations were established in State Department Circular 175 of November 28, 1986, which was cleared on an interagency basis. These objectives include:

(a) a near-term freeze on the combined emissions of the most ozone-depleting CFC and halon substances;

(b) long-term scheduled reductions of emissions of these chemicals down to the point of eliminating emissions from all but limited uses for which no substitutes are commercially available (could be as much as 95%) subject to (c) and;

(c) periodic review of the protocol provisions based upon regular assessment of science, technology, environmental, and economic (STEE) elements, which could remove or add chemicals, or change the schedule or the emission reduction target.

The major unresolved issues concerning the international negotiations which are being discussed within the Domestic Policy Council Working Group process are:

(a) the extent of uncertainties on the science, assumptions, models estimating the effects, and costs and benefits relating to the CFC and halon emissions and their reduction; and

(b) whether the implications of the science, assumptions, and models warrant an international agreement now for a reduction in CFC's and halon emissions beyond a freeze at 1986 levels, subject to reversal if the STEE elements warranted reversal as opposed to providing a mechanism for agreeing in the future on reductions in emissions based on the STEE elements.

EPA, State, and some others appear to believe the analysis of the science, costs, and benefits justifies an international agreement that would provide for a scheduled 20% reduction in the CFC emissions and a further 30% reduction if the STEE elements warrented.

OSTP, Interior, and most others appear to believe an international agreement on a freeze of CFC and halon emissions is justified but believe any reduction steps beyond a freeze should be based on future reviews of STEE elements and subsequent agreements.

Two other major issues on which there is no apparent interagency disagreement but which have not been resolved because of their enormous implications, complexity, and difficulty are:

(a) how the trade and enforcement aspects of the protocol will be established so that the U.S. is not one of few parties complying with the protocol and doing so to its disadvantage, and

(b) how the less developed countries will be encouraged to participate in the protocol and give up the possibility of future significant use of CFCs whose replacements are currently forecast to be more expensive.

There is also no present agreement amongst the protocol countries on these two issues.

THE WHITE HOUSE

WASHINGTON

June 1, 1987

MEMORANDUM FOR NANCY J. RISQUE

FROM: BOB SWEET

SUBJECT: Ozone Planning Group Meeting

This morning I met with Richard Benedick (State), Eileen Claussen (EPA), Dave Gibbons (OMB), Jan Mares (OPD), J.R. Spradley (NOAA), and Steve Galebach. The purpose of the meeting was to review the agenda for the ENRE Working Group Meeting on Ozone, tomorrow, from 2:00 to 4:00 PM in Room 22 OEOB. The following presentations will be made:

- o legislative/legal issues -- Tom Hookano, Justice -- 15 minutes;
- o physical/climatic effects of ozone depletion -- Dr. Albritton, NOAA -- 45 minutes;
- o health effects resulting from ozone depletion -- John Hoffmann, EPA -- 1 hour;

The purpose of these presentations is to provide Working Group members a further understanding of the international negotiations to restrict certain chemicals thought to deplete the stratospheric ozone layer.

There will be a second Working Group meeting on Friday, June 5, 1987 at 2:00 PM to discuss the cost/benefit impact of an international agreement. CEA is preparing this paper in conjunction with EPA and OMB. This will complete the Working Group meetings and will allow time to prepare for the June 11 DPC meeting.

At the meeting this morning, Richard Benedick handed out the attached letter from Secretary Shultz to the Attorney General stating that, unless there are "compelling objections from some members of the Domestic Policy Council," the State Department "will continue to negotiate in conformance with the existing Circular 175 authority" and so notify negotiators from other nations this Friday, June 5.

Steve Galebach and I spent some time this afternoon considering the steps to take in light of this new development. Steve will brief the Attorney General at 9:00 AM, tomorrow, June 2, and recommend either a written response or a phone call to Secretary Shultz, in order to clarify the process. He will be in touch with you as soon as he receives guidance from the Attorney General.

In the meantime, I am proceeding on the assumption that the Working Group meetings will be held in preparation for a DPC meeting on June 11.

THE SECRETARY OF STATE

WASHINGTON

June 1, 1987

~~CONFIDENTIAL~~

Dear Ed:

I wanted you to know of my strong personal interest in the early and successful completion of an effective international treaty to protect the stratospheric ozone layer through reducing use of certain chlorofluorocarbons (CFCs) and halons. This is a subject which has attracted intense Congressional and media interest, and which many regard as the highest priority environmental issue on the global agenda.

International agreement is now within reach, largely on U.S. terms. The U.S. position was developed through intensive interagency deliberations leading up to, and following, the authority to negotiate (Circular 175) which was approved on my behalf by Under Secretary Allen Wallis last November. Implementing that authority, the U.S. delegation has succeeded through three difficult negotiating rounds in turning aside control proposals which would have been disadvantageous to the United States, and in gaining wide acceptance of the U.S. position.

I am now concerned, however, that within the Domestic Policy Council process, a few agencies are advocating positions which would, in effect, reopen the entire international negotiation, which is scheduled for completion in September at a Conference of Plenipotentiaries in Montreal.

I understand, and sympathize with, concerns over both scientific uncertainties and the possible economic impact of controls. However, Lee Thomas, who is charged with environmental protection by the President as well as by legislative mandate, has concluded, after over two years of analysis, that the U.S. position is a prudent approach to risk management. I agree with him. Although scientific certitude is probably unattainable, I am impressed by the growing international consensus on the threat to the ozone layer, largely due to research by our own NASA and NOAA. This consensus is manifest in the changed positions of both

The Honorable
Edwin Meese III,
Attorney General.

U.S. industry, which now officially advocates at least a global freeze on production of CFCs, and the European Community, which has proposed a freeze followed by a 20 percent automatic reduction, and which last month agreed to consider a further 30 percent reduction.

Based on contacts with industry, it appears that the 20 percent reduction (which would not come into effect until 1992-94) could be absorbed by U.S. industry utilizing existing alternative products and processes. While the additional 30 percent cut would require substitute products, the additional time frame for such reduction (8 to 12 years from now) would be within the "comfort zone" for the market system to provide incentives for the needed R & D.

I believe it would be inadvisable for us to delay the negotiations, or to appear now less concerned over protecting the ozone layer than the European Community and others who have followed our leadership. John Whitehead, Lee Thomas and I, American Ambassadors abroad, and senior officials on my staff, have all advocated the U.S. position in contacts with senior foreign officials. This has contributed to the evolution of policy in many countries. A perceived reversal by the U.S. risks an embarrassing loss of international credibility, as well as domestic political backlash. Moreover, it would risk the worst possible outcome from the standpoint of U.S. industry and consumers: namely, unilateral U.S. controls (added to our 1978 ban on CFCs for aerosol use) forced by the Clean Air Act, by court order, or by new legislation. There are already growing rumors in Congress and among public interest groups that the Administration is "backsliding" from its previously much-praised commitment to protect the ozone layer.

In order not to jeopardize the progress we have made in this major international negotiation, and following consultation with Lee Thomas, I propose to instruct the U.S. Representative to continue to negotiate in conformance with the existing Circular 175 authority. The objective is a strong and effective international agreement by September, containing provisions as summarized in the enclosure, which is consistent with the interagency position developed prior to the most recent negotiating round, in April.

I hope you will agree that this is a reasonable position. Only a protocol which provides for significant reductions in CFC's can prudently address the environmental risks, avert needless

criticism of the Administration and probable unilateral domestic controls, and provide the needed stimulus for industrial research into alternative products over a reasonable time period. The Administration will have the opportunity to review the negotiated protocol text before signature by our Government. If you have any questions concerning these provisions, I would be pleased to ask Assistant Secretary Negroponte to provide further details.

I propose to proceed on this basis unless you feel that this course of action is not feasible because of compelling objections from some members of the Domestic Policy Council. In that case, I propose that we, together with Lee Thomas, take this matter to the President without further delay.

Sincerely yours,

George P. Shultz

Enclosure:
Protocol Summary

~~CONFIDENTIAL~~

Protocol Summary

1. A freeze, at 1986 levels, on production/consumption of CFCs 11, 12, 113, 114 and 115, and Halons 1211 and 1301, to take effect one or two years after the protocol enters into force (EIF).

2. Periodically scheduled reductions of CFCs 11, 12, 113, 114 and 115, from 1986 levels, beginning with 20 percent two to four years after EIF, followed by an additional 30 percent approximately eight years after EIF, with the possibility of further steps as determined by the parties.

3. Regularly scheduled assessments of scientific, economic and technological factors, prior to any reductions, to enable the parties to adjust the reduction schedule and add or subtract chemicals.

4. An ultimate objective, subject to the assessments mentioned above, to eliminate substantially all potential threats to the stratospheric ozone layer from anthropogenic chemicals.

5. Strong trade, monitoring and reporting provisions to make the protocol as effective as possible.

6. An attempt to negotiate some system of voting which would give due weight to the currently significant producing and consuming countries.

U.S. Department of Justice
Office of the Attorney General

Nancy -

As we discussed.

Steve

Office of the Attorney General
Washington, D. C. 20530

2 June 1987

Dear George:

Thank you for your letter of 1 June 1987 concerning the international negotiations to protect the stratospheric ozone layer, currently under consideration within the Domestic Policy Council. I appreciate the progress that has been made by State Department and the Environmental Protection Agency in addressing this issue and negotiating toward an international agreement, and I understand your concerns about delay in the negotiations or dramatic change in the United States' negotiating position.

I believe we can accommodate necessary progress in the negotiations and also pursue on an accelerated basis the process now underway within the Domestic Policy Council, which will present this issue to the President in an expeditious and fair manner. As a result of the first Domestic Policy Council meeting on this topic on 15 May, several Council members inquired about the scientific facts and theories concerning ozone depletion, the anticipated effects on health and the environment, and a study of predicted costs and benefits. A series of working group meetings have been addressing these questions, in preparation for a meeting of the Domestic Policy Council on 11 June, and presentation to the President immediately thereafter.

The process now in place will allow the President to make the necessary decisions in a timely manner to guide our negotiators in the development of the strongest possible protocol, with thorough airing of views from all interested officers in the President's Cabinet. Lee Thomas is now a member of the Domestic Policy Council, and his views will continue to be fully considered, as of course will those of the Department of State.

I believe this approach will accommodate the needs of our negotiators as well as the President and the Cabinet.

Sincerely yours,

EDWIN MEESE III
Attorney General

The Honorable George P. Schultz
Secretary of State
Washington, D.C. 20520

DRAFT

MEMORANDUM FOR THE DOMESTIC POLICY COUNCIL

FROM: THE ENERGY, NATURAL RESOURCES & ENVIRONMENT WORKING GROUP

SUBJECT: Stratospheric Ozone

On May 20, 1987, the Council met to discuss the international protocol negotiations currently underway to limit emissions of ozone depleting chemicals.

Several questions were raised and the Working Group was asked to provide answers. The questions were:

* What are the legislative and legal impacts of an international ozone protocol?

* What are the most up-to-date scientific data on climatic and health effects of ozone depletion?

* What is the cost/benefit effect of an international treaty restricting ozone depleting chemicals?

The following information has been summarized by the Working Group after discussion of detailed presentations by experts in each area.

Legislative/legal

A pending lawsuit against the EPA seeks to compel the Administrator to promulgate regulations governing stratospheric ozone and to schedule such regulation. The court is not likely to act as long as international negotiations continue. If the international negotiations result in a scheduled reduction, the EPA would have sound defenses to any attempt by the plaintiff or the court to impose substantive emissions levels through the lawsuit. However, if there is no international agreement, it will be difficult to continue to argue for no domestic regulation, either in the existing lawsuit or in future litigation. EPA will be hard pressed to ask for more time to study the issue having initiated study of the issue eight years ago.

To date legislative action has been restrained by strong opponents of domestic legislation (such as Congressman Dingell). If the international negotiations for a protocol fail, there will be a strong push for a unilateral domestic reduction on Capitol Hill. Key Senators and Congressmen have been making statements

to this effect for months; recent press attention will only heighten that resolve. If the protocol called for a freeze or a freeze plus a 20 percent reduction, the legislative outcome is less certain though Congress would undoubtedly hold additional hearings to determine the need for further domestic reductions. If, on the other hand, the protcol mandated a freeze plus a 50 percent reduction, it seems likely that any pressure for additional regulation domestically would dissipate. Environmental groups, which were initially backing a 95 percent target, have agreed that a freeze plus 50 percent reduction would be a very positive beginning. Without a strong push from these groups, additional action, congressional action, at least in the near term, would be unlikely.

Climatic

Both satellite and ground-based observations have shown that ozone has decreased in the upper stratosphere by about seven percent during the last decade. Total column ozone has decreased by about 4 percent since 1980. It is not known whether natural phenomena or CFC and Halon emissions have caused these decreases.

Continued growth of CFC and Halon emissions at three percent per year (as consistent with economic projections) is predicted to yield, by the year 2040, a globally averaged overhead-column ozone depletion of about 6 percent and a stratospheric ozone depletion of about 50 percent. These depletion levels are much larger than natural variability and are, therefore, significant.

In contrast, a true global freeze of the sum of worldwide emissions of chlorine and bromine containing chemicals at the present rates is predicted to yield a maximum globally averaged column depletion of less than 0.5 percent by the year 2015 and a stratospheric depletion of 25 percent in the next 100 years. This stratospheric depletion would be much larger than natural variability and would, therefore, be significant. (Note that a "true global freeze" is not realistically attainable given expected compliance problems and the anticipated concessions to developing countries.) The theories and models upon which these predictions are based have uncertainty factors of two to three.

Health

Depletion of the ozone layer would result in increased penetration of biologically damaging ultraviolet radiation (UV-B) to the earth's surface. Based on the research completed to date, greater exposure to UV-B radiation has been linked to increases in the number of skin cancers and cataracts, suppression of the human immune response system, damage to crops and aquatic organisms, and increased formation of ground-level ozone (smog).

Based on epidemiological and ecological studies, dose-response relationshps were developed and reviewed as part of EPA's risk assessment. The extent of additional cancer deaths will depend on the degree of CFC control. If today's ozone level is maintained, the projected number of skin cancer deaths for White U.S. citizens born before 2075 would be 2,100,000. If the ozone level is decreased by 26 percent, there would be a projected increase in the number of skin cancer deaths of 1,200,000 over the base of 2,100,000. For an ozone level decrease of 7.7 percent (the likely result of a freeze included in the protocol), there would be an increase in skin cancer deaths of 253,000 over the case in which there was no ozone depletion. For an ozone level decrease of 6.1 percent (the likely result of a 20 percent reduction in emissions), there would be an increase in skin cancer deaths of 168,000 over the base. For an ozone level decrease of 3.2 percent (a 50 percent reduction), there would be an increase in skin cancer deaths of 89,000 over the base. This analysis assumes that the average age of the population remains constant, that exposure to sunlight (e.g., sunbathing) does not increase, and that no major improvements in treatment of skin cancer occur.

Recent studies have also shown a strong dose-response relationship between UV-B and the incidence of cataracts. Approximately 12.5 million cases in the U.S. could be averted by a protocol freeze for cohorts born by 2075. A 50 percent reduction in the major CFCs would result in approximately 16.3 million cases averted. While laboratory studies link UV-B to suppression of the human response system with possible implications for incresing the incidence of herpes simplex and leishmaniasis, research into possible broader implications has not been undertaken.

Limited studies have examined the effects of increased UV-B radiation on plants and aquatic organisms. Five years of field studies of soy beans provide the most extensive data and suggest potentially large losses in yield. Laboratory studies of UV-B effects on aquatic organisms show changes in community composition and reduced breeding season for phytoplankton and loss of larvae for higher order fish. Potential implications for the aquatic food chain have not been studied.

Cost/Benefit

A cost benefit analysis has been performed for the projected skin cancer deaths, skin cancer non-fatal cases, and cataracts health effects projected from increased UV-B radiation occuring at the projected baseline growth of CFC emissions and at the levels of emissions contemplated by a protocol freeze of emissions, a 20 percent reduction thereof, and a further 30 percent reduction thereof. Such analysis involves economic uncertainties and is not being presentd with respect to the benefits derived from

reducing the incidence of UV-B on plants, aquatic life, the human immune system, ground level ozone concentrations, polymer degradation, and global temperature because of the lack of sufficient quantitative experimental information. However, the benefits of these non quantifiably evaluated benefits are acknowledged to exist and to be additive to the other benefits which were valued and computed.

A range of assumptions was used in the analysis. The key variations in the assumptions were the valuations of lives saved (two million and four million were used) and the discount rates for the costs and the benefits. Four percent and six percent were used for the benefits and the costs were evaluated at the same rate.

Sensitivity analysis was performed with respect to the economic valuation of lives saved and the growth in their value over time.

The uncertainty in the underlying data from which the individual health effects were calculated was not separately estimated. The central values for health effects from the EPA risk Assessment Analysis were used in the cost benefit analysis. In order to bound the benefit assumptions by the uncertainty in the underlying health effects data, climate models, etc., the calculated benefits should be reduced or multiplied by a significant factor which could be as much as ____ percent reduction of a _____ fold multiplation.

The conclusions of the analysis, which are shown in table form in Appendix _____, are as follows:

--The benefits from a "protcol freeze" of the CFC emissions are substantially more than the costs over all plausible assumptions and ranges of uncertainty.

--The aggregate benefits of a "protocol freeze" plus a 20 percent reduction in CFC emissions are also in almost all plausible cases substantially in excess of the costs.

--However, the benefits of the 20 percent reduction alone are not in all cases in excess of the costs of the 20 percent reduction alone.

--The costs of the further 30 percent reduction appear in many cases to exceed the benefits from the further 30 percent reduction.

QUESTIONS FOR DECISION

DPC guidance is sought on the following six issues involved in the stratospheric ozone negotiations.

1. Should the U.S. continue to participate in international negotiations toward a protocol to control emissions of ozone depleting chemicals?

There is inter-agency agreement that international emissions control action is preferable to unilateral domestic control action for environmental and economic reasons. Unilateral domestic emissions controls are not likely to protect the ozone layer from depletion if other countries continue to emit ozone-depleting substances. In addition, unilateral domestic action would disadvantage U.S. industry in world markets. Moreover, it appears that legislative and judicial pressure may result in unilateral domestic emissions controls in the event negotiations toward an international control protocol fail.

The Working Group recommends that the U.S. continue to participate in international negotiations toward a control protocol.

2. Should the U.S. delegation continue to negotiate pursuant to the Circular 175?

The November 28, 1986 Circular 175 (approved by inter-agency review) authorizes the U.S. 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 percent);

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.

While there has been much discussion about the specific terms of a potential protocol, there is no disagreement with the general framework set out in the Circular 175. The Circular 175, however, allows for various approaches to a control protocol. The remaining issues address the desirability of these various approaches.

The Working Group recommends that the U.S. delegation continue to negotiate pursuant to the Circular 175.

3. What chemicals should the U.S. seek to include in the control protocol?

There is inter-agency agreement that a freeze on emissions at 1986 levels should cover all of the important ozone depleting chemicals including the Halons.

Any further reductions should exclude the Halons for national security reasons.

Note: The Departments of Commerce and Energy question the advisability of requiring further reductions for CFC 113 given its importance to the semi-conductor industry and to the nation's defense.

The Working Group recommends that the delegation seek a freeze on all ozone depleting chemicals including the Halons and CFC 113, and that any further reductions include all important ozone depleting chemicals except the Halons and CFC 113.

4. What emissions control provisions should the delegation seek regarding stringency, timing, future study and implementing mechanisms?

Points of Agreement:

A. All agencies support a freeze, at 1986 levels, on production/consumption of CFCs 11, 12, 113, 114, 115, and Halons 1211 and 1301, to take effect one or two years after the protocol enters into force.

B. All agencies support regularly scheduled assessments of scientific, economic, technological and environmental factors, prior to any emissions reductions, to enable to parties to adjust the reduction schedule and add or subtract chemicals.

Remaining Questions:

A. Should the delegation seek an automatic 20 percent reduction (subject to reversal upon 2/3 vote) to take effect four years after entry into force?

Yes -- EPA, Commerce, Justice - Lands Division, Energy, State, NASA, OPD

No -- OSTP

Other agencies?

B. Should the delegation seek an additional 30 percent reduction to take effect 8 to 10 years after entry into force and after a majority vote affirming the reduction at a designated future time?

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Yes -- EPA, Commerce, Justice - Lands, Energy, State, NASA, OPD

No -- OSTP

Other agencies?

C. Alternatively, should the delegation seek the additional 30 percent reduction to take effect 8 to 10 years after entry into force automatically unless reversed by a 2/3 vote?

Yes -- EPA, State

No -- Commerce, Justice - Lands, Energy, OMB, OSTP, OPD, USTR

Other agencies?

D. Should the delegation seek additional scheduled reductions beyond the cumulative 50 percent reduction achieved through the 20 and 30 percent reductions?

Yes -- EPA and State (even if reductions are automatic unless reversed by 2/3 vote)

No -- OSTP

Allow for future consideration -- Commerce, Justice - Lands, Energy, OMB, OPD

The Working Group recommends that the U.S. delegation seek a freeze at 1986 levels; regularly scheduled assessments of scientific, economic, technological and environmental factors for review in future reduction decisions; a 20 percent reduction to take effect four years after entry into force unless reversed by a 2/3 majority vote; an additional 30 percent reduction to take effect 8 to 10 years after entry into force if affirmed by a positive majority vote of the parties; and allowance for further reductions if confirmed by future majority votes of the parties.

5. What should be the U.S. objective regarding the control formula and trade provisions?

There is inter-agency agreement that the U.S. delegation seek to include in the protocol an effective formula to control emissions with accountability, the fewest possible restrictions on the flow of trade and capital among parties, the most favorable formula for U.S. industry, and strong monitoring and reporting provisions.

DRAFT

The Working Group recommends that the U.S. delegation continue to pursue this objective.

6. What should be the U.S. objective regarding participation and voting?

There is inter-agency agreement that there should be the widest possible global participation in the protocol. Limited concessions, such as a grace period for developing countries, may be necessary to gain widespread participation.

There is also inter-agency agreement that the U.S. delegation should seek to include a system of voting which would give due weight to the currently significant producing and consuming countries.

The Working Group recommends that the U.S. delegation continue to negotiate for widespread global participation and a voting system which would credit the major producing and consuming countries.

per Bob, will go
out at 9:30a
unless he hears
otherwise from you

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

June 5, 1987

MEMORANDUM

TO: Assistant to the President
and Cabinet Secretary

FROM: Assistant to the Secretary
and Director of External Affairs

SUBJECT: Secretary's Position on Chloroflourocarbons (CFCs)/
Stratospheric Ozone

Attached, for your information, is a copy of the Secretary's June 4, 1987, letter to Senator Tim Wirth which describes in detail the Secretary's position on CFCs/stratospheric ozone.

Also attached is a note from the Secretary to fellow Cabinet Officers to transmit to them a copy of this letter. We would appreciate your assistance in ensuring that Department and Agency heads, as well as appropriate White House staff, receive this information.

We are providing copies of the letter to Congressional sponsors of CFC/ozone legislation and other interested parties.

Please let me know if I can provide additional information.

Emily S. DeRocco

Emily S. DeRocco

Attachments

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.

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

Date 5/28/87

MEMORANDUM FOR Bob Sweet

FROM: Lee Thomas, Administrator (382-4700)

ACTION

__X__ FYI

_____ For your signature

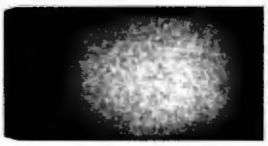
_____ As we discussed

_____ Please see me/call me

COMMENTS

This came to my attention yesterday morning. I don't know if you have a copy or not. It concerns me greatly.

bcc: Nancy Risque



May 26, 1987

MEMORANDUM FOR DONALD PERLMAN

BECKY NORTON DUNLOP

MARTIN SMITH

EILEEN CLAUSSEN

DR. BEVERLY BERGER

DAVID GIBBONS

DR. STEVE DE CANIO

FROM: JAN W. MARES

SUBJECT: Stratospheric Ozone Depletion; Effects and Costs of Depletion

In preparation for this afternoon's meeting at 5:00 p.m. in my office of the ad hoc "cost benefit" benefit working group of the DPC E & NR Working Group I have prepared for your review, correction and change the enclosed draft, tentative list of objectives with respect to various possible effects of stratospheric ozone depletion. The attachment also lists, in some cases, possible alternative ways to achieve the objectives as well as lists possible questions for evaluation of the cost of the specific effect at varying rates of CFCC growth. In each case that is to be considered the four CFC production cases to be evaluated should be (a) the EPA baseline case of about 2.5% annual growth of ozone depletion substances with the absence of controls; (b) a freeze by 1988-1990 at 1986 production levels of CFC's and Halons; (c) the same as (b) plus a further 20% reduction in CFC's after two to four years; and (d) the same as (c) plus a further 30% reduction in CFC's after another four to six years.

Section 157B of the Clean Air Act states in pertinent part: "The Administrator shall propose regulations for the control of any substance, practice, process, or activity (or any combination therof) which in his judgement may reasonably be anticipated to affect the stratosphere, especially ozone in the stratosphere, if such effect in the stratosphere may reasonably be anticipated to endanger public health or welfare."

I will leave it to others to determine whether this Section permits the Administrator to consider behavior changes or other protective or adaptive action by humans to respond to possible depletions of stratospheric ozone.

p.s. please excuse the self-typed attachment.

Possible Objectives and Costs of achieving Same related to Depletion of Stratospheric Ozone and Possible alternative ways of achieving such objectives

I. Reduce skin cancer cases and deaths

A. Cases to evaluate the costs with respect to the four CFC emission case possiblities

(i) lives currently in being

(ii) lives currently in being plus those born during the next 15 to 25 years;

(iii) EPA base case of deaths through 2165

B. Alternative reduction strategies whose costs should be "guestemated" but which may reduce the base line incidence of skin cancers

(i) Reduce exposare to UV(B) through (a) sunscreens, (b) protective clothing or (C) behavior change like staying out of sun or using warning device

(ii) Develop "cheaper", more effective medical practic es to remediate cases of skin cancer

II. Reduce the potential adverse impact on the human immune system from an increase in UV(B)

A." G uestimate" with ranges the increase in deaths from inrections diseases that would occur under the four CFC emission cases due to the adverse affect on the human immune system . This "guestimate" should be done with respect to (i) lives currently in being, (ii) livers currently in being pluse those born durin the next 15 to 25 years and (iii) lives existing in EPA's base line case through 2065

B. Alternative strategies to reduce the adverse affect on the human immune system from an increase in UV (B) whose "costs" should be guestimated include:

(i) REDUCE EXposure to UV(B) through (a) sunscreens, (b) protective clothing or (c) behavior change;

(ii) Develop cheaper, more effective medical practices to deal with those diseases which the human immune system protects against.

III REDUCE THE POTENTIAL ADVERSE IMPACE ON PLANT LIFE of an increase in UVBB)

A. Use a more conservatige assumption tnan in the soybean study, namly that 1/-, not 2/3 of the cultivars, are adversely affected by UV(b) to the same extent as soybeans and that no cultivars are benefiteed by increased UV(B) and guestimated the impact either per year or cummulatively during the next 25 years of the four CFC cases

B. Alternative strategies to be "costsed out" include:

(i) Identify and further develop species of clutivars that are resistant to UV(B)

(ii) Since the indidence of UB*VB) varies on the globe today, change the use of seeds for various cultivars gradually as the UV(B) intensity Changes

IV Reduce the potential adverse effect on Acquatic Life

A. Based on the anchovey analysis assume that commercial and recreational fishing are adversely affected to 1/100th the similar amount as the anchovey's for simialar increased UV(B) exposure and guestimate the impact on such fishing either per year or cummulatively during the next 25 years of the four CFC cases.

B. No apparant alternative protection strategies exist

V.Reduce the potential adverse /ffe/ effect of increased cataracts in humans

A. Estimate the added number and/or cost of correction of cataracts to be expected in each of the /three/ four CFC cases for the following /pe/ groups of people:

(i) lives currently in being

(ii) lives in being plus those born during the next 15 to 25 years and

(iii) lives existign in EPA's base /case/ line case through 2065

B. Alternative Strategies whose costs should be "guestimated" include:

(a) Provide sunglasses to everyone

(ii) Provide otern /more/ protective measurss, liek a hat and urging people to stay out of the sun

(iii) develop /thar/ "cheaper" /corrective/ medically corrective proceedurs

VI REDUCE Potential Adverse Effect on Polymers

VII REDUCE potential for increased ground based ozone

VIII Reduce potential for climate change measured by global temperature change

BRIEFING FOR OMB ON

U.S. INTERNATIONAL AND DOMESTIC STRATOSPHERIC PROTECTION PROGRAM

PREPARED BY

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR AND RADIATION

MARCH 24, 1987

JUSTIFICATION OF U.S. POSITION ON STRINGENCY

PARTIAL LIST OF REDUCED DAMAGES

Baseline Growth	Reduced Skin Cancer Cases (Millions) b/	Reduced Skin Cancer Deaths (Thousands) c/	Reduced Polymer Damage d (Millions $)	Reduction Projected Global Warming h/ (°C)	Reduction in Projected Sea Level (cm)	CASE STUDY RESULTS: Reduced Potential Food Loss g/ (Soybean Example)	CASE STUDY RESULTS: Reduced Potential Ozone (Smog) Increase f/	CASE STUDY RESULTS: Reduced Potenti Aquati Damage Anchov Examp
U.S. POSITION: 25% Phase Down i/								
2.5% through 2050	55	1,100	N/A	1.1	9	>15%	>20%	>25
3.8% through 2050	120	2,500	N/A	2.6	20	>15%	>20%	>25
1.2% through 2050	8	140	N/A	0.5	4	5%	5%	
E.C. POSITION: 20% Phasedown k/								
2.5% through 2050	50	975	N/A	0.9	7	10%	15-20%	>25
FREEZE: l/								
2.5% through 2050	45	900	N/A	0.8	6	10%	15%	20

(Notes on following Page)

JUSTIFICATION OF U.S. POSITION ON STRINGENCY

(NOTES)

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a) Baseline annual growth in the use of ozone-deleting substances in the absence of controls. No growth assumed after 2050 The freeze is analyzed assuming a freeze at 1986 levels, starting in 1990; 80% compliance among developed nations; developing nations allowed to grow to the current global use per capita; 80% compliance assumed among developing nations compounds covered include: CfC-11, -12, -113, Halon 1211, 1301.

b) For people alive today and born by 2075 in the U.S. Total includes basal cell, squamous cell, and melanoma skin cancers Based on DNA-damage actions spectrum. Values are underestimated because increasing baseline rate and population aging a not considered.

c) For people alive today and born by 2075 in the U.S. Total includes basal cell, squamous cell, and melanoma skin cancers Based on DNA-damage actions spectrum. Values are underestimated because increasing baseline rate and population aging a not considered.

d) For PVC in the U.S. only. Damage to other polymers may be expected.

e) Estimate based on extrapolation of Essex, a sensitive cultivar. Actual damage expected to be lower since only 2/3 of th cultivars are sensitive.

f) Based on a single case study and chamber study. Results in process of verification. Number shown is average for three case study cities.

g) Based on a single study. Assumes 10 meter mixed layer. If larger or smaller, results could be large.

h) Based on 3°C climate sensitivity. Equilibrium warming.

i) Based on 3°C climate sensitivity and diffusivity of 1.7 cm^2/sec. Contributions from Antarctic discharge are not modelec as temperature sensitive.

j) Coverage of all fully-halogenated compounds. Developed nations: 1990 = freeze at 1986 levels; 1996 = 50% reduction; 20 = 95% reduction; 80% compliance. Developing nations allowed to grow to current global average use per capita (80% compliance).

k) Coverage of CfC-11, -12, and -113. Developed nations: 1990 = freeze at 1986 levels; 1996 = 20% reduction; 80% compliance. Developing nations allowed to grow to current global average use per capita (80% compliance).

l) Coverage of CfC-11 and -12. Developed nations: 1990 = freeze at 1986 levels; 80% compliance. Developing nations allov to grow to current global average use per capita (80% compliance).

SAB-EC-87-025

REVIEW OF EPA'S

AN ASSESSMENT OF THE RISKS OF STRATOSPHERIC MODIFICATION

BY THE

STRATOSPHERIC OZONE SUBCOMMITTEE

SCIENCE ADVISORY BOARD

U. S. ENVIRONMENTAL PROTECTION AGENCY

March, 1987

Effect	State of Knowledge	Potential Global Impact
Skin Cancer	Moderate to high	Moderate
Immune System	Low	High
Cataracts	Moderate	Low
Plant Life	Low	High
Aquatic Life	Low	High
Climate Impacts*	Moderate	Moderate
Tropospheric O_3 and H_2O_2	Moderate	Low
Polymers	Moderate	Low

* Contribution of O_3 to climate changes, including sea level rise

A principal use of this table could be as a guide to research planning, especially in conducting research for effects where current knowledge is low and potential global impacts are high. Such a table is, however, an imperfect guide for allocating research dollars, and is subject to change as new information becomes available.

The Subcommittee does not know, based on current knowledge, whether effects with a potential global impact designated as "high" with a state of knowledge designated as low will occur but, if such effects are experienced, they could be significant.

e) The Executive Summary should devote less emphasis to climate change and its effects, such as sea level rise. It should focus, instead, on the contribution of changes in ozone concentration to climate modification, rather than reviewing all the radiatively-active gases that affect climate. We recognize that the ozone depletion and global warming (greenhouse) issues are linked; nonetheless, the emphasis in this document should be placed on stratospheric, rather than tropospheric processes.

IV. Specific Comments on Individual Chapters

Chapter 1: Goals and Approach

This short introductory chapter was not formally reviewed. The