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New File: Technmsh Corp.

NEWS FROM

U.S. Senator Al Gore



(D - Tennessee) SR 393 Russell Building, Washington, D.C. 20510 (202) 224-4944

DATE 1-4-89

TO JACKSON OFFICE

FROM RICK ADCOCK

PAGES including cover 8

SUBJECT Memo for Al

FOR FRIDAY MEETING

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M E M O R A N D U M

DATE: January 4, 1989

TO: Al

FROM: Rick

SUBJECT: Techumseh (Paris, TN) meeting

I am told by Jackie that you'll be meeting privately tomorrow with representatives from Techumseh Corporation. This memo gives background for that meeting.

Techumseh Corporation

Techumseh is one of the world's largest manufacturers of compressors, which in turn are used in refrigeration and air conditioning equipment.

The compressors help to create the cooling effect in a refrigerator by compressing a "working fluid", which then cools as it expands downstream of the compressor. That "working fluid" is a CFC. CFC-12 has traditionally predominated this application, but it (and CFC-11) are on top of the list for phaseout under the Protocol, and all legislation in Congress.

The initial alternative to CFC-12 that the industry considered was CFC-22 (with an ozone-depletion-potential -- ODP -- that is 5% of CFC-12), but CFC-22 is being considered by EPA for a 2030-time-frame phaseout (recall Watson was concerned that chlorine levels would continue to grow in the atmosphere if we didn't eventually also phase out low-ODP CFCs like 22), and is also on phaseout lists of bills in Congress. (Our bill places 22 on the 10-year phaseout schedule; it is also listed for regulation in the Chafee and Leahy bills -- Leahy calls for a year-2000 phaseout.) The industry has recently looked to CFC-134a (ODP is 0), but there are problems stemming from its low energy efficiency (see more on this below).

The properties of the working fluid (CFC) directly influence the cooling efficiency of the refrigerator. And, the better the cooling efficiency, the less energy required to run the refrigerator. The less energy required, the less CO2 produced in generating the electricity to run the refrigerators of America. Thus, we have a direct conflict between the ozone-depletion-induced need to phaseout CFC-12

(currently the most energy-efficient CFC for compression-cycle refrigeration), and the need to increase the efficiency of U.S. appliances (including refrigerators) for the purpose of reducing greenhouse gas emissions.

DOE has been writing regulations for increased appliance energy-efficiency (see "DOE Regulations" below), while EPA has been increasing the list of CFCs to be phased out because of ozone-depletion concerns.

Techumseh, and other companies, are caught in the middle. There complaint is valid. They are trying to engineer more efficient compressors (and refrigerators) because of the DOE regulations, and a critical engineering parameter is the working fluid. Change the working fluid, and you need to change the design of the compressor and refrigerator as well. The DOE regulations will specify the efficiency that their product must meet; Techumseh asks that the allowable working fluid ODP be specified as well. (They claim that they thought a 0.05 ODP -- CFC-22 -- would be ok as a working fluid, only to learn after investing in a transition to CFC-22 that it was unacceptable.)

Working fluids composed of ternary blends (three CFCs blended together) are being developed but, because they use CFC-22 in the blend, their future is uncertain. As mentioned above, CFC-22 is not currently being considered for near-term phaseout by the Protocol. However, EPA is currently considering a 2030-time-frame phaseout, and some bills in Congress call for an earlier phaseout -- our bill has it on the 10-year phaseout schedule. CFC-152a is promising, but it is flammable, and toxicity studies have not yet been done. CFC-134a (contains no chlorine, so a zero ODP) is being developed particularly for auto air conditioners. But, 134a is not as energy-efficient as CFC-12, so if used by the appliance manufacturers, they will not meet DOE efficiency regulations. Finally, appliance manufacturers claim that even if an adequate substitute were developed today, it would take until 1996-98 to scale up production and ensure supply.

Company employees attended your last open meeting in the area and voiced their concerns. Be aware that the employees may not understand the subtleties that I've just outlined (the energy-efficiency/ozone conflict), and may have been prompted by management to deliver a simpler message: "don't speed up the phaseout schedule now in the Protocol." The management IS aware of the subtleties, and indeed only cares about the phaseout schedule to the extent that the current EPA/UNEP/Congressional practice of adding chemicals to the phaseout list has -- and may continue to -- force cancellation of product changes after significant investment has been made in those changes.

DOE Regulations

The National Appliance Energy Conservation Act of 1987 established appliance efficiency standards. Phase I standards under the Act kicked in on January 1, 1990. Phase II standards kick in three years later, in 1993.

Thus, DOE's regulations requiring increased energy efficiency in home appliances are now in effect. AHAM informs us that because they can continue to use known CFC's, manufacturers will be able to meet 1991 requirements. However, it is uncertain whether the regs can be met beyond that time if CFC's currently in use are off-limits.

The AHAM-EPA-DOE consortium, and the entire industry for that matter, are working on several alternatives to increase efficiency -- new insulation, new working fluids, etc. However, they say that no alternative working fluid is really satisfactory at this point.

Recommendation

I spent over 45 minutes on the phone yesterday with Gordon McPherson, Manager of the Techumseh plant. He will host you when you visit the plant tomorrow. It was a very good, positive conversation. Good relations established. Gordon and I agreed to: (1) disagree over whether CFCs deplete ozone and whether ozone depletion is a bad thing (Gordon claims to have been influenced by Fred Singer on this -- Gordon said that Singer had written that ozone depletion may not turn out to be as bad as some think... he's turning out to be a real Teller for the 1990s); and (2) agree that the energy-efficiency/CFC phaseout conflict is a real problem for his company, and that they are right to cry for help. That stance is my recommendation to you for tomorrow's meeting. Try to avoid a debate focused only on the CFC phaseout, and focus instead on the energy-efficiency/CFC phaseout uncertainty problem that the company faces. Those companies DO need some sort of clear signal concerning which CFCs they can use in their equipment, with assurances that -- barring extraordinary circumstances -- the chosen chemical won't be phased out during the equipment's lifetime.

Eventually, in my opinion, only a 0 ODP is acceptable. And that goal has to be met ASAP. The industry has demonstrated already that if it isn't pushed, it will not make the effort required to wean itself off of ozone-depleting chemicals. Now, however, it feels the pressure and seems to finally be moving in the right direction. And it now faces a near-term problem in improving energy efficiency while weaning itself off of ozone-depleting CFCs.

One can argue that if the CFC manufacturers had faced ozone depletion responsibly a decade ago, then other industries dependent on CFCs -- like the refrigerator manufacturers -- would not be in the binds that they now find themselves.

I told Gordon that I was aware of the problem, and mentioned how you and I had, between the two of us, met with representatives of most of the refrigerator manufacturers to discuss the conflict. I told him that I was sympathetic to the problem, and would continue to work on my end to push for some sort of resolution. Gordon did not mind the CFC phaseout per se, just the lack of certainty over which CFCs are going to be allowed on the market in coming years, so that they can invest safely in equipment redesigns.

I also mentioned the EPA-DOE-AHAM (Association of Home Appliance Manufacturers) consortium that you were a Senate sponsor of (recall press conference with Hollings, AHAM, EPA, and DOE last fall -- see press release that follows). That consortium is focusing more on research to develop alternatives, but could also be a forum in future for streamlining otherwise conflicting demands being placed on the appliance industry.

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Home Appliance NewsLine

An **AHAM** Bulletin to Editors

FOR RELEASE: September 21, 1989

Contact: Marian Stamos
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REFRIGERATOR AND FREEZER MANUFACTURERS FORM RESEARCH CONSORTIUM TO FIND ENVIRONMENTALLY-SAFE CFC ALTERNATIVES

WASHINGTON, D.C. — Seven household refrigerator and freezer manufacturers have formed an unprecedented industry-government technological partnership to identify acceptable chlorofluorocarbon (CFC) substitutes, the Association of Home Appliance Manufacturers (AHAM) announced at a Capitol Hill press conference today.

The Consortium's goal is to identify safe, reliable and energy efficient replacement candidates in two to three years, so that refrigerator manufacturers can stop using CFCs in production as soon as possible.

The research partnership, called the *Appliance Industry-Government CFC Replacement Consortium, Inc.* is a wholly-owned subsidiary of AHAM, an international trade association representing appliance manufacturers and suppliers to the industry.

The participating refrigerator companies are Admiral (Maytag Corporation), Amana Refrigeration, Inc. (Raytheon Company), GE Appliances, Sub-Zero Freezer Company, W.C. Wood Company Limited, Whirlpool Corporation and White Consolidated Industries. Also participating thus far are the U.S. Department of Energy (DOE), the Environmental Protection Agency (EPA) and several compressor manufacturers and chemical suppliers to the industry.

"Through this united research effort, our industry will be able to accelerate

(MORE)

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Association of Home Appliance Manufacturers 20 North Wacker Drive Chicago, Illinois 60606 312/984-5800

the pace and maximize the efficiency of its search for workable CFC alternatives," explains Tom Young, Consortium vice president for administration.

"This is a highly-disciplined and coordinated program designed to create as fast as possible a data base adequate for each manufacturer to determine the best CFC substitutes for its products," said Young.

Operating through technical committees, the Consortium will analyze product design options and replacements for both CFC 11 — the blowing agent used in rigid foam insulation in the cabinet walls and doors, and CFC 12 — the refrigerant in the sealed refrigeration system.

These committees are currently evaluating a combined total of 14 potential substitutes.

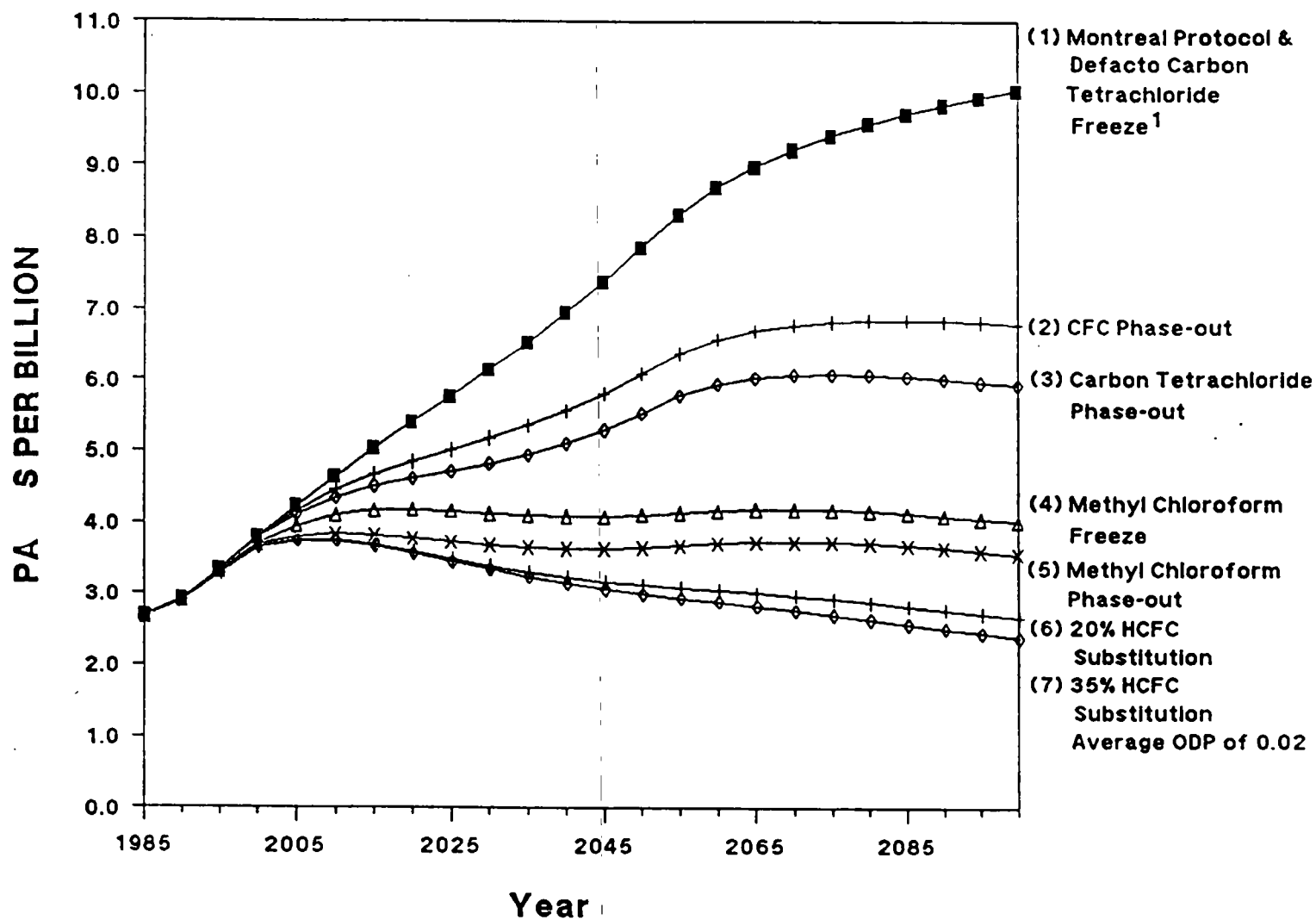
Once acceptable replacement candidates are identified, it will take several years to make the manufacturing design and retooling changes necessary to accommodate the CFC substitutes -- that is, to make safe, energy-conserving appliances that provide consumers with reliable service for 15 years or more and at a production pace of about 24,000 units per day.

"Our industry accounts for only 4% of total free world CFC use, but even a little is too much," observed Robert Holding, president of both AHAM and the Consortium. "We aim to get this done right and expeditiously."

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SUMMARY REDUCTIONS - POLICIES NEEDED TO REDUCE CHLORINE CONCENTRATIONS TOTAL CIX CONCENTRATIONS 1985 Through 2100



Assumptions:

- o HCFCs Capture 50% of What CFC Market Would Have Been (Except Curves 6 and 7)
- o 100% Global Participation

Notes:

¹ In earlier drafts, (including EPA's presentation in Helsinki to Montreal Protocol parties (1989)), these policies (Montreal Protocol and Carbon Tetrachloride Freeze) were shown as two separate controls. In this analysis, the two are combined based on the assumption that CFC producers will not "dump" carbon tetrachloride feedstock (that would have been used to produce CFCs) on global markets and that independent carbon tetrachloride use will not in fact increase. While possibilities exist for an increase in use to occur, such growth is unlikely given the awareness of carbon tetrachloride's potential contribution to stratospheric ozone depletion.