# THE FUEL SHORTAGE AND THE CLEAN AIR ACT

## HEARING

BEFORE THE

SUBCOMMITTEE ON
AIR AND WATER POLLUTION

OF THE

COMMITTEE ON PUBLIC WORKS
UNITED STATES SENATE

NINETY-THIRD CONGRESS

FIRST SESSION

ON

**S. 2680**

A BILL TO AMEND THE CLEAN AIR ACT, AS AMENDED

NOVEMBER 12, 1973

**SERIAL NO. 93–H26**

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# THE FUEL SHORTAGE AND THE CLEAN AIR ACT

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MONDAY, NOVEMBER 12, 1973

U.S. SENATE,
COMMITTEE ON PUBLIC WORKS,
SUBCOMMITTEE ON AIR AND WATER POLLUTION,
*Washington, D.C.*

The subcommittee met at 9:30 a.m., pursuant to call, in room 4200, Dirksen Senate Office Building, Hon. Edmund S. Muskie (chairman of the subcommittee) presiding.

Present: Senators Muskie, Clark, Stafford, McClure, and Domenici.

## OPENING STATEMENT OF HON. EDMUND S. MUSKIE, U.S. SENATOR FROM THE STATE OF MAINE

Senator MUSKIE. The subcommittee will come to order.

Mr. Train, I know that you are under some pressure of time so we will proceed.

I have a brief statement that I will read in order to put the legislation in context. I understand that Senator Randolph also has a brief statement which has not arrived yet.

On Friday, I introduced legislation, S. 2680, to facilitate the Administrator's ability to grant variances from clean air requirements to deal with the fuel shortages this winter. This bill, like the variances it authorizes, is for a limited duration.

It is intended that the variances, like the authority, cease to exist after 6 months. The bill recognizes that the fuel crisis may extend beyond the winter season. It provides the Administrator with new authority to act to accelerate changes in Clean Air Act implementation plans.

This authority, which would permit extension of final compliance dates until 1977, is intended to allow the time necessary for affected utilities and industries to install available stack gas emisison controls.

It recognizes that utilities and industries which chose fuel switching rather than technology will need more time to meet new requirements.

In order for this legislation to be effective and to deal with the continuing shortage, it will be essential for the President to make a determination as to the extent of shortage of low-sulfur fuels.

The President cannot wait until the 6 months variance provided in the bill expires. The President must, within 60–90 days, indicate to the Administrator the extent of the shortage between the supply and the demand for low-sulfur fuels.

Immediate action by the President, taken with the same kind of speed which he has proposed Congress take on his legislation, will maximize the availability of alternative fuel resources and minimize the impact on clean air.

The President, the Administrator, States and communities, and utilities and industries must begin to rely on abundant and available domestic fuels—coal.

Clean air advocates and environmental regulators must accept the interim disruption of clean air compliance schedules in order to assure the long-term goal of clean air.

We can no longer rely on fuel switching as a clean air alternative. Continuous emission controls through the application of technology must be the means we adopt. The legislation before us today, while imperfect in its language, is intended to accomplish this purpose.

[Mr. Muskie's bill, S. 2680, follows:]

93D CONGRESS
1ST SESSION

# S. 2680

IN THE SENATE OF THE UNITED STATES

NOVEMBER 9, 1973

Mr. MUSKIE (for himself, Mr. BAKER, Mr. BIDEN, Mr. BUCKLEY, Mr. BURDICK, Mr. CLARK, Mr. DOMENICI, Mr. GRAVEL, Mr. MCCLURE, Mr. RANDOLPH, Mr. WILLIAM L. SCOTT, and Mr. STAFFORD) introduced the following bill; which was read twice and referred to the Committee on Public Works

# A BILL

To amend the Clean Air Act, as amended.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 SECTION 1. Section 110 of the Clean Air Act, as
4 amended (84 Stat. 1683), is amended by adding the follow-
5 ing new subsection:
6 "(g) (1) During the period commencing November 15,
7 1973, and ending May 15, 1974, the Administrator is au-
8 thorized to temporarily suspend any emission limitation,
9 schedule, or timetable for compliance contained in any Fed-
10 eral, State, or local law, regulation or requirement adopted
11 under this Act as to any fuel burning stationary source which

1 is or would be in violation of such requirement due to actions
2 ordered by the President under the National Emergency
3 Fuels Act, unless the Administrator determines that such
4 suspension will present an imminent and substantial endan-
5 germent to the health of persons. Any suspensions given
6 under this subsection shall be exempted from any procedural
7 requirements set forth in this Act or any other provision of
8 local, State, or Federal law, and the granting of such suspen-
9 sion shall not be subject to judicial review nor to any proceed-
10 ing under section 304 of this Act. Nothing in this subsection
11 shall affect the power of the Administrator to deal with
12 sources presenting an imminent and substantial endanger-
13 ment to the health of persons under section 303 of this Act.
14 "(2) Upon enactment of this paragraph, the Adminis-
15 trator shall undertake and, after public hearings and within
16 four months, complete an assessment of the probable effect of
17 anticipated fuel shortages on the ability of sources to com-
18 ply with State implementation plans to achieve the national
19 ambient air quality standards within the deadlines estab-
20 lished pursuant to this Act. Such report shall be submitted
21 to the Congress and shall, if the Administrator determines
22 that fuel shortages will interfere with the achievement of
23 the standards within the statutory deadlines, contain recom-
24 mendations of changes in the Act which will accomplish the

1 purpose of the Act in the most expeditious and practical
2 manner.".
3 SEC. 2. Subsection (a) of section 110 of the Clean Air
4 Act, as amended (85 Stat. 1681) is amended by adding the
5 following new paragraph:
6 "(5) Whenever the Administrator determines that a
7 source or sources of pollutants for which national ambient
8 air quality standards have been promulgated will not be able
9 to comply with applicable emission limitations through the
10 use of fuels because, in the determination of the President,
11 such fuels are likely to be unavailable due to a continued
12 shortage of fuels, he shall notify the State. If revisions of the
13 implementation plan and local or State regulations necessary
14 to insure the attainment of primary ambient air quality
15 standards protective of public health as expeditiously as
16 practicable are not submitted and approved by the Adminis-
17 trator within one hundred and twenty days after such
18 notice, the Administrator is authorized to require or pro-
19 mulgate legally enforceable compliance schedules for such
20 source or sources, which schedules shall specify continuous
21 emission reduction measures to be used to achieve compli-
22 ance, interim steps of progress, and reasonable interim con-
23 trol measures to minimize the emissions of pollutants pend-
24 ing final compliance with applicable emission limitations.

1 Actions taken under this paragraph shall be taken in accord-
2 ance with procedures prescribed in this Act and shall be
3 subject to judicial review in accordance with the Act: *Pro-*
4 *vided, however,* That the final date for compliance for
5 sources regulated under this section may not extend be-
6 yond July 1, 1977.".

Senator MUSKIE. Senator Clark, have you a statement?

Senator CLARK. I have no statement, Mr. Chairman.

Senator MUSKIE. Then we will proceed with your testimony, Mr. Train. We appreciate your making yourself available this morning. It is our pleasure to welcome you for the second time in a very few days.

## STATEMENT OF HON. RUSSELL E. TRAIN, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY ROBERT L. SANSOM, ENVIRONMENTAL PROTECTION AGENCY

Mr. TRAIN. Thank you, Mr. Chairman. I appreciate this opportunity to discuss with you a matter of most compelling national concern, the energy emergency which we face and which carries with it profound implications for each of us. I may say, Mr. Chairman, I do not have what I would call a fully prepared statement this morning.

I know copies have not been distributed to the committee, and for that I am sorry. I do have what I call a rough statement which I will proceed to read through, if I may.

Senator MUSKIE. That will be fine.

Mr. TRAIN. Let me just interject at this point that I particularly welcomed your comment with respect to fuel switching. I think it is becoming abundantly clear, if it was not clear before, that the long-term solution to meeting environmental standards does not lie with fuel switching but, rather, with the installation of control technology, and the fact that increasingly clean fuel simply will not be available, making the installation of such technology I think now a national imperative.

One comment on this matter; I think it is a mistake to consider that all of the fuel switching from coal to oil and to national gas that has gone on in recent years is entirely the result of environmental standards, and particularly the Clean Air Act.

I think there has been a tremendous economic incentive for switching that goes well beyond simply the environmental factors with which we are so familiar. I think it is important to keep the switching in that kind of perspective.

I believe it is clear from the President's message to the Nation last week, and from recent actions of the Congress, that we have the determination and the capability to meet the emergency and to deal with it prudently and effectively.

I feel that the draft bill before this committee is a tribute to its determination to squarely meet this problem in what I think is a thoughtful and reasoned manner. I refer to an unnumbered print which I have available to me.

Senator MUSKIE. That is S. 2680. I guess we haven't gotten printed copies yet.

Mr. TRAIN. We, along with the committee, fully recognize the compelling circumstances occasioned by this winter's shortage of oil supplies.

Our society has been accustomed to a supply of cheap, abundant energy. During the coming winter months, we find that this supply will be severely curtailed, with the precise magnitude of the cutback still undetermined.

In such circumstances, the Environmental Protection Agency believes that a reasonable accommodation must be made between the necessities imposed by our need for energy this winter to heat our homes and run our factories, and existing environmental protection requirements that restrict to some extent the type of fuels used by such major customers of fossil fuels as utilities.

As a prelude to a discussion of what we believe are the legal measures needed to accomplish such a reasonable accommodation of energy and environmental needs, I should like to quickly review the legal flexibility already provided under the Clean Air Act to make such adjustments. I think this is important to know, because frequently there is some expression of opinion to the effect that the Clean Air Act is inflexible, rigid, and that, in part at least, for those reasons, responsible for some of the difficulties we are in.

I think it is important to note that the Clean Air Act does contain considerable flexibility. The Clean Air Act, despite its stringent demands and ambitious goals, allows us to grant waivers from primary standards up to 1975 and in some cases up to 1978.

Temporary waivers from compliance with primary and secondary standards are available and have been employed in the past. Last winter we developed a variance policy for Clean Air Act requirements to meet heating oil shortages in certain areas of the country.

Additional flexibility has been provided by our clean fuels policy for coal. Almost a year ago we began encouraging the States to delay implementation of the secondary nonhealth related air quality standards so that available clean fuels can be concentrated in areas where they are needed most to protect the public health.

I might point out that this policy was urged upon the Governors by a letter from the EPA Administrator, Mr. Ruckelshaus, I believe last December, roughly a year ago, and embodied further in the energy message of the President last April.

This year, in order to deal with variance requests that we had anticipated as a result of low sulfur oil shortages predating the Mideast cutoff, we have sent to Governors in some 17 critical States

explicit guidance for working with us to identify their potential problems and establish expedited variance procedures.

Indeed, last week, within 48 hours after our agency had received its first variance request, it had been approved.

Mr. Chairman, I would request permission at this point to put into the record a copy of the letter of October 15 to the Governors with attachments concerning expedited variance procedures.

Senator MUSKIE. I was going to ask you if you had that information with you.

Mr. TRAIN. I have it with me.

Senator MUSKIE. By all means, it will be included in the record.

[The material referred to follows:]

OCTOBER 15, 1973.

Hon. REUBIN ASKEW,
*Governor of Florida,*
*Tallahassee, Fla.*

DEAR GOVERNOR ASKEW: On September 19, 1973, you attended a meeting in Washington to discuss the fuel oil problems we face this winter. We had a spirited and, in my opinion, useful discussion on the issues of mandatory allocation, price controls and sulfur regulations. I would like to elaborate the views I expressed at the meeting and to lay out steps I believe we should pursue jointly in order to grapple with the short term energy-environmental problems. Enclosed is a detailed guidance package to assist you in taking necessary actions.

Secretary Morton laid out our best estimates of the energy situation this winter. We are providing you with a copy of his report and an additional analysis of the fuel situation prepared by EPA. Both the Interior and EPA analyses may significantly understate the seriousness of the shortage problem because both were prepared prior to the outbreak of hostilities in the Middle East and do not reflect the potentially more difficult situation that we may face. Thus, we are likely to experience energy shortages, aside from the sulfur issue.

In addition to the overall energy shortage the supply of low sulfur fuels is likely to be short in the northeast, the upper midwest and possibly California. Last winter only a few variances were needed when imports averaged 400 thousand barrels per day. We do know that greater volumes of imports, which tend to be relatively high sulfur, will probably be required this winter but the large number of variables involved makes it impractical to determine a low sulfur shortage figure.

I believe that the risk of a shortage of energy, especially low sulfur fossil fuels, is sufficiently great this winter that it is prudent to develop plans and take any necessary actions *now* to deal with possible contingencies. Variances will be necessary in some cases to insure that energy needs can be met. As we did last winter, EPA is prepared to take action on temporary variances from State Implementation Plans. Unlike last winter, we are prepared to deal with variance requests on an advance basis. We would be willing to do so in order to permit orderly planning by States and oil suppliers to deal with what is expected to be a significantly greater shortage this winter than last.

In reviewing any variance requests you feel are necessary to insure an adequate energy supply in your State EPA must, as required by the Clean Air Act, insure that all other reasonable measures have been taken before variances can be approved.

First, the need for variances must be established. All we have so far are nationwide estimates. It is essential to determine quickly the specific impact this nationwide problem will have in your State. I would hope that we could work together with neighboring States to help insure that no one area becomes a dumping ground for high sulfur fuels this winter. I believe the risk of energy problems this winter is sufficiently great to warrant intensive discussions now between EPA, the States, and fuel oil suppliers to determine what variances will be needed. In reviewing any variance requests, you should make sure that fuel oil suppliers make a good faith effort to redistribute their low sulfur supplies to critical air quality areas, allowing the higher sulfur imported supplies to be used in areas with less restrictive regulations.

Second, I urge you to step up your efforts to develop effective conservation measures. The potential payoff from energy conservation is significant in terms of avoiding fuel shortages and minimizing air quality problems. I firmly believe that effective conservation measures at both the State and Federal levels could go a long way toward minimizing this winter's problem.

I would recommend that you initiate your planning activities immediately, including the following steps:

1. Apply to EPA for approval of expedited procedures to handle any variances you believe to be necessary. Last winter the few variances granted were of an emergency nature in some cases without adequate opportunity for public hearings. Under EPA regulations, 40 CFR 51.4(e), States may request EPA approval of procedures incorporating a shorter time period for notice of State public hearings. The request could emphasize the emergency nature of the problem and explain the State's plan to more fully publicize the hearings. This step would shorten the period of notice from the normal 30 day period to about 10 days.

2. Once the State granted any proposed variances and submitted them to EPA, our decision will be made as soon as possible.

3. This expedited procedure relates only to Federal requirements. Appropriate State personnel should be instructed to examine State laws to determine whether longer notice periods are required and whether emergency provisions can be invoked to speed up procedures. It is essential that procedures be established which would allow quick action with full public participation and legal protection for the involved parties.

4. If you are not already doing so, I would urge that you meet with fuel oil suppliers to determine the extent of the problem in your State. I realize that one of our most difficult problems is in obtaining sufficient information from suppliers to determine what variances are necessary.

5. Public hearings may be helpful in this regard. Such information is essential, both to determine needs and to assure that efforts have been made by suppliers to shift low sulfur fuels into areas with restrictive sulfur emission regulations. Should higher sulfur fuels need to be used, such advance planning is essential to minimize the need for variances by urging suppliers to redistribute low sulfur fuels to the areas of greatest need.

EPA is prepared to assist you in these steps in the following ways in accordance with the enclosed guidelines:

EPA will help your State environmental agencies develop contingency plans to consider where higher sulfur fuels could be directed to minimize air quality impacts. These plans will assist you in setting environmental priorities and should provide the basis for discussions with fuel suppliers regarding their abilities to redistribute fuel supplies to minimize the need for variances.

EPA stands ready to meet with your State to determine the extent of low sulfur fuel shortage potential this winter as a basis for possible variance requests.

EPA is providing guidelines for the States to follow in any hearings to help determine whether suppliers are making reasonable efforts to redistribute their supplies. (Attachment 3).

With your approval, EPA regional offices will participate in your hearings set up for informational purposes or to consider variance requests.

6. You should recognize that even with the expedited procedures we are recommending it will still take in the range of 60 days to make decisions on variances and therefore prompt action is required now to anticipate future needs.

I believe that the President laid out the quandary we are confronting this winter quite well at the September 19 meeting. We must struggle to balance our environmental goals with energy needs in a tight supply situation. As you know it has been decided to proceed with a mandatory allocation program for the allocation of heating oils. I firmly believe that if we get started right away with the steps I have suggested, we can confront our energy problem in such a way as to result in minimal adverse environmental impacts.

Please feel free to call on me if I can help in any way.

Sincerely yours,

RUSSELL E. TRAIN,
*Administrator.*

Enclosures.

U.S. ENVIRONMENTAL PROTECTION AGENCY,
*Washington, D.C.*

The attached letter sent to: Governor Reubin Askew—Florida; Governor Wendell Ford—Kentucky; Governor Linwood Holton—Virginia; Governor Thomas Meskill—Connecticut; Governor Francis Sargent—Massachusetts; Governor Milton Shapp—Pennsylvania.

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STATE OF MAINE,
OFFICE OF THE GOVERNOR,
*Augusta, Maine, October 25, 1973.*

RUSSELL E. TRAIN,
*Administrator, Environmental Protection Agency,*
*Washington, D.C.*

DEAR MR. TRAIN: Thank you for your letter of October 15, 1973. I only wish the entire federal establishment were able to respond to the energy problem with the timeliness and forthrightness E.P.A. has exhibited both at the national and regional levels.

As a general proposition, I believe Maine will experience relatively few complications with high sulfur fuels. As far as state laws are concerned, the Maine Board of Environmental Protection has already scheduled hearings for early November to determine whether a 1.5% content limit for No. 6 oil in the Portland area should be deferred for another year. So far as the federal statutes may apply, I understand state DEP officials have already conferred with Region I EPA officials regarding the need for early variance awards in Maine.

I appreciate your attention to this matter and look forward to an effective working relationship over the difficult months ahead.

Sincerely,

KENNETH M. CURTIS,
*Governor of Maine.*

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COMMONWEALTH OF VIRGINIA,
OFFICE OF THE GOVERNOR,
*Richmond, Va., October 29, 1973.*

Hon. RUSSELL E. TRAIN,
*Administrator, U.S. Environmental Protection Agency,*
*Office of the Administrator, Washington, D.C.*

DEAR RUSS: I very much appreciated your letter of October 15.

We share your concern for early action. Although we do not anticipate any problems except minor shortages, an unexpected shortage might require our use of the variance procedure you described in your letter. Our Air Pollution Control Board has informed me, however, that based on current estimates of the fuel supply situation, they expect few if any variance requests.

I want to thank you for your offer to help expedite variance proceedings and to tell you that we will certainly take advantage of it if the need should arise.

Best wishes.

Cordially,

LINWOOD HOLTON.

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COMMONWEALTH OF PENNSYLVANIA,
OFFICE OF THE GOVERNOR,
*Harrisburg, October 25, 1973.*

Dr. RUSSELL E. TRAIN,
*Administrator, U.S. Environmental Protection Agency,*
*Washington, D.C.*

DEAR DOCTOR TRAIN: Thank you for your letter of October 15, 1973, and the enclosed material on the energy-environmental problems. Your suggestions are deeply appreciated and we will proceed to review these quickly in Pennsylvania.

Shortly after our meeting in Washington, I appointed the Governor's Task Force on Energy and named Mr. Charles Simpson as Chairman. I understand Mr. Simpson has already met with you and I am sure he will be wanting to talk to you again after he has had a chance to study your letter and the enclosed material.

Sincerely,

MILTON J. SHAPP,
*Governor.*

Mr. TRAIN. My purpose in reviewing existing authorities are twofold. First, to indicate we already have substantial legal tools for meeting the crisis, and second, to stress the new legislation to take account of the strengths of existing law.

If we are to have legal and regulatory continuity we must keep our existing programs intact insofar as possible with only the limited modifications needed to deal with the current energy emergency. Any reasonable balancing between energy and the environment assumes that each part of the equation is given proper weight.

From the environmental side, this means that those regulatory programs that have made major strides since the 1970 amendments must maintain their legal and administrative momentum.

I believe that the search for legislative solutions to achieve this difficult task of properly confronting the energy dilemma within a framework that preserves the integrity of our environmental programs has two principal ingredients.

The first is to identify those shortcomings of the Clean Air Act that need adjustment to meet the immediate crisis of this winter. This subject has received extensive consideration both within the administration and the Congress.

The general consensus with which I concur is that procedures contained in the act for granting variances can be too protracted to respond to immediate energy shortages. In particular, they are ill-suited to allow those utilities burning oil which have a capability to burn coal to turn to coal without extensive delay.

Returning to the example of the first variance I recently granted, while EPA was able to process it within 48 hours, it had first to go through elaborate submission, public hearing and comment procedures at the State level.

These procedures are a luxury we cannot now necessarily afford. The need for expediting and in fact dispensing with many of these procedures in the short run is fully recognized in section 1 of the Draft bill before us.

Section 1 of the bill authorizes the Administrator of the Environmental Protection Agency to temporarily suspend Clean Air Act requirements for sources that have been ordered to use alternate fuels under the National Emergency Fuels Act currently before the Congress as S. 2589.

The waiver period is limited from November 15, 1973, to May 15, 1974. Waivers are not available where such suspensions would present an eminent and substantial endangerment to health.

Section 1 also requires the Administrator to provide an assessment of the anticipated fuel shortages along with legislative recommendations for coping with them. I am in accord with the purposes of section 1. I strongly support its approach whereby variances would be temporary and approached on a case-by-case basis. Furthermore, the study represents a needed review of the current shortage and how future ones can be met in an orderly fashion.

However, I question the desirability and practicality of the May 15, 1974, cutoff date. As you know, the National Emergency Fuels Act contemplates an emergency of up to 1 year, during which time the President is to direct those facilities able to convert from oil to coal to do so.

The May 15 date raises the possibility that sources directed to convert to high sulfur fuel pursuant to the Emergency Fuels Act would be obliged to continue to use such fuel after May 15 and would then be out of compliance with the Clean Air Act requirements and operating in violation of the law.

It would appear that any variance period provided by your bill should be coextensive with the period of any emergency that may be established under the National Emergency Fuels Act. I think this is just a matter of conforming these different pieces of legislation.

The second part of our search for a legislative solution consists of insuring that short term solutions do not effectively derail our longer range efforts to protect the Nation's health and welfare, particularly from the hazards of one of the most toxic of pollutants, sulfur oxide.

I believe we must keep our long-range goals clearly in view while we grapple with the present emergency. While I concur that we must meet this winter's shortages now, we must recognize that these short-term solutions have long-range consequences that we must continue to live with when this winter's shortage passes.

Having mentioned this winter's shortage, let me interject here, Mr. Chairman, that I am not suggesting that in my view this energy crisis is going to be over at the end of this winter.

We are in more a number of years of chronic shortages ranging from prices to problems in dimensions. A dimension of these long-range consequences is that some plants converting this winter will remain converted to coal.

This may be desirable in certain cases:

(*a*) To preclude the possible disruption of coal production and emission control efforts if temporary conversions are needed in succeeding winters, and

(*b*) To allow scarce oil supplies to be used by those unable to convert.

In light of the scarcity of low sulfur coal and the current pace of installing sulfur dioxide scrubber control technology, these plants impose significant regulatory problems. They must be placed on compliance schedules.

It is my belief that a failure to account for these long-term consequences at the outset would jeopardize the long-range goals of the Clean Air Act.

It is for this reason that I would like particularly to commend the committee for the approach taken in the draft bill. Section 2 directly confronts the problem of these long-range consequences, especially those engendered by the permanent conversion of some oil-fired plants to coal.

Section 2 serves to require those plants that are required to burn coal for an indefinite time to be placed under compliance schedules by either the State or EPA. By designating those plants that will remain converted and requiring that they be brought into compliance, section 2 helps to integrate our response to longer term energy problems into the basic structure of the Clean Air Act.

In summarizing my comments on the bill, I feel that it correctly identifies the problems, particularly the longe-range ones, and provides some sensible approaches toward solving those problems.

Because I recognize the bill's provisions may undergo further development and refinement, my statement is directed more to overall approaches than specific detail.

Both I and my staff look forward to having the opportunity to work closely with the committee and the staff in the immediate future on these issues. I welcome any questions you have.

Senator MUSKIE. Thank you very much, Mr. Train. That is a succinct statement that I find reassuring.

At this point it would be appropriate for me to read Senator Randolph's statement. He has always been interested in this problem. Rather than just putting the statement into the record, I owe him the courtesy of reading it.

## STATEMENT OF HON. JENNINGS RANDOLPH, U.S. SENATOR FROM THE STATE OF WEST VIRGINIA

I regret being unable to participate in today's hearing dealing with matters of critical importance to every citizen of the United States. I am, however, discussing energy matters with delegates and other attending the convention of the American Association of State Highway Officials in Los Angeles.

This is a group that is directly concerned with the energy situation and whose program can be utilized for energy-conserving purposes.

The hearing being conducted today will lead to modifications in the national effort to curb air pollution. I do not believe that we can undermine the basic integrity of the air pollution program, but we must recognize the current crisis situation and adjust accordingly.

The bill being considered today is the first approach and the basis for our review of air pollution statutes as they relate to energy supplies. The adjustments in the air pollution reduction program that will result from this hearing and the deliberations of the committee will provide the Nation with additional tools to insure adequate energy supplies in the months immediately ahead.

I must emphasize, though, that the energy shortage is not a situation to be resolved quickly. It will not be enough just to save enough fuel to get us through this winter. It will not be "business as usual" next spring or a return to our energy extravagances.

Long-term solutions must be found to give our country reliable, sufficient supplies that we can use to sustain our way of life and our continued economic strength.

That concludes Senator Randolph's statement.

In fairness to the members of the committee, we will use the 10-minute rule again. That ought to give us several rounds if we need them, since attendance is not as complete as it sometimes is.

First of all, Mr. Train, I would like to identify the potential for easing the energy crisis, the energy problem, through relaxation of environmental standards.

To put it another way, I would like to identify, if we can, the areas and the activities where environmental standards are now imposing a fuel penalty. I have not heard it discussed from that perspective, and I think the country ought to know.

25-885—74——2

There is a general apprehension that clean air standards are drying up our energy supplies. My own impression is that that is not true on any such grand scale, and I would like to define it in terms of its real dimensions if we have the data to do so.

While you are conferring, I might make the point that the hearings we had within the last 2 weeks on the auto emission problem made it clear, or at least the record seems clear to me, that insistence on the 1975 standards will achieve fuel economy.

So in that case, relaxation of the standards would carry a fuel penalty rather than the reverse. With respect to stationary sources, I think we would be interested in knowing what sources of pollution would reflect an energy or fuel penalty by reason of the continuance without relaxation and modification of the clean air standards.

Mr. TRAIN. Mr. Chairman, you have asked a very broad question which I would like to address in some detail. There are both energy losses and energy gains attributable to what we can broadly describe as environmental programs.

So we are dealing essentially with a variety of offsets. In the overall, looking at environmental programs generally, I think that we can have some confidence that overall energy costs of cleaning up the environment and maintaining a clean environment will probably range somewhere around 1 percent or slightly above that of the total energy bill of the Nation.

I would suppose that that equates really quite closely with the economic studies that we have done, indicating that economic costs are in the range of around 1 percent of GNP. In the overall, it is quite minimal and quite within the capacity of our society, our economy, to meet that without undue maladjustment.

As to some of the different offsets, one of the higher costs probably are those of stationary sources using stack scrubber technology, sulfur removal technology; to a lesser extent the precipitating technology.

I would imagine the total cost, looking at the Nation's overall energy bill would be something over 1 percent for that sort of stationary source control.

Looking to the automobile, it is a little difficult to make a long-range projection because technology in this area tends to vary and develop, evolve, quite rapidly. At the present time, the 1973 model vehicles with the 1973 controls appear to have on the average a fuel penalty as compared to precontrol vehicles of about 10 percent.

I think it is interesting to note that with respect to the smaller category of cars there has actually been a fuel economy that has come along with emission controls. I am not enough of an automotive engineer to explain to you why that is.

But the fuel diseconomies have been heavily weighted in the higher weight ranges so that I think this at least brings home the point that fuel diseconomy is not a technologically necessary concomitant of emission control. It does vary with the weight of the vehicle.

Looking ahead, we forsee an increase in fuel economy with the catalytic converter. We had some rather extensive testimony here last week and while the data from the different manufacturers varies at least at the higher end of the range, from General Motors the indica-

tion was that their catalytic converters on the average, across the whole range of their models would improve fuel efficiency by 13 percent over their 1973 cars.

Lesser amounts have been reported by other manufacturers, but they are still substantial savings. So I do not feel that in the long term we need assume any substantial diseconomy from automotive emission controls.

As has often been pointed out, in addition to emission controls, there are other very significant causes of fuel diseconomy. Air conditioners and automatic transmissions are in about the same range. Again, the weight of the car is probably the largest source of increased fuel demand.

So, again, a move toward smaller cars in the American market would do far more to save energy than anything that could be done by removal of emission controls. Then, of course, there are less easy to quantify offsets such as mass transit.

We recognize that as increasingly our society shifts to mass transit in congested areas, metropolitan areas, this will have substantial fuel savings. Both buses and rail transit are far more efficient per passenger mile in terms of fuel use, and this is very obvious, than the automobile.

Of course, looking beyond the Clean Air Act, and I know this was your main question, there are energy costs involved with municipal waste treatment. I read a study recently which indicated that we might look toward a general energy demand on the order of 4/10ths of 1 percent of the total national energy demand with respect to municipal waste treatment as all of those come on line.

Having identified that, we immediately find an offset in the solid waste field. You are familiar with the excellent experience of the Union Electric Co. in St. Louis, their demonstration plant carried out following an EPA demonstration project to utilize solid waste for conversion to energy in utility boilers.

The indications that I have had are to the effect that if only 10 percent of the consumable waste of the country were utilized by utilities in this fashion, it would almost exactly equate the energy cost of cleaning up municipal waste water, that 0.4 percent I mentioned earlier.

I don't want to be held to these figures, as I know they are speculative. But I think they indicate ranges and they also indicate that there are offsets of various kinds. Recycling would be another very important offset.

There are substantial savings to be made in the use of energy from recycling, in addition to all the other benefits that flow from greater recycling of resources.

So I think we needn't look upon the environment in the long term as energy consumptive or energy wasteful. I would be inclined to feel it is probably just the opposite. Pollution, as many have said, is basically resources out of place or the inefficient use of resources.

I am sure that if the total balance of energy could be totaled up, including the energy required in the production of natural resources right on through the waste disposition process at the end of the cycle, that an environmentally improved system would be more efficient, energy-wise.

I have no doubt of that. I told you it would be a long answer.

Senator MUSKIE. To put it simply, we consume about 17 million barrels, I gather, of oil per day now. That seems to be the closest to an accurate figure. The President's recommendations are designed to save 2 million barrels a day. But if we consume 2 million barrels a day less of oil, that means less air pollution.

In other words, the consumption of energy produces the pollutants in the air.

Mr. TRAIN. That is true. Of course, there are other offsets.

Senator MUSKIE. I understand that, and it is easy to oversimplify. But the oversimplification now is in the direction of making environmental controls the big, bad scapegoat. I think we need to put that into perspective if we are to get about the business of dealing with the problem.

Mr. TRAIN. I am probably as worried about the energy problems of the country as anyone, and perhaps more than a great many because I suppose I am as much the man in the middle as anyone around, and I am getting as much heat, although my office is no warmer than anybody else's. There is plenty of heat, I think, to keep me warm this winter.

Senator MUSKIE. On this question of recycling, it is a fact that it takes eight times as much electricity to produce a ton of aluminum from the raw product as from the recycled product.

So there are offsets. What you are saying is if you are to draw up an energy balance sheet on environmental controls, environmental controls would probably be in the black and not in the red. Isn't that what you are saying?

Mr. TRAIN. That is true. The point I was going to make was that despite the very great seriousness of the present situation, and despite the very difficult problems I think we undoubtedly are going to be facing, and despite some economic dislocations which I suspect are going to flow from this situation, there are positive signs.

I think among these is the fact that we will be forced to look at inefficiencies in our system. We will be forced to look at waste within our system, and to reexamine some of our waste of doing things and to take another look at some of our priorities for the application of available energy. I think this is all to the good. It is probably good for society once in a while to have to take another look at where it stands.

We have sort of assumed that there was plenty more, and now we realize there isn't plenty more, and we have to use what we have efficiently and wisely. So that is the positive side of the picture.

As we get through this, I think we will have not only an environmentally better system but I think probably economically more efficient.

Senator MUSKIE. I want to get into another area, but I am going to yield. The other area—and my colleagues may touch on it—is the extent to which short term modifications of clean air laws would carry an energy payoff for us.

You might be thinking about that. I will get back to it if my colleagues don't touch it. I will yield to Senator McClure at this time.

Senator McCLURE. Thank you very much.

Mr. Train, it seems like you are spending a great deal of your time up here recently testifying before one or another committee. I guess

right now that is the most important job to be done, to determine what kind of policy we will have.

I certainly appreciate the tenor of your statement today. I don't intend to spend a great deal of time going back over the history of the last couple of years' events, or to detail who said what to whom or why, nor to attempt to say, "Gosh, I told you so. Why didn't we move faster?" Or any of those things which are great temptations.

I do appreciate the fact that your statement is a moderate one, and I want to underscore a couple of things you said. One is that whatever relaxation we make in the attainment of our goals is temporary, case by case. It is not a relaxation of policy. It is a case-by-case variance from that policy; is that not correct.

Mr. TRAIN. That is correct.

Senator McCLURE. So we are going to keep the same policies that were embodied in the existing statutes and regulations of EPA and vary from them only as is absolutely necessary and only for the periods of time that are absolutely necessary.

That is my understanding of your statement.

Mr. TRAIN. That is correct. That was the point made very strongly by the President in his message the other evening. It will be temporary, on a case-by-case basis, balancing environment and energy needs.

I think it is the wise way to proceed and I think the effective way to proceed.

Senator McCLURE. I certainly agree with it. I was heartened when the President used that terminology in his speech. I applaud your continuation of that terminology today because I think it is the only one we can follow that makes any sense.

I do want to go back for a moment, though, and touch on a couple of basic things. There has been some suggestion made that we could cut our energy consumption by rather large magnitudes.

I am certainly in favor of reducing the waste. I think that gets back to something I heard a long time ago—and I think you are perhaps old enough to remember it, too—the rather simple formula that has been part of an ethic that has been rejected by a great many people in this country today.

As I recall, it was expressed as waste not, want not, which is too simple, perhaps, to apply to our environmental problems today.

The second point, though, is if, indeed, we were able to cut energy consumption regardless of how we did it, simply to match available supplies, the evidence would indicate that that would be a 2-million to 3-million-barrel per day reduction in consumption.

The President, I think, used the figure of 2 million barrels per day in the short fall of supplies and the figures I would project are closer to 3 million.

If, indeed, all our policies did match our consumption to the available supply figure, what would happen to our economy? What would we see if we lost anywhere from 12 to 20 percent of our oil consumption? What would we see in the downturn in GNP and the increase in unemployment rates? What would we see in the decrease in tax receipts and an increase in the size of the Federal deficit?

Mr. TRAIN. As you know, I am not an economist, Senator McClure.

Senator McCLURE. That is why I asked you the question. I am not sure the economist could answer.

Mr. TRAIN. I think it is to me obvious that an energy gap of that magnitude, particularly in a short-term timeframe could be quite disruptive to the economy. I emphasize the short term because I think it is difficult within a short timeframe to take all of the kinds of steps that you would like to ameliorate those impacts.

I think you would tend to find that the shortages would be concentrated in a spot kind of fashion in different segments of the economy so that they could be very severe in a particular place, perhaps in chemicals or in aluminum production.

I am not trying to pick these out because I know anything about them at all but just as examples. Therefore, it would have a substantial ripple effect in other segments of the economy.

I think these kinds of effects tend to snowball a little bit. So I think this is a matter of concern. There is no question in my own mind that the kinds of shortages and gaps that you have described could have adverse effects on the economy. And they would be of a fairly substantial nature. I think this again emphasizes the enormous importance of reducing demand in every way we can and to conserve energy and not to waste it.

The contribution of wasted energy to economic activity is probably reflected in the GNP, as everything else is, but it is not productive.

Senator McCLURE. I might comment that I, like a great many other people who have commented recently, had occasion to be on the freeway yesterday and Saturday. At 50 miles an hour, I almost got killed. It was a little better last night than it was Saturday. I hope maybe people are beginning to get the spirit of the times that is necessary if they are going to comply.

I don't care whether it is a voluntary speed limit reduction. Unless people want to slow down they are not going to slow down. I don't think we have enough policemen on the roads to enforce a 50-mile-per-hour speed limit unless people themselves want to comply. Somehow we have to get through to them the feeling that they are going to pay a high price if we run out of energy.

It isn't simply a question of gasoline going to $1 a gallon as well it might, or a question of whether or not they can get to grandma's for lunch by leaving a half hour later. It is a question of whether or not they will have a job to go to. In my area of the Pacific Northwest we have hydroelectric energy based upon a Federal program that was put into being 40 years ago. We have the aluminum industry that utilizes that hydroelectric energy. The men who work in that aluminum industry very likely will be out of work for from 30 to 60 days this winter because of lack of energy. To most of us across the country, a percentage reduction in the work force is not very important, perhaps, but to the men who are working there, being out of work for 1 to 2 months is absolutely devastating. Those are the kinds of things that I think we all have to recognize in the energy allocations and reduction in demand, in the attempts to get through what will otherwise be a very rough time for some people.

Would you not agree?

Mr. TRAIN. I agree. The record should show that the shortage of energy in that part of the world is primarily due, as you mentioned, to a shortage of hydroelectric power due to the failure of the

snowpack and the rain, which, of course, is an environmental problem of a sort, I guess, but of a different kind than we have been dealing with more recently.

Senator McClure. It is a very real problem; you are right. We have had an abnormally low rainfall and snowfall cycle for the last 2½ to 3 years and it is having very adverse effects. A week ago last Friday, I picked up the Spokane, Wash., newspaper detailing their problems in the aluminum industry and the industry said, "Don't worry about it too much because we can get propane to generate the electricity and heat that is necessary."

I just wonder what they have been smoking. They simply don't recognize the kind of problem if they can say that.

Then in the other committee on Friday I had a similar answer given to me by one of the administration people who was talking about meeting agriculture problems by saying, "Well, we have taken care of agriculture, we have given them some propane." That is ridiculous. The problem is deeper than that and it is much more difficult to solve than that. I might mention, in the time that I have, that one of the reasons that the fuel diseconomy in pollution devices is greater in heavy cars than in light cars is tied directly to the decision made by your agency and others to get the lead out of gasoline. That required the reduction in compression ratios which affected only the high performance, high horsepower automobiles that are the heavy automobiles.

The small cars didn't have those high compression ratios, therefore, they didn't have to reduce the compression ratios, and, therefore, the full diseconomy was not so great. I think there is a very valid explanation of why that is associated with the design of the engine. I want to just very briefly get into the question of your recent letter to the Governors. You mentioned one that was dated October 15, as I recall.

Mr. Train. Yes.

Senator McClure. I assume that that is the same letter that was attached to your news release of October 18?

Mr. Train. I presume that must be.

Senator McClure. The copy of the letter that is attached to that release is not dated, but being just 3 days later and on the same subject, I presume it to be the same letter.

Going back to a year ago last August, the Environmental Protection Agency put out a memo.

Mr. Train. When was that?

Senator McClure. It is a memo dated November 3, 1972, referring to a June 1972 staff meeting with representatives from regions 2, 3, 4, and 5, and it then makes reference to "Early in August each of your air and water directors received a package of material on the problem of the low-sulfur fuel gap."

I detail that only as a fact that it was a year ago last June when you started working on the problem in an informal way. A year ago last August, there was a package put out. That was followed by the memorandum dated November 3, 1972, and that, in turn, was followed by the letter of December 18, 1972, that you made reference to earlier in your statement.

Mr. TRAIN. Yes.

Senator McCLURE. Each of these documents to which I have made reference in talking about the low-sulfur fuel gap talked primarily in terms of coal. Your letter of October 15 of this year doesn't mention coal once. It talks in terms of low-sulfur variances in terms of petroleum fuels only. It seems to me that there is a very great difference between talking of the sulfur emissions problem in terms of shifting to low-sulfur petroleum fuels and conversion to coal and gas.

I wonder if it was a change in art on your part, if it was a calculated change dealing only with the sulfur problem in oil and not dealing with coal.

Mr. TRAIN. I don't believe so. The October 15 letter was written at a time when, in terms of the short-term winter emergency, we were primarily, at that time, worried about shortages of low-sulfur oil. We weren't worried so much about overall oil supplies at that time as about the availability of low-sulfur oil. So that was the particular concern to which the October 15 letter was addressed and was the subject of the meeting of the Governors with the President and Governor Love in September.

That primarily focused on oil problems. There was no suggestion in that letter that coal wasn't part of the problem. That was not the intention.

Senator McCLURE. I don't think it made any reference to the fact that coal wasn't a problem, but it just ignored it. It seems to me that the emergency measures we are now undertaking that call for forbidding a shift from coal to oil and in some instances mandating a shift from oil back to coal where it is possible, are developments that were rather predictable and perhaps were in the minds of some, at least, prior to the date of your October 15 letter.

Mr. TRAIN. Let me ask Mr. Sansom if he could answer that. This is Robert Sansom, our Assistant Administrator for Air and Water Programs. He has lived with this particular problem for longer than I have.

Mr. SANSOM. I think we have had two policies, one on oil and one on coal, for over a year. Last year we sent out guidances for sulfur content in oil-burning powerplants. We have always felt that they were two different problems; the oil one was primarily the question of the timing of bringing on desulfurization in refineries. We felt this required a temporary variance solution. The coal question was a question of capacity economics. There weren't very many powerplants that wanted to convert to coal because of the low price of foreign crude. So there our initiative was based on the desire to mitigate the unemployment effects of further conversion to oil from coal. That was the basis for the December 18 package and the earlier communication that you referenced.

Senator McCLURE. I would like to comment that surely you and members of the utility communities didn't really believe a year ago that the price of foreign crude was not going up, did you?

Mr. TRAIN. No. I didn't say that.

Senator McCLURE. That was my understanding. Your strategy was based upon the fact that nobody was thinking about coal because of low price of foreign crude.

Mr. TRAIN. I think that we were trying to respond to the situation that existed then with regard to the kinds of moves the utilities wanted to make.

I think it is their responsibility to respond to the market and we were responding to what they wanted to do.

Senator MCCLURE. I will not pursue that, but that has been exactly my feeling from talking with company executives, that they also thought you were responding to what they wanted to do.

Thank you, Mr. Chairman. I will ask further questions along this line when I again have the time.

Senator MUSKIE. Senator Clark?

Senator CLARK. Mr. Train, you have indicated that the bill before us, or the amendment, to the Clean Air Act would cover a temporary period, 6 months, until May 15 of next year, and you discussed briefly the fact that maybe we ought to look at this in relation to the emergency bills since it is set up for 1-year. I wanted you to discuss that in a little more detail. I would like to precede your discussion just by an expression of some opinion on that point. It seems to me that although there is a variance there of 6 months, since we are apt to be in the energy crisis for a good long time—I think Secretary Morton yesterday said something about 5 to 10 years and some people said 2 or 3 decades—it might become necessary to extend the emergency bill for a longer period of time than 1 year.

It seems to me it might not thereby necessarily make sense that we suspend the Clean Air Act beyond 6 months because we should perhaps be looking at other ways to save energy that would be at least as important as the suspension of the Clean Air Act, such as regulation on smaller automobiles or other areas where the emergency bill at this point simply doesn't take any action.

I guess my question really is: "Doesn't it made good sense to limit these variances to 6 months just to meet this emergency of the winter this year, rather than to try to extend it for a full year and thereby perhaps set into motion further extensions in later years?"

Mr. TRAIN. I am not positive it makes a great deal of difference, to be totally frank. It would seem to us that there was at least some logical consistency in having the dates coincide as between the two pieces of legislation, and it might give rise to some question that one lapsed while the other was still in effect. I suspect that would be the case. So it is really more a suggestion of a logical conformity rather than any real sense that 6 months wouldn't be adequate to do the job this winter.

I doubt whether the one year is so much longer than 6 months that it would provide more of an incentive to a company to shift from oil to coal. I am a little bit neutral, I suppose, on this one.

Senator CLARK. I have another question in that regard which I suppose is very, very difficult if not impossibble. How much effect do you really believe that granting variances to the Clean Air Act will have with regard to the energy crisis? What really are the dimensions of the savings we might realize as a result of creating variances? I know you don't know how many you will allow at this point so it is a difficult question. But are we really in the broadest sense going to save much fuel by allowing variances, in your judgment?

Mr. TRAIN. In the overall, you are not going to come anywhere close to solving the problem by a system of variances. I think it is more a need to meet spot emergency situations. Obviously, permitting a shift-over to coal, particularly a dirtier coal, would make some more total energy available. Insofar as oil is concerned, we can't make any more available than is there. As my good friend, the Secretary of Interior, has said, you can't make oil grow on trees. We are not going to expend any more energy than we have. But there are cases where somewhat higher sulfur content oil is available.

But the variance which I granted last week involves Long Island and will permit the burning of a somewhat higher sulfur home-heating oil than called for by the local air quality regulations. I think that involves some 200,000 homes so it is a matter of some magnitude.

I am not able to quantify nationwide as to how much this will add up to. We don't know, for example, of the utilities that could convert from oil to coal, and I think there are somewhere between 40 and 50, how many of these actually will be able to convert. There are problems not only of engineering within the generating plant, itself, but of the availability of coal, of transportation systems, of sidings by which coal can be brought into a plant. It is difficult to give hard numbers.

We have some total figures as to potential savings in this area which we can give you, but they are, again, very broad, ball park estimates

Senator CLARK. You would identify them as being rather minor?

Mr. TRAIN. In the overall, I think, fairly minor. I will ask Mr. Sansom to give you some figures that we have.

Mr. SANSOM. I think what Mr. Train emphasized is that there are supply side problems that may be more constraining on the ability to get the response. I see some of the coal association people are here. Maybe they are better equipped to speak to it than we are. But in terms of the environmental regulations themselves, looking at those 46 plants, we find that a smaller number—I think about 26 of them—could be converted without substantial adverse environmental effects on large numbers of people. This is based on crude analysis—and we want to check this out on the local level again. But generally, the environmental problem is rather serious in the case of 20 of these powerplants. So we want to put them at the bottom of any priority list to convert. For the 26 plant groups, there appears to be the possibility of using precipitators and getting the right sulfur content coal. We might get up to 200,000-barrels-a-day savings.

I would consider that figure the top end of the range on the basis of working with the other Federal Agencies, and States, and so on. We are trying to further this analysis.

Senator MCCLURE. Would the Senator yield?

Senator CLARK. Yes.

Senator MCCLURE. Were these utility plants alone, and were the oil to coal conversions alone?

Mr. TRAIN. Right.

Senator CLARK. I know you are not an energy inventory specialist, but I assume in your discussions of this entire problem there has been some discussion of the availability of coal and there is an assumption, apparently, that additional coal is available. It would seem to me that unless there were assurances given for more than 1 year, coal mines simply wouldn't reopen without more incentive than that.

I noticed over the weekend coming through Chicago, for example, the Illinois Coal Association said that they weren't interested in reopening any mines on that kind of a basis. I gather you have some evidence that they may increase production.

Mr. TRAIN. I think you are entirely right in your statement, Senator. One would hardly expect that a short term shift for this winter's period would result in the opening up of new productive capacity, but I think that what we do assume is that existing mines can produce at higher rates. I think this, of course, will have to be checked out.

We are not talking about opening new mines just for this winter period. Obviously, a longer term, assured demand would be necessary in order to provide that kind of an incentive.

Senator CLARK. I have time for about one last question. Very specifically, do you find yourself at variance with any of the provisions of this bill? Are you in complete agreement with it or do you find some disagreement?

Mr. TRAIN. I think we are really in full agreement. As I said, sort of protecting myself in that respect at the close of my statement, there may be some word changes and editorial work that needs to be done. I think we may have a couple of very small things that are really of a drafting nature. But in broad, and certainly as far as the approach and principles embodied in this bill, we are in full agreement.

Senator CLARK. Thank you very much.

Senator MUSKIE. Summing up what has been said in response to questions from my colleagues, the potential for fuel savings by modification or suspension of the Clean Air laws this winter is relatively minor.

The objective of the variance procedure, augmented by this legislation, is to deal with spot emergencies. It is not really going to produce the kind of fuel savings that will make a major impact on our problem this winter. What we do with the Clean Air Act through this legislation is not going to mean the difference between being cold and warm in northern New England, for example. Is that correct?

Mr. TRAIN. I think that is correct. We are not creating any more supply but we are ameliorating the effect of the shortage, and there is a difference.

Senator MUSKIE. In undertaking to define the dimensions of the possibilities in response to Senator Clark's question, and somewhat to Senator McClure's, I think we all understand the difficulty of doing so, but is there any information on the extent to which there was conversion from coal to oil in the utility industry or in industry generally over the past 10 years, for example? This should give us some idea of the extent to which we might press for reconversion.

Mr. TRAIN. I will ask Mr. Sansom to comment on that.

Mr. SANSOM. I think the numbers we have—and we can submit it for the record—relate to the period 1970 to 1975. The total amount of conversion projected in complying with the Clean Air Act is something like 25 million tons of coal converted to oil. Well over half of that has taken place as of now. I think it is something like 16 to 18 million tons that have been converted to date.

Senator MUSKIE. In response to the Clean Air Act?

Mr. SANSOM. That is right. Most of that, about 90 percent, was in regions needing this conversion to meet the primary standards as

opposed to the secondary standards. Of course, there have been much larger scale conversions over the previous 10 to 15 years which have taken place for a variety of reasons—primarily economic—on which we are not prepared to speak.

Senator MUSKIE. What that activity represents is an effort to meet the clean air standards by fuel switching. Could those same utilities have met those standards by using technology to clean up emissions from coal?

Mr. SANSOM. First, I would say that economic considerations might have come into play even in those conversions. We just know those conversions took place after the regulations were established.

Senator MUSKIE. Forgetting the economic considerations—which to some extent have to go by the board, too—could they have met their clean air targets with coal and technology?

Mr. SANSOM. I would say that as of this date, no. In other words, the stack gas scrubber is something that is just now coming on line. I think there are about 10 units operating and another 33 are in the pipeline. So if you wanted to say by this date, I think that with the scrubbing technologies available, we would probably say the lead times would not have included those conversions.

Senator MUSKIE. Do you have any judgments as to the extent to which that technology might be available in the future to those plants that have converted during this period?

Mr. TRAIN. I think it is our belief that the answer to that is generally yes. There may be cases where it is difficult to install because of physical configurations of the site, for example, but we are quite satisfied from the hearings we have just concluded that this technology is available and it will do the job. It takes time to get it installed.

Senator MUSKIE. There is some information in your 1973 Report by the Council on Environmental Quality, which would suggest the dimension of the fuel savings that could be achieved by the adoption of that course. I would like to read that paragraph.

I would like to read it and see if you agree with me as to the implications. I read this from page 165.

> As originally submitted to EPA, State plans could thus prevent the use of up to 155 million tons of domestic high sulfur coal per year requiring instead that up to 584 million barrels of low sulfur oil be imported.

That seems to be the potential trade-off.

Mr. SANSOM. To clarify that, it was on the basis of that analysis that we went back and implemented our clean fuels policy that sought to stretch out the date for the secondary standard. That would cover 100 million tons of that. Then the scrubbing capacity of the country could then be devoted to that 55 million tons so we wouldn't have the unemployment effect.

Senator MUSKIE. So that gives us some idea of the targets that we can shoot for while pursuing this option?

Mr. TRAIN. That is right.

Senator MUSKIE. In a letter which you wrote to Senator Randolph, dated November 27——

Mr. TRAIN. I believe that was in response to a letter which the chairman had sent me. I am not positive.

Senator MUSKIE. Yes, it appears to be in response to a letter—on the second page, the last paragraph, there is this:

Your letter also implies that sulfur regulations have been responsible for shifts from coal to home heating oil. If true, this would be a cause for great concern at a time when that product is so scarce. Our checking of FPC data, however, indicates that little, if any, distillate is being used by powerplants as a result of sulfur regulations.

Mr. SANSOM. The powerplant would use residual fuel oil.

Senator MUSKIE. And distillate is the real crunch this winter.

Mr. SANSOM. I think there is also a crunch on heating oil, too—about 200,000 barrels a day.

Senator MCCLURE. Would you yield?

Senator MUSKIE. Yes.

Senator MCCLURE. Did you say powerplants use residual and not distillates?

Mr. TRAIN. There is some blending of distillates in the powerplants. I think that letter is based on an analysis we did to show that the distillate demand in the utility area is primarily going into turbines. You can't burn heavy oils or residual oils in a turbine, so you have to burn distillates.

Senator MCCLURE. Would I understand your answer, then, that, to your knowledge, there are no powerplants using distillates except those using turbines?

Mr. TRAIN. No. I said there is some blending going into the residual, and I don't have the number here, a very small proportion of the total distillate demand. That blending is in order to reduce the sulfur contents.

Senator MCCLURE. Are you aware of the Commonwealth Edison plant in Chicago that is burning distillates and moved away from coal to distillates? They burn enough distillates in that one plant to cultivate 10 percent of the acreage of the United States.

Mr. SANSOM. I am not aware of that plant. Is that in a turbine or coal boiler?

Senator MCCLURE. It is in a plant that was coal fired.

Mr. SANSOM. I am curious as to why they wouldn't burn residual oil.

Senator MCCLURE. Because they can't get distillates.

Senator MUSKIE. It is a question of whether you like your coffee without milk or without cream.

Senator MUSKIE. Just to shift quickly—if my colleagues will bear with me—to another problem that has been raised by Mayor Bradley of Los Angeles, which bears on this whole question of trade-offs. As you know, Mayor Bradley has been very concerned about the impact upon Los Angeles of the postponement of emission controls on automobiles. Any postponement or relaxation simply means that cities like Los Angeles have a greater problem in controlling emissions through other means—traffic controls and controls of stationary sources. He is now concerned because of the decision earlier this year to delay auto emission controls. That imposed that problem on him and now the energy crisis exacerbates that problem. Mayor Bradley's letter states:

It has come to my attention, however, that the Federal mandatory fuel allocation program of the Office of Oil and Gas, Department of Interior, will force

a reduction of Southern California's rapid transit district bus services from 500,000 miles per month, curtailing normal operations by 11 percent.

If implemented, this action would enormously undercut our efforts to comply with the Clean Air Act, in effect precluding our ability to quickly provide balanced, multi-model transportation services in the Southern California region.

I might add my own words. This increases the reliance on the private automobile and its inferential use of energy. There is a real stinker.

Mr. TRAIN. The mayor has given you, I think, an excellent example to get your teeth into, as to the various trade-offs involved. As you know, we have announced a transportation control strategy for Los Angeles which emphasizes the use of mass transit—the use of buses. The failure to allocate diesel fuel for those buses raises the problem which the mayor addresses, both in terms of being able to meet air quality standards and also the fact that it throws the individual back on his private automobile, which is what we are trying to get him away from in that area.

It also increases the energy expenditure. We have been aware of this particular problem and we have brought it to the attention of the Secretary of the Interior—or at least his staff—and urged that their rule of not setting up any system of priorities with respect to these allocations be modified in this kind of care. Here it seems to me that failure to assign priorities to this kind of use is, in a sense, biting off your nose to spite your face, and can only exacerbate both the air quality problem and the energy problem.

Senator MUSKIE. Thank you. I will yield to Senator Domenici.

Senator DOMENICI. I will wait until Senator McClure has finished. Thank you, Mr. Chairman.

Senator MUSKIE. Senator McClure.

Senator MCCLURE. Thank you, Mr. Chairman.

Again, going a little further than we did a moment ago, the chairman has correctly brought forth the statement in the CEQ report outlining a much larger tradeoff than was involved just in utility shifts from residual to coal. There is a problem within industry generally with respect to the lighter distillates that isn't associated just with blending.

It has to do also with the availability of supplies which is, again, not directly related to the environmental program. I think if we look just in terms of the environmental effects and the environmental cause and effect relationships then we begin to lose sight of the larger picture with which we are confronted and with which this act attempts to deal.

One of the questions that I have, I asked earlier with regard to your recent letter with its emphasis on oil. It was because of that larger picture of energy demand and supply that is unrelated to environmental goals or environmental restrictions. Certainly, not all of the shifts that have taken place are because of environmental restrictions, but some of the shifts from coal-fired to distillates or from coal-fired to natural gas are the results of two interrelated policies. One is the pricing policy of natural gas, which has been left much lower in price than competing energy forms, and the other is the environmental superiority. I think any industry executive, regardless of what his

industry might be, would be willing to pay a little higher price for a fuel that had no environmental problems than he would to buy himself into the uncertainty of environmental regulations. Wouldn't you agree?

Mr. TRAIN. I am sure that is right.

Senator McCLURE. So one of the things we need if we are going to get a balance in the consumption of energy is some predictability of the regulations under the environmental program. I am sure you are struggling with that. That brings me down to this bill that is before us. The 16-month period, which Senator Clark had made reference to earlier, in that period, how can we give them the kind of assurance that they want or need if we are going to get any kind of shift in production and consumption patterns? The energy is a very, very serious crisis at this time, and you have indicated that you think it will be with us for some time. It may change from a crisis to a severe problem, but it is still going to be with us.

It has been very hard to get the country aware of the severity of the problem. I am concerned that if we leave a 6-month period in here, in this bill, we may have said to the people of the country that there is no crisis, it will be over in 6 months. I would understand from your statement that you think that this problem in dimensions that need to be addressed by this act will last more than 6 months.

Mr. TRAIN. I think the point is absolutely correct. It is one that I brought up and addressed somewhat last week in hearings before the Interior Committee. I think that it is the kind of need which is addressed pretty effectively in section 2 of this draft bill, which permits the administrator to make a determination to go beyond the dates involved in the preceding section of the bill and set up a longer term program for a particular conversion. This involves putting that particular source on a compliance schedule so we can be assured that air quality standards are going to be met in due course and the source, itself, is assured that it has an identifiable program that they can rely upon for the period of time involved.

That should give those sources the opportunity to arrange long-term supplies, which is the real need.

Senator McCLURE. There is the problem of producing the supply at the mine, wherever it may be if we are talking about coal, the problem of shipping it, the handling facilities all along the line, and then the storage and consumption facilities at the point of use.

Mr. TRAIN. That is correct. These are very substantial problems. I wouldn't downplay them. They are very significant.

Senator McCLURE. Would it seem to make sense to you if we do couple, as we do in this bill, a beginning period—I have suggested maybe a 1-year period rather than a 6-month period only because it also relates to the action being taken on the emergency bill in the Interior Committee, in which that committee has decided to stick to a 1-year period—a 1-year period for the beginning of a conversion, and then a compliance schedule that would extend beyond the cutoff date in this legislation.

Mr. TRAIN. Assuming you want the dates to coincide, that would then be, I think, a very useful way of proceeding. It is essentially the

way the bill is here now, except section 2 really would pick up on May 15, I presume. I am just raising the question, and I am not entirely sure in my own mind, but if the period for which variances could be granted without getting into a compliance schedule is too long, you may create sort of a disincentive for sources entering into longer-term solutions. I know you don't want to do that.

So somewhere in here there is a breaking point. I would think 1 year would be fairly safe, but I don't have any real way of judging that.

Senator McCLURE. In other words, you are saying that the 6-month compliance schedule might lead more people to apply earlier than a 1-year period?

Mr. TRAIN. It occurred to me as I was talking that that might be an incentive to get people on a longer-term program with the compliance schedule and that, of course, is what I think you would want.

Senator McCLURE. I understand that dilemma. You never know for sure how people are going to read what we do.

This bill refers to——

Mr. TRAIN. In order to get people on schedules we all recognize you need leverage and the dates of this do provide some leverage.

Senator McCLURE. This bill refers, and uses this language in referring, to the latitude which the Administrator could use. It says, "Unless the Administrator determines that such suspension will prevent an eminent and substantial endangerment to the health of persons." This language is different from that used in the Clean Air Act or in the Environmental Protection Act.

My impression was it was the same.

Senator McCLURE. It is different from the language which is used in primary and secondary ambient air standards.

Mr. TRAIN. This is Mr. Robert Baum, the Deputy Assistant Administrator for Enforcement.

Senator MUSKIE. This deals with emergency powers. It seemed to us since we were talking about, in effect, dealing with emergency situations——

Mr. TRAIN. We refer to the Birmingham situation.

Senator McCLURE. I appreciate the clarification because that is correct. My reference was to the distinction between primary and secondary standards. How do you regard this language with relation to those sections? Does it impose any problem in administration?

Mr. TRAIN. No. As you recall, I raised the question about the other legislation, about granting a variance that would impinge upon the primary standards. I thought that would be a limitation beyond existing law. Probably it will be necessary under some circumstances, hopefully limited, to grant variances that may cut into primary standards. However, I think that the kind of qualification language here——

Senator McCLURE. I refer to the language on page 1 of the bill.

Mr. TRAIN. It seems to me that that is a reasonable limitation for Congress to require here. It does require a pretty extreme situation, and it seems to me that where you do have an extreme situation of that sort, eminent and substantial endangerment to public health, you would not want to grant a variance.

Senator McCLURE. Can we require them to be on compliance schedules in every instance that will meet the date required in the act for primary air standards? Are you confident that we can get fuel consumption in the areas and in the patterns that are necessary on timetables that will comply with the Clean Air Act on primary standards, or would you expect you might have to, in doing this, also grant variances from the attainment of primary air standards at the date set in the Clean Air Act?

Mr. TRAIN. I believe we should hold to the date because I think that that, again, is a very important point of leverage. At the same time, I think we must recognize that there are going to be cases where those dates cannot be met. I think even if every source went out today to buy and install stack scrubbing equipment, it is not going to be on line in all cases in order to meet the statutory dates. I think some additional flexibility is going to be required.

But I would certainly at this point not like to see that as a general extension of the dates, because I still believe that that leverage is very important. There should be a requirement of a strong showing by the source with a very heavy burden of proof to demonstrate inability for reasons that would be acceptable before an extension would be granted. That is the kind of flexibility I think we would have.

Senator McCLURE. That also imposes a difficulty in getting them to voluntarily shift in favor of fuel that buys the uncertainty of that kind of procedure; is that not correct?

Mr. SANSOM. Senator, if I understand your question, I think that is taken care of by your section 2, which continues the theory of compliance as expeditiously as practicable, and would allow a process whereby certain sources would be put on compliance schedules for use of controls other than fuel switching. I don't see where this would cause any delay by itself.

I think what Mr. Train was talking about is that we are well aware that in the next 6 months there may be some sources which will agree to switch fuels and agree to install scrubbers but still will not be able to get into compliance no matter what good-faith efforts are exhibited at this particular time. I think there should be probably a mechanism to allow these people, in view of the changed circumstances, to be able to do these things within the scope of the law, without being in violation of the law.

Senator, on that, I think our recent hearings on the availability of scrubbing technology had the date of 2 or 3 years coming up repeatedly as the time it takes to do the preliminary plans and specifications, and to put on the scrubber. I think I recall one of the southern power companies, I can't remember precisely which one, which was actually committing itself to second generation scrubbers, the regenerative systems without the solid waste problems. They were to have scrubbers installed by 1978.

I think as a general proposition it ought to be achievable. I think our concern is some of these utilities need to acquire the chemical engineering expertise to solve this problem. This seems to be the key. That could be, in selected cases, a real hurdle. I think that is the problem.

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Senator McClure. The reason that I mentioned the question is that earlier in response to my question, you had indicated that, yes, industry, in order to make a change, had to have some predictability as to what to expect. They are not going to invest the millions of dollars in facilities if they are not certain that they can use those facilities. There is no present way that we can, in every instance, tell them, with any degree of assuredness, they can meet the schedule of the Clean Air Act if they make a change now to a dirtier fuel. The stack gas scrubbing technology is coming along very well, but it is still not perfect.

It is still down on an average of at least 25 percent of the time, which, in certain air quality regions, is an unacceptable burden upon the air under existing regulations or under schedules that are required by the Clean Air Act. There is some expectation by some people that they can go into follow-on technology that will supplement the present scrubbing techniques, but that is not yet proven in the field. It is still just as problematical as many others, and yet industry is going to be asked to make substantial long-range investments in the face of uncertainty. I am not asking you to remove the uncertainties by saying, "Gosh, go ahead fellows, we will give you whatever you need," because that would obviously be impossible and unacceptable under the Clean Air Act. I certainly share with you the idea that we don't want to have a wholesale assault upon the dates and standards set in the Clean Air Act. I was trying to get from you some idea of the predictability for the variance schedules that might be required to extend beyond the cutoff date for the primary standards set forth in the Clean Air Act, and then probably more important than that, because I understand you are having some flexibility in meeting that variance requirement under the Federal Clean Air Act, more important and more difficult are the stricter standards imposed under State implementation plans which have been approved by the Federal Government and now become binding, which simply cannot be met by any existing technology within the time frame set by those implementation schedules. What I am seeking is how you view the problem, what you think might be done in terms of variance from the Federal act and, more importantly, variance from the State implementation plans in order to meet this problem.

Mr. Sansom. As I understand the proposed legislation, it would give the administrator the ability to write compliance schedules extending to 1977, which would be the 3-year period if they started January 1, 1974. I think under the law as I understand it, there was the possibility of going to 1977 with a 2-year extension and a 1-year extension on a source-by-source basis.

Perhaps I missed something, but that is my understanding. I think what we are saying is that in the general case, 1977 ought to be sufficient to put on the scrubber. I think the hearings would really support that, in terms of lead times and so on. But there may be selected cases where another year might be in order but those ought to be very limited in number.

I think the other thing that might concern us is if you make this too lenient, you might be affecting those cases that have the highest priority, where the strongest commitment exists for putting on the

scrubber because the health implications would be more significant than in the other cases. So I think we would want the sense of urgency.

Senator McClure. I will yield at this time. Perhaps we might have time for another round of questions.

Senator Clark. I want to say at the outset that I think this bill is needed and it is important, so I don't want to be misunderstood in terms of my questioning.

With regard to this whole question of the 6 months, the amount of time that we allow variances in the Clean Air Act, I very well understand your compliance schedule point that you made, and I think there is merit to it.

But I think it is really worth emphasizing that there are apparently several significant, practical ways by which we could save energy that may not be included in the emergency bill or in the President's proposals, that might make more sense than the very broad or long-term variances in the clean air standard.

I guess what I am saying is—is I think we have to be very sure that we explore all of the possible alternative methods of fuel saving before we commit ourselves to further violations of our air.

It seems to me that we are not hearing very much discussion—I am not speaking of this hearing but saying in general since the President's speech—about exploring other methods.

My question really is whether in your judgment there are other or alternative methods of fuel savings that were not included in the President's message or that are not a part of the Jackson bill or the Emergency bill which might make more sense to begin to explore or indeed to adopt than variations or variances in the clean air standards.

Mr. Train. First, it is plain, I think, that any variance system is not going to solve our fuel supply problems, so conservation measures of various kinds are of enormous importance.

I think this is where our first emphasis should be in trying to meet both this winter's problems and the longer term. There is no way that we can create 3 million barrels of oil to solve the energy shortage, but conceivably we can reduce demand by that amount.

Here I think it is enormously important that we give our priority to that kind of conservation effort and if we are successful in this, as I think we can be, we can do a great deal to ameliorate the individual hardships and also the economic maladjustments that we were talking about earlier.

That is exceedingly important. The President's message was very broad. I am sure there are other areas which were not referred to that offer promise.

For example, looking at the longer term, I mentioned recycling this morning. I don't believe the President mentioned recycling in his message. His message was really directed more to the immediate short-term problem than the longer term.

On the other hand, as I recall, he did discuss mass transit. I think that probably would fall into the longer term category of solutions.

I think there are a number of kinds of things that can be done in terms of recycling, solid waste conversion, secondary materials conversion, secondary materials recovery, all of which have substantial impacts in reducing our energy needs.

I think as far as short-term conservation is concerned, the President has identified a great many areas—the reduction of driving speeds, more car pooling, more use of mass transit, lowering thermostats, reduction in outdoor advertising, reduction of ornamental lighting for buildings. Measures of this sort can be very productive.

I think the State of Oregon has demonstrated savings of around 8 to 10 percent in total energy expenditures from this kind of program. I can't offhand give you any additional really substantial areas.

The Office of Emergency Preparedness Study of Energy Conservation identified a great many areas of potential savings. There are a great many, I think, in the industrial field which could be addressed but the President didn't really get into that kind of detail regarding savings in industrial processes.

I have already mentioned smaller automobiles. That is probably the single biggest item.

Senator CLARK. Was that mentioned by the President, to your recollection?

Mr. TRAIN. In earlier messages, yes. Obviously, as far as this winter is concerned, we can't very well turn the American market around as far as the automobile is concerned.

In earlier messages he did direct, I think either last April or last June, the new Energy Conservation Office in the Department of the Interior to explore new incentives such as taxes on horsepower to encourage purchases of smaller cars.

Senator CLARK. Would you say your own reaction to this in terms of the President's position would be very similar to the Jackson bill, that they have explored all of the alternatives to the best of your knowledge, in trying to find ways for saving fuel?

Mr. TRAIN. It is such an enormous area that I would hestitate to make that statement. I am sure there are other areas that could be identified.

Senator CLARK. It seems to me that that is what we have to do before we start violating the air, to be very sure that we have examined all of those or at least all of the major ones.

Now a counter question to that, from the other side of it: I was interested particularly in your first statement about the installation of control technology which would allow us to use less clean fuels as being a very, very important item in the long run.

I think that is very clear. Certainly, if we can go in that direction we can give great encouragement to the coal industry and others to go ahead and proceed with production.

I have been told, particularly in our State, and I suspect it is across the country, that the equipment needed to burn coal cleanly is not available or not available in adequate amounts to meet the need.

What about the dimensions of that problem? Is that something we are going to overcome in the next year or two or three? How big a problem is that?

Mr. TRAIN. It is a big problem. This kind of technology is very expensive. It requires a substantial investment. It is also, I gather, in the engineering sense, difficult to install. It tends to have to be tailored for each individual source.

I think this has been a part of the problem. It is our belief, and experience, I think, will bear this out, that where a utility makes the management commitment to go ahead with this, and puts the engineering expertise to work on tailoring a facility to its own particular needs, it can install adequate stack scrubbing equipment. It has been done both here and abroad.

I have no doubts now about our ability to solve this problem. I think the time frame is where there is some uncertainty. Therefore, I think it is very important that we keep the pressure on.

As I said at the outset, one thing this energy crisis is bringing home to us is that we are not going to solve the environmental problems associated with energy simply by switching fuels. It will have to be done in the long term by installing control technology.

Senator CLARK. I was particularly interested in the availability of that technology, in amounts, quite aside from the economic problems.

Mr. TRAIN. There are several manufacturers, at least, four or five major manufacturers, in this country producing this equipment. Most of them will tell you that the problem that they have is one of demand, not supply. Of course, when you get on the other side of the fence, the point is made that it is the supply that is the problem.

Senator CLARK. I have one last brief question.

I preface this by saying that I have great confidence in your commitment to the Clean Air Act from every indication before this committee and otherwise.

I am particularly happy that you are the person who will decide on the variances since you are committed to the Clean Air Act. From a bureaucratic description, how will you handle these variances? Will they come to you and you will do what with them?

Mr. TRAIN. At the present time they come in to us from our regional offices. We have 10 regions. By my letter of October 15 to the Governors, we have suggested some expedited procedures so that they can telescope the time required under the Clean Air Act. These variances are changes in State implementation plans. In order to change an implementation plan just as to put it into effect in the first place, there has to be public notice and hearing.

Under our regulations, this is a 30-day notice procedure. We have encouraged the States to ask for, and we will approve I have said, a 10-day procedure. An application is made by either the supplier or by the utility or both, if that is what is involved to the State authority involved.

Sometimes local regulations are involved. In New York City, for example, the levels that we are dealing with were set by local ordinance quite awhile before the Clean Air Act.

Those, of course, have now been given the force and effect of Federal law by being built into the State implementation plans and then being approved by EPA, and are enforcible by the Federal Government and by the States.

The State having received this application for a variance announces a public hearing, has the public hearing, makes up its own mind how it wishes to act on the variance, transmits this to our regional office, the regional office makes its recommendation and forwards this to the Administrator.

As I understand it under the law, I have to be the one who makes these decisions. As I pointed out, we have only had one variance application reach Washington this year. That was as of the end of last week.

I pointed out that this variance request, having been approved by the State of New York, was approved by the regional administrator and by myself here in Washington within a 48-hour period. This indicates that we do have considerable ability to move expeditiously.

It so happens that was rather an easy case to decide because it didn't really involve interference with either the primary or secondary standards, as far as we were concerned, but it did involve a violation of local standards.

Senator CLARK. Thank you very much.

Senator MUSKIE. Senator Domenici.

Senator DOMENICI. Thank you, Mr. Chairman. I appreciate your giving me this opportunity since I was delayed by other business.

Let me refer to a couple of things. First, the evidence that we have, Mr. Train, is that States like Oregon which have initiated a very extensive conservation program, if their projections work, will achieve about a 9 percent savings due to conservation approaches that are very similar to those recommended or suggested by the President and being considered by Interior.

This means that the best estimate is that we have about a 15 percent shortcoming; that even with maximum conservation we will be short on our abililty to cope with this, which I construe to mean that it is even more important that we have a national understanding of your role in terms of the variances. That will allow us to do a better job with the shortages and allow for changes in the kind of fuel used to make up the 6 percent, if we have everything else equal throughout the country.

The point I make is that, even with conservation at the maximum, we will have some problems. I commend you for your willingness to stand fast on keeping the power to grant variances within our agency where it belongs in my opinion. I do believe we are going to have to grant substantial numbers of variances in view of the situation.

I am concerned about three areas. First, the state of technology with reference to cleaning the stacks at this time.

From firsthand observation having observed the two kinds of stacks in the State of New Mexico—in the Four Corners area—the state of technology or economics, or both, coupled with the Clean Air Act have made a fantastic difference in the stacks we saw in the Arizona Public Service stacks and New Mexico Public Service stacks.

I understand that not far from that area, there are planned another series of coal-burning stacks for which, I understand, the designed scrubbers and cleaners will cause the source to comply with the primary and secondary standards.

Is that correct?

Mr. TRAIN. That is correct, sir. That is what we have been told. I have not seen whether there has been a review of this or not. If we are talking about the same plant, it is right there near Farmington, as I recall.

Senator DOMENICI. Yes; it is.

Mr. TRAIN. They have asked for a somewhat longer period of time than we would normally permit for the reaching of standards, but I think they have indicated they are going to be able to go to a considerably higher level of sulfur removal than required by the standards.

Senator DOMENICI. Correct. It is my recollection that it is in the 98 percent clean range.

Mr. TRAIN. It is very high.

Senator DOMENICI. That is a locally-owned company, although very large. The point I make is this: Is it EPA's view at this point—as we go to the variances and as we go to using higher sulfur coal where we hadn't used it before—has technology reached a point where you can insist that they devise a plan for installing equipment that would ultimately permit a continuation of the burning of the coal and yet comply with primary and secondary standards?

Mr. TRAIN. Yes.

Senator DOMENICI. So we are in much the same position that we are with General Motors, Ford, and others regarding the auto emission controls situation, where at least a major portion of the American industry says they can comply; is that correct? That is, will it comply with the primary and secondary standards through various technologies that apply to cleaning the stack gas, and so forth?

Mr. TRAIN. We say they can comply. I am not positive that they are all saying they can comply.

Senator DOMENICI. We will inquire of some of the coal representatives later in the day. I think it is important because, as you grant the variances, we want to insist (at least I do) that we don't slow down on the application of new breakthroughs in technology for cleaning the stack gas. I think one argument that was perhaps valid 3 or 4 years ago, that "we can't do it because we can't spend the money," is not appropriate when you consider the higher prices they will have to pay for liquid fossil fuels, if indeed there is enough to go around.

It seems that the price of natural gas will be so high that we are getting to the point where if we build in stability, where industry knows it can go on for years, they can use some new economic equations based on the new costs of control in comparison to their previous practices. Would you agree with that?

Mr. TRAIN. I certainly would. You are absolutely right.

I might make a point. As I said, we have recently completed very extensive public hearings on stack scrubbing technology. We have, I think, developed a very interesting record there. We had utilities in, some of them that we have held as being out of compliance. We had a large number of the manufacturers and suppliers of this technology in to testify. We had some foreign industrial people, particularly from Japan, also, as witnesses who have been involved with installing some of this technology, much of it American.

I think this committee might be interested in that. We would be glad to give you a briefing at some point either informally or publicly on what this record discloses to us.

I am not sure that, as yet, we have really had a chance to evaluate the entire record as it is quite extensive, but I think it would be of real interest to you.

Senator DOMENICI. I don't want to leave with the impression that this is an easy technology or that everyone agrees upon it, or that it is cheap. Quite to the contrary, it is very difficult, it is very new.

I understand that one technology using water is very cumbersome. I know of a big plant that started with a $19-million estimate to install it in two of its new stacks and they ended up spending closer to $70 million.

It may have been a very valid argument to say "we can't do it because we can't compete with natural gas" or "we can't compete with liquid fuel," but I think we are reaching the coal era and we will have to burn it. That means it is going to be the source of much of our energy and we will have to pay what it costs to clean it up.

Next, let me ask for a discussion from you on high sulfur versus low sulfur coal because I think it is very relevant to the discussion today. I know that there frequently is a tendency to use what is easiest to get and cheapest rather than to go with what is harder to get and maybe more expensive.

In the eastern part of the United States, obviously, low sulfur coal is hard to get and more expensive than high sulfur coal.

Can you describe the impact of your variance granting on what I think would be a natural desire that we move as quickly as possible to a maximum utilization of the lowest possible sulfur coals rather than the highest? Will there be any impact on moving in that direction because of the crisis this year, and do you see it as a problem?

Mr. TRAIN. I think there is a very strong incentive built into the existing law—and I don't see this changing—for bringing low sulfur coal into production. The price demanded by those relatively cleaner fuels certainly provides such an incentive. I don't think there is anything that we would be doing under the variance process provided by this legislation which will change that. Indeed, since longer term variances are going to be coupled with compliance schedules which will necessarily call for stack scrubbing technology, there is going to be an enormous incentive, I think, to find low sulfur fuels and use them for this purpose. But I don't think it is going to be the entire answer.

As we have said, it is going to have to be both low sulfur fuels and stack scrubbing technology.

Senator DOMENICI. One last question.

Senator MUSKIE. Would you yield for a question of clarification?

Senator DOMENICI. Surely.

Senator MUSKIE. Is there any supply of low sulfur coal of a quality sufficient to avoid the stack scrubbing technology? Is there some low sulfur coal that you could use without being concerned about scrubbing?

Mr. TRAIN. Well, your question has several aspects.

Senator MUSKIE. It is just a question of how much you have to achieve with your stack scrubbing?

Mr. TRAIN. In fact there are some supplies of low-sulfur coals that cannot be used and do not require scrubbers. But, these supplies are not extensive enough to meet all our coal needs. Scrubbers will be required to burn much of the available coal in an environmentally sound manner.

Senator McClure. Would the gentleman yield?

Senator Domenici. Yes.

Senator McClure. It has been alleged by many that many of the deep coals have less sulfur. If we could go deeper or reactiviate and reopen deeper mines we could produce a greater quantity of low-sulfur coals.

Senator Muskie. We may be able to get that information from our coal witnesses later this morning.

Senator Domenici. The last area that I am concerned with is this, Mr. Train: You have indicated that from time to time you have had to grant temporary variances in the past, and the bill that Senator Muskie and others of us have sponsored that is before us today will grant you some additional tools in order apparently to comply with the crisis we have.

How would you compare the number of variances that you would expect—this is just an estimate or a "guesstimate"—the variances granted last year with what you think you will have to grant this year?

Mr. Train. I am assuming it will be considerably higher this year. Last year we granted seven or eight, something on that order. I would suppose it is going to be considerably higher. I just have no way of putting a number to it.

Senator Domenici. I thank you, Mr. Administrator.

Senator Muskie. Senator McClure, have you further questions?

Senator McClure. I have just a couple of others.

I am still concerned about the question, which is unresolved and perhaps unresolvable, of the economic impact of the energy supplies.

One witness testifying before the Interior Committee on the Emergency Fuel Energy Act made this statement:

> The oil shortage combined with the anticipated curtailments of natural gas could mean a reduction of 5 to 10 percent or more of energy supplies to industry. Translating this into workers, the direct loss could run $750,000 to $1.5 million production job in industry. Total unemployment would go up 15 to 30 percent.

I wonder if EPA has been able to quantify at all the reduction in employment or the increase in unemployment as reduction in energy might occur?

Mr. Train. I would not imagine that EPA has made any estimates in this area. I would think the best sources would be the Council of Economic Advisers or perhaps the Department of Interior, which is more directly responsible for energy supply. I have no reason to doubt figures of that sort.

As I said earlier, I would be concerned that the energy shortages would have a disruptive effect. If you get into shortages of the magnitude described, 10 percent within industry, this is going to mean some jobs. There is no question about it.

Senator McClure. We might even have to forgo night football.

Mr. Train. I don't want to indicate where my priorities are.

Senator McClure. Until the Redskins won yesterday, there were quite a few of us ready to forgo the rest of the season.

Mr. Train. I was pointing out to the chairman before we met this morning that I was recently informed that one of the most energy-

consumptive activities that we have is color television. I don't know whether any representatives of that media are in the room, but it is undoubtedly very demanding of energy.

Senator McCLURE. Just a couple of other questions.

Senator MUSKIE. You wouldn't be able to see red faces then.

Senator McCLURE. Nor blue lips.

I have a couple of other questions.

The Illinois Manufacturers Association, according to a press comment, has made a study of manufacturing plants within Illinois that have operative coal-burning facilities and they allege that these, if permitted reactivation by a relaxation of clean air standards, could save 3.5 million barrels of fuel oil and 38 billion cubic feet of gas per year.

I just wondered if these kinds of savings have been verified by any staff study within EPA?

Mr. TRAIN. I don't know that we have any State-by-State breakdown. We have had figures which Mr. Sansom gave you earlier indicating that there are substantial savings involved in the potential to use coal in particular rather than oil.

Senator McCLURE. Just one last question. In your earlier statement you had made a comment concerning the Union Electric plant at St. Louis which is generating energy by burning waste. Was EPA involved in any way in a demonstration grant or any financial assistance?

Mr. TRAIN. I believe that was an EPA demonstration grant.

Senator McCLURE. The reason I asked that question is I worked for a year and a half to try to get EPA to put just a little bit of money in the one in Spokane, Wash., to assist the city of Spokane, the timber industry in north Idaho in its waste products program, and in conjunction with Washington Water Power Co. EPA turned it down and said they had no interest in that because enough work was being done on a demonstration plant down in Oregon, which later was abandoned.

I was quite certain the one in St. Louis had had some financial support.

Mr. TRAIN. Yes, sir, it had. There is no question about it. I suppose, not knowing the case or the facts about the Spokane situation, it would seem unfortunate, with the Expo there, that perhaps a project of this sort isn't on stream. But, I think we would say that the St. Louis project has amply demonstrated the technology and economics of the technology.

Really, what we need now is technology transfer rather than demonstration grants or any other form of grant.

Chicago, Ill., is also picking this up. I believe Commonwealth Edison has entered into a very substantial contract with the city of Chicago to apply this same process. I think it is exceedingly promising and something that we will want to watch nationwide.

Senator McCLURE. When you speak of technology transfer, that, of course, is true. The demonstration that they were seeking to make in Spokane utilized the fluid ice bed, which was a concept developed at the National Reactor Test Site in southeastern Idaho in terms of their chemical recovery and disposal programs. It also had the advantage of solving a problem which is plaguing the forest industry. That is how to dispose of the wastes created in the forest industry.

We thought that the conversion of a technology that was applied to an environmental problem in the nuclear age to industry's waste problem in the creation of energy was a most useful and hopeful sign. I am sure we will see more of it.

Thank you for your testimony this morning.

Senator MUSKIE. Thank you, Mr. Train. I believe it has been very useful testimony.

Mr. TRAIN. Thank you, Mr. Chairman.

Senator MUSKIE. Our next witness is Mr. Laurence I. Moss, president of the Sierra Club, accompanied, I understand, by Mr. Hawkins, of the National Defense Resources Council.

## STATEMENT OF LAURENCE I. MOSS, PRESIDENT, SIERRA CLUB, ACCOMPANIED BY DAVID HAWKINS AND RICHARD E. AYRES, NATURAL RESOURCES DEFENSE COUNCIL, AND BRUCE TERRIS, SIERRA CLUB

Mr. MOSS. I am accompanied by David Hawkins, on my left, and Richard E. Ayres, on my extreme right, from the National Resources Defense Council. They have been involved in the last 3 years in actions related to the enforcement of the Clean Air Act.

On my immediate right is Bruce Terris, who has been the Sierra Club's attorney in some of the litigation brought by the Sierra Club to enforce the Clean Air Act.

The last time we testified, one of the channel 5 newsmen came in and took a shot for about 30 seconds of Bruce testifying and labeled it on the news that night as Laurence Moss, president of the Sierra Club. People will wonder where I got the moustache.

Thank you, Mr. Chairman, for the invitation to appear before you today to present our views on proposed legislation to relax clean air standards in specific cases where necessary to provide an adequate supply of energy this winter.

We recognize that this is an emergency situation. All Americans must be ready to sacrifice to some extent if we are to be successful in coping with it. But the question of what is sacrificed, and when, is central to the fashioning of an optimum strategy.

The President gave his answer in his statement of November 7, 1973. He said that he needs "the necessary authority to relax environmental regulations on a temporary case-by-case basis, thus permitting an appropriate balancing of our environmental interests, which all of us share, with our energy requirements which, of course, are indispensible."

What kind of balancing takes place when you compare an "interest" with an indispensable requirement? And is it really an indispensable requirement for each of us to use 50 times the energy, to take the President's figure, as must other people in the world? Why not hold it to 40 times, or 30 times, if that will permit us to have clean air and water, too?

In considering the proposed legislation, this committee, with its record of leadership in the quest to protect and enhance the quality of the Nation's air, has an opportunity to put these matters into perspec-

tive. You can make it clear that the sacrifice of public health and environmental quality is not an action to be taken lightly; that it should be done only as a last resort, not as an initial expedient; and that there must be safeguards to insure that any such action is both necessary and temporary.

In that light, I would like to interject that I am concerned about the use of the word "imminent" in the draft of the proposed legislation. It implies that if people are not falling in the streets during the time of the pollution episode, it is OK to continue with the variances.

Senator MUSKIE. May I comment that the legislation is to modify conditionally. We are not talking about permanent variances which would have a long-term effect, but temporary. On both sides we are talking about something that is temporary and not buying a long-term denigration of clean air standards.

Mr. Moss. I understand, but it is possible that exposure for a few years could lead to manifestations which wouldn't be obvious immediately but would be obvious 5 or 10 years afterwards.

Senator MUSKIE. But we are not talking about years in this legislation, not as I understand it.

Mr. Moss. In section 2, it could continue for some time.

Senator MUSKIE. But the objective is temporary as against imminent. So if you were talking about long-term, you wouldn't talk about imminent. I agree with you.

Mr. Moss. It should be recognized at the outset that, again using the President's figures, no more than a small fraction of the estimated 2 to 3 million barrels per day gap between supply and demand for oil can be made up from the addition to usable fuels which will come about from relaxing clean air standards. The White House estimates potential savings of residual oil of 400,000 barrels per day by converting 46 powerplants to coal. In fact, even this figure is higher than can be realized, as representatives of the coal and utility industries testified before the Senate Interior Committee on November 8, 1973, because the "surge capability" in the production and transportation of coal is rather limited. So we must face the fact that the basic strategy in balancing supply and demand this winter can only be to use less energy.

I would note that Mr. Sansom this morning estimated that there were upper limits of about 180,000 barrels per day of oil that could be saved from plants that could easily be converted, about 23 plants.

Senator MCCLURE. May I interject that was utility plants he was talking about?

Mr. Moss. Yes.

Senator MCCLURE. It is not all of industry, but just utility.

Mr. Moss. You are quite right. The President, in his message, didn't spell out the expected savings from other actions.

Despite this knowledge, the conservation measures proposed by the President for immediate implementation are largely voluntary and are likely to fall short of what will be required. The use of rationing or "control fees" to dampen demand have been deferred. Each day that passes, with business being conducted more or less as usual, adds to the probability of severe impact later this year and early next year.

Our basic energy policy has been, and continues to be, to subsidize the energy companies. Depletion allowances yield tax writeoffs an average of about 16 times the actual investment in a producing well. Additionally, the writeoff of "intangible drilling costs" allows the entire investment to be deducted in the first year, rather than depreciated over the useful life as would be required in any other business enterprise. Foreign tax credits for what are really royalty payments or payments for partial ownership to foreign governments are credited against U.S. taxes. And then there is the tanker subsidy program.

It is doubtful whether, over the long run, these subsidies have the effect of especially enriching the bank accounts of stockholders in energy companies more than the stockholders in other companies; investment decisions are generally made on the basis of receiving a competitive rate of return, with income from subsidies included in, not added to, that return.

The main effect of the subsidies is to lower the price of energy below what it would be if it were set on the basis of covering all of the costs. Thus energy is "cheap"—and we use it in enormous quantities, often for purposes of little value, in preference to using other resources of labor, capital, and materials which are not as heavily subsidized.

I might add that these policies result in a lower rate of economic growth than might otherwise occur, because limited capital resources are directed into investments which yield a lower (not counting payments from the subsidies) economic rate of return.

If we must subsidize something in the energy field, let it be the operating costs of public transportation, or the installation of insulation and storm windows, or the purchase of water and space heaters using solar energy. Any reason to subsidize the gasoline used in automobiles has been nullified by events.

An essential element of an effective energy conservation program, then, is to get rid of these subsidies. In the alternative, an energy fee can be assessed at a level to roughly cancel out the effects of the subsidies. Price is all the incentive that is needed. Price controls, by the way, should be used sparingly if at all in competitive segments of the industry.

Under present conditions there is no excuse for keeping the energy companies on welfare, and certainly no good reason for sacrificing public health and environmental quality until that artificial inducement to use more energy is removed. So my first recommendation is that you make this a prerequisite for relaxation of clean air standards.

This brings us to a second essential element of a rational energy policy. There are high social costs associated with the production and use of energy. EPA, for example, has estimated that the economic damage caused by emissions of sulfur oxides averages about 25 cents per pound of sulfur. These damages include higher medical bills from increased incidence of pollution-related illnesses, and damages to property and vegetation. Under present policies these damages are usually paid by the victim.

Another example: This year the U.S. Treasury, in other words the general taxpayer, has paid $1 billion to compensate the victims of black lung disease arising from exposure to coal dust in mines.

There is no economic incentive for an industry to solve problems such as these when the victim or the taxpayer, and not the company, incurs the cost. Indeed, the present system encourages companies to not develop and implement effective control technology, since, as soon as that technology is shown to be feasible, the company will be forced to implement it, thus adding to its costs of production. It is asking a bit too much to expect companies to be enthusiastic in investing in enterprises which most probably will yield a negative return on investment. When the stakes are high, as they are with respect to abatement of emissions of sulfur oxides, it is not surprising that a strategy of resistance and delay, even at the risk of incurring fines, seems to be common.

The solution, of course, is to insist that the company pay the environmental and social costs. If this were done, and if the abatement costs were significantly lower than the social costs, the company would invest substantial sums and make diligent efforts to expedite solution of the problem. At the very least, if it were not solved, the very real social costs would be passed on to the user, so that he would have a more accurate measure of the true cost of the product in making decisions on how much to use.

The problems of sulfur oxide emissions to the atmosphere, the limited availability of low sulfur fuels, and the resistance of important components of the energy industry to the introduction of abatement technology are key ingredients in the dilemma we now face.

My second recommendation, therefore, is to assess a "control fee"—to borrow the President's phrase—of 25 cents per pound of sulfur emitted to the atmosphere. This might well be first applied in areas where the administrator finds that insufficient low sulfur fuels are available to comply with applicable emission limitations. No later than July 1, 1977, however, the control fee should be applied nationwide. I urge you to include this in your amendments to the Clean Air Act; in my view it will very likely spell the difference between success and failure in the drive to protect and enhance air quality.

There is a third way in which we encourage, through economic factors, excessive use of energy. It is the use of "rolled-in-average cost pricing" in the regulated—gas and electric—utilities. Under present conditions, where long-run incremental costs are greatly in excess of established costs, it results in—to use Senator Bartlett's words—"selling the goods from the cupboard at less than replacement cost."

I do not mean to imply that, in the case of gas pricing, this means that price deregulation is necessary. That depends on whether or not the gas supply industry is workably competitive, a subject which, as you know, gives rise to almost as much heat in Congress as might be supplied by the missing Arab oil. If the industry is indeed competitive, deregulation will lead to incremental-cost pricing. If it is not competitive, deregulation will lead to high prices charged to customers with no alternatives and low prices charged to those with alternatives. This would result in excessive use of gas.

The important point, though, is that prices should be based on long-run incremental costs, except perhaps in sectors of the market where demand is not at all sensitive to price changes, as is probably the case

for the initial small amount of electricity and gas delivered to each user.

Excessive profits can be avoided by lowering the price for this sector to counterbalance the higher revenues from other sectors in which incremental-cost pricing is applied. My third recommendation, then, is to specify that regulation according to this pricing criterion be another prerequisite to relaxation of clean air standards.

Rationing will probably also be necessary in the short term, because of the suddenness with which the effects of the oil cutoff are likely to be felt and the desirability of reducing demand more quickly than might occur from the other measures proposed. For these reasons, an effective rationing system should be another prerequisite for relaxation of clean air standards. The need for rationing should diminish and hopefully disappear, however, as the other policies take hold.

In summary, we need safeguards to insure that relaxation of clean air standards is truly necessary and not chosen simply because some might prefer to adhere to obsolete policies which artificially stimulate demand for energy. We need the leadership your committee can provide in making the public aware of the alternatives and their consequences, and in setting criteria and priorities to be used in making these decisions.

This is indeed a crisis. But it is also an opportunity to take a fresh look at the situation. Let us not miss that opportunity.

I would now like to call on Messrs. David Hawkins and Richard Ayers of the Natural Resources Defense Council to discuss certain additional points and to present some suggested amendments to the draft bill.

## STATEMENT OF RICHARD A. AYERS, NATURAL RESOURCES DEFENSE COUNCIL

Mr. AYRES. Mr. Chairman and members of the committee, I would like to address a few general remarks to the proposed amendments and then defer to my colleague to go into specific detail on suggested changes.

Mr. Chairman, we do face an energy shortage this winter. There is no question about it. On the other hand, I think there is a great danger of hysteria about the energy problem which will obscure the dimensions of the problem, the best means for dealing with it, and the cost in public health of some of the alternatives that have been suggested.

I think it is wise first to put into perspective the dimensions of the problem. What are we being asked to do? In effect, we are being asked to return to the consumption level of energy that we had 3 to 5 years ago. We are not being asked to return to the levels of 1900.

Our energy growth has been so rapid in the past few years that even a 15-percent shortfall represents only a few years' growth. Granted, that is not an easy problem to deal with, but I think it is wise to keep in mind that the problem is not one of returning to the Stone Age but, rather, one of returning to fairly recent levels of consumption.

Second, I think we need to look very closely at the means proposed for meeting the crisis. I think it has been amply shown this morning

that relaxation of the clean air standards will not meet the crisis for this winter.

The estimate of 180,000 barrels possible savings by conversion to coal is correct. At the outside, that is about 9 percent of what we need to make up our shortfall. It may be as small as 6 percent of what we need to make up our shortfall. That is not going to solve the crisis.

What that means, it seems to us, is that this committee needs to look even more closely than it might otherwise at the possibility of using that kind of means to meet the shortage. If it is not going to have much effect on the shortage and it is going to have quite an effect on public health, then it is not something the committee should allow to happen if it can possibly prevent it.

Then I would like to turn to the health and welfare effects on the proposal to relax the standards for this winter. I think these have been stressed all too little in the debate so far and they are very serious. In fact, the evidence has been accumulating rather rapidly in the last year that the effects of relaxation of burning much higher sulfur fuel are more serious even than the committee thought in 1970 when it passed the Clean Air Amendments.

To begin with, it is fairly clear from analyses done by the Environmental Protection Agency earlier this fall that the areas in the East which are the crucial ones as far as the shortage is concerned in many cases cannot absorb further high sulfur fuels without violating the national air quality standards. I am speaking of the major eastern cities. I think as a base line we must realize that large substitutions of fuel in those areas are likely to result in violations of national standards which are defined in terms of health effects on people. And they are also likely to result in the exposure of large numbers of people since this is the area where a large proportion of our total population lives.

In addition, though, there is evidence mounting that damage occurs to health as well as welfare at levels of sulfur oxides in the air well below the national standards.

I am referring particularly to the effects of sulfates which are only now being documented but which are known to the Environmental Protection Agency.

I would like to read just briefly from two memoranda that were recently transmitted within the agency on this very problem. Here is one from the agency's Triangle Park Research Center from one of the directors, who concludes as follows:

> My conclusion from examining this material that is, the studies that EPA has recently been doing on sulfates, is that we are seeing urban and regional non-urban sulfate levels exceeding the short-term threshold for adverse health effects.

That is based on an examination of the air quality as it exists today.

The second memorandum has the following to say:

> We now have scientifically defensible evidence that definite increases in deaths occur at exposures below existing significant harm levels for sulfur oxides and and particulare matter. These data were recently obtained from five years of observation on daily mortality in the New York Metropolitan Area and were carefully adjusted for other major influences on daily mortality. The results are striking and raise some crucial policies as well as scientific issues.

The memorandum goes on in that vein.

What these memorandums mean, it seems to me quite clearly, is that we are already experiencing levels which are doing a good deal of damage in these cities. If we convert to coal burning in these cities, we are talking about increasing the output of sulfur oxides from major powerplants by as much as 10 times in some cases. So what we are talking about is very significant increases even in the short run, and the dangers to which these populations are exposed.

A study which was done in 1970 and which has never been refuted argued that for each year's exposure to an additional 10 micrograms per cubic meter of sulfur oxides in the air it could be expected that there would be a loss of three-tenths of 1 year in longevity per person.

If we burn coal in the major metropolitan centers we are likely to have increases well beyond 10 micrograms. If we expose millions of people to those levels we are talking about millions of years of loss in longevity even over a short period. It is these kinds of findings which make us concerned that the last measure that should be invoked as a means of coping with the energy problem for this winter is relaxation of the requirements, the emission requirements, presently existing on major powerplants, particularly in the eastern area.

If against that is said also the fact that contributions that could be made to solving the problems is rather small, then we think it is an unwise policy to think in terms of relaxing these standards except in the most extreme cases.

I would like to turn to Mr. Hawkins who will go through the implications of these general thoughts for the specific legislation that is before the committee.

## STATEMENT OF DAVID HAWKINS, NATURAL RESOURCES DEFENSE COUNCIL

Mr. HAWKINS. Thank you, Mr. Chairman.

First, I would like to point out that contrary to the chairman's understanding, the bill that we are addressing today is not a temporary variance bill. It is a bill which will allow long-term exposures to hazardous levels of air pollutants for years, for several years, 4 or more years. This is done in section 2 of the bill which permits conversion to high sulfur coal on the showing that by 1977, cross your fingers, we will have scrubbers put onto the converted plants.

I think Senator Muskie recognized this in his press release of Friday where he stated—

> We have the opportunity to guarantee the coal industry that their investment in new, safer, deep coal mines will be justified on the basis of a long-term commitment from utilities and industries to burn high sulfur coal.

This long-term commitment, unfortunately, the way this bill is written, may be made and may be implemented a long time before the scrubbers are available. So we are talking about a period, and I will address this further, of up to 4 years or more where the major cities of our country could be exposed to levels of pollutants in excess of the primary standards due to powerplants which have converted to high-sulfur coal and have not yet put on the scrubbers.

As to the bill, we do agree that mechanisms are necessary to insure that the variance provisions this winter in air quality control require-

ments do not get in the way of providing essential fuel supplies at the times they are needed and at the places they are needed to prevent serious disruptions and hazards to other human health this winter. So we have no quarrel with the need to make sure that there is a flexible policy this winter to permit, when necessary, after we have employed available conservation measures, the relaxation of emission requirements so that we can provide essential supplies of fuel.

Second, we also agree with a thrust of the second section of the bill which is that a technique is required now to force present sources which are relying on fuel switching as a long-term compliance strategy, to deal with the realistic possibility that they may not be able to rely on that strategy and to get them onto another strategy which has more promise in the long run, namely scrubbers.

What we are concerned about, however, is what happens in the interim, before the scrubbers are put on.

As to specifics, section 1 of the bill would have a new section (g) (1) to 110 of the Clean Air Act. It would deal only with this winter although Administrator Train did point out that perhaps it should allow variances for a full year.

First, I should point out that something that was not addressed by the committee or by EPA during its testimony this morning is the essential need by EPA for redistribution authority of fuels. In order to minimize the exposure of large populations even for the 6 months or a year that we are talking about to hazardous sulfur oxide levels, EPA must have redistribution authority with respect to sulfur content of the fuels.

Once the office makes an allocation on so many barrels of diesel fuels to so many parts of the country, EPA should have the authority to shift the available supplies around relative to sulfur content.

Second, we think there should be a presumption that the public is entitled to notice, hearing and explanation of the necessity for these variances unless the emergency requires shortening and a doing away with such procedures. We don't think that it should start from the premise that there will be no procedural assistance whatsoever to the public, no procedures to follow whatsoever. The procedures should be waivable if an emergency is demonstrated.

If someone comes in and says he has no more fuel the day after tomorrow, clearly you don't have a 10-day hearing period and notice. But if someone comes in and says, "We are going to have a problem next month," there is no reason to give EPA essentially dictatorial powers to just act by fiat with no notice to the public, no notice to any Governors, no notice to any city mayors.

So we are suggesting language which will permit the holding of a hearing on reasonable notice but which can be shortened if the exigencies requires.

Second, there shouldn't be a freezing out of the courts of the public and public officials with respect to judicial review. First of all, this is discriminatory even in the energy legislation that is presently before Congress. The Interior Committee's emergency energy bill does provide for judicial review for those people whose economic interests are injured by any action taken by the President with respect to coal

conversion or fuel allocation. Yet those of us who breathe the air are going to breathe dirtier air due to the same decisions and we are frozen out of court.

So I would argue that this is highly discriminatory.

Moreover, it is unnecessary. The courts are not going to hold up programs which are essential to keep people from freezing. Moreover, environmentalists are not going to go into court in those situations. They are not going to be unreasonable; they are not going to try to stop programs which are essential to meet critical needs in critical areas.

As for our group, I think we are certainly willing to warrant we are not going to go in and try for preliminary injunctions to stop these allocation programs. That doesn't mean, however, there should be no opportunity for judicial review.

I might point out also that any suit under section 304 of the Clean Air Act requires a 60-day notice. This also eliminates the possibility that some group or citizen is going in and tie up this approach. But it is simply not going to look very fair to the American public to freeze us out and make it a star chamber proceeding where the people who are going to be affected have no knowledge of what is going on until they see the black smoke coming out of the smokestacks on the street.

Second, with respect to section 2, as I said, we agree with the technique that is needed to enforce plants which are presently relying on fuel switching to clean fuels as a compliance technique to get them onto scrubber systems and reliance on coal-cleaning technology.

The critical defect of this section as it is written, however, is that it will allow the burning of high sulfur coal anywhere for at least the next 4 years.

The President, or his Energy Policy Office, will be the ones making the decisions which plants to convert, not EPA. This is the way it is set up in the Interior Committee Act. So there is no control by EPA over where and which plants are converted.

Let's assume that there is a need to convert certain plants to coal over the next few years. Should there be a bill or a set of bills written which completely strips EPA of its authority to determine where those plants should be converted?

Under the bills as now written, the President or his Energy Policy Office could require the conversion of all five convertible plants in New York City to high sulfur coal. The impact on New York City residents, millions of New York City residents—and I am satisfied to see that Senator Buckley, whose constituents will be affected by this, is not here today——

Senator MUSKIE. I may say for Senator Buckley that he is in the markup on the emergency energy bill in the Interior Committee. He couldn't be at both places.

Mr. HAWKINS. I was not implying that he was derelict, but I think he needs to hear what the purport of this bill is and what the impact on his own constituents is. I hope that it will be brought to his attention. He is one of the few members of this Public Works Committee, besides the chairman and Senator Stafford, who is from one of the critically impacted Northeastern States. It is important that those

whose constituents will breathe the dirtier air that may result in the next 4 years be aware of just what this bill provides.

The way this bill is written now, it would allow the conversion of all five of those convertible plants in New York City and the impact would be tremendous. I think that Commissioner Hart, from New York, who is going to testify later, can describe the amount of that impact.

The only thing that EPA would be able to do in response to such a Presidential order would be to negotiate compliance schedules to put such plants on a compliance schedule to install scrubbers by 1977 or earlier, if possible. But we have heard testimony from Mr. Sansom this morning that 2 to 3 years at a minimum is required to install such scrubbers.

In the interim, in that 2, 3, 4 or, I think more realistically, 6-, 7-, or 8-year period the residents of New York City will be exposed to the polluants caused by high sulfur coal and EPA has no power under the present legislation to avert such a scenario from occurring.

Moreover, letting them burn coal now destroys, it doesn't create, an incentive to perfect scrubber technology. It weakens the incentive. The power and coal companies will have what they want, long-term commitments and contracts. They will have the status quo working for them. They will be burning the coal.

Right now they have an incentive to perfect the coal cleaning and stack gas scrubbing technology because there is something standing in the way of its widespread use.

However, if this legislation goes through the President will be allowed to convert any plant to coal and the incentive will be weakened because they will know that they have the momentum with them and it will be in their interest and it will be an incentive for them to say—

> Let's wait. We still don't believe that that scrubber technology is ready. Yes, we know we said we would have it done by 1977 and the bill requires it, but what are you going to do, shut down New York City? We don't have it ready.

I think this type of environmental blackmail is exactly what is being set up if we allow conversion to coal without requiring that scrubbers be installed.

The important thing is that scrubbers have to be installed at the time there is a conversion to coal, at least in major urban areas. Perhaps some conversion to coal could be tolerated in nonurban areas provided the scrubbers are installed as quickly as possible. The problem with section 2 of the committee's bill is that it allows the conversion to coal now merely on the promise that, on paper, there will be scrubbers later and in the interim you are exposing many millions of people in urban areas to high and hazardous levels of sulfur oxides resulting from coal.

I would like to suggest some remedies that will permit the basic goals of this legislation, which is to get plants onto scrubbers and to provide an opportunity for long-term switch to coal use and use of coal consistent with environmental needs in our powerplants, but will do it without exposing millions of people in the intervening years to high and hazardous levels of sulfur oxides.

The first is that EPA must have authority to redistribute fuels. This does not mean countermanding the President or the Energy Policy Office's decisionmaking authority. It simply means that once the Energy Policy Office has made a decision with respect to the type of fuel, be it diesel, residual or crude, or some other type of fuel, then EPA can analyze what the supply picture is due to the President's allocation decisions and see whether the allocation has been done also on the basis of sulfur content to represent the best practicable distribution so that we can minimize sulfur oxide exposure to our population.

The second is that EPA should be given the authority to select the actual plants which will convert to coal once the President has specified the amount of plant capacity which should convert. This should not be an inconsistent or difficult burden to place on the President's decisionmaking authority. If he is allowed to specify the capacity which should convert, then it shouldn't result in any impact on our energy supplies. But if EPA is allowed to select which plants will convert, then at least you have an opportunity to keep the conversions out of the large metropolitan areas.

The third thing is that for conversions in areas which may violate primary standards, those should be done only after we have employed all available energy conservation measures.

Senator Clark pointed out, I think with eloquence, several times this morning, are we doing all we can reasonably be asked to do with respect to energy conservation measures? I think that that can be emphasized when we say the alternative is exposing large populations in urban areas to high sulfur oxide levels. I do not think we are doing all we can do. I think the authority in the Interior Committee's bill with respect to the energy conservation measures is in great respect discretionary with the President, whereas the coal conservation aspects are much more mandatory and are much more likely to happen first unless this committee, in writing the variance provisions with respect to the Clean Air Act says that the first thing that should happen is that we should get as much mileage as we can out of available and reasonable energy conservation measures and that EPA should be allowed to exercise the fuel redistribution authority, and only if we are then in a position where we can still not meet critical energy needs I think all of us agree the standards should not stay in the way of someone who needs heat for his home. No one is asking for people to freeze, but the things which should be done first are the energy conservation measures and EPA's redistribution authority.

Finally, the type of revision in section 2 that is required in the State plan should be broader. That is, we shouldn't look only at the possibility of switching the person to more available fuel, but, rather, we should ask are there ways that the State can act to make more clean fuels available to the source which is having trouble in complying?

For example, the State utilities commissions could be asked to set a rate structure which would, in effect, set a penalty charge for consumption by certain categories of consumers over and above their last year's consumption, or perhaps over and above 90 percent of their last year's consumption.

This is something that the State could employ as a reasonably available measure as part of its State implementation plan. I would make

more fuels available. There are other energy conservation measures that the States should be employing, and they should also be employing whatever power they have to redistribute fuel within their areas or by compact with other States within interstate areas.

Those are some of the approaches.

Basically, it is one of priorities. There is a real threat in the bill as presently written that millions of people will be exposed to hazardous levels of sulfur oxides because power is put in the President to convert any plants he wishes, be they in major urban areas or not in major urban areas.

The only quid pro quo that EPA is given is that they can require scrubbers to be put on 4 years from today.

I think that we can avoid by emphasizing the priorities of energy conservation and giving EPA unquestioned authority to redistribute fuels with respect to sulfur content.

Thank you.

Mr. TERRIS. The first question is whether the first thing one does is to relax environmental standards or whether it is the last thing. The President's proposals, for example, have no relative energy conservation in them.

Senator MUSKIE. Has anybody seriously argued that that is the first thing we do?

Mr. TERRIS. This bill, if passed by Congress before, for example, we have either rationing or a high tax on gasoline usage, it seems to me would be Congress' answer that certainly among the very first things that will occur will be relaxation of environmental standards.

Senator MUSKIE. That is not our intention. I haven't heard this argued, but make your presentation.

Mr. TERRIS. Let me just make my point.

It seems to me the chances of getting tough energy conservation measures passed depends that the environmental ones not occur before the other things are done. So far as I know, there are no bills that are about ready for adoption in Congress which would, for example, impose a high tax on gasoline, a measure which could easily be adopted in the sense that it is not complex like redoing all pricing policies on energy for the country.

In fact, it is a proposal that I think—it is well known—went to very high levels within the administration before it was rejected.

It would seem that the starting point should be those kinds of rules and that variances to the environmental standards should come at least not before those kinds of tough conservation policies. It seems to me the reason why that is clearly the right approach is because one is balancing, as Mr. Ayers has said, and people will die from the fact that there will be more pollution in the air.

EPA's studies show that if we violate the primary standards there will be additional deaths that will result. That is the balance on one side. We may have to do that so people do not freeze. There are other ways today besides pollution.

We should get rid of nonessential uses. There is no doubt that virtually all Americans waste gasoline and other forms of energy. My point is a simple one: Before this legislation would pass Congress I would urge that some very clear and tough energy conservation measures be

passed that go beyond the voluntary request to the American public simply to turn down the thermostat.

Senator MUSKIE. May I say that we will try to finish up with these witnesses this morning but I don't think we can go beyond 1 o'clock and then come back at 2. I do have some questions.

Senator MCCLURE. Mr. Chairman, I wondered—I am already late for an appointment and I wonder if they will be back this afternoon when we reconvene so that I might keep my other appointment?

Senator MUSKIE. I am certain we can arrange that.

Senator MCCLURE. Thank you.

Senator MUSKIE. I will ask one or two questions now and reserve the balance of my questions for later, since these witnesses will be back this afternoon.

I gather from the statement you have just made that all of you gentlemen are opposed to any legislation of this kind?

Mr. HAWKINS. No, Senator Muskie.

Senator MUSKIE. Let me put it with a followup question. You are talking about the legislative relatives of prospects.

Mr. Moss recommended; for example, that we get rid of all the subsidies to the energy industries as a prerequisite for relaxation of clean air standards. If we were to undertake to get rid of depletion allowances and all the other subsidies described before we pass this legislation, for all practical purposes he is against this legislation. We will not get that done in the next week or two.

Then the second recommendation, to assess a control fee of 25 cents per pound of sulfur emitted into the atmosphere. That can be a complicated kind of legislative chore.

The third one is that there be a pricing criterion as a prerequisite to clean air standards.

Your whole list of prerequisites, Mr. Moss, if you lay out a legislative agenda that will not be met in my judgment, will not get the legislation on the books.

If you are adamant on those points, the effect is opposition to the legislation.

Mr. Moss. I think it is quite possible to pass this legislation but to make its operative provisions conditional upon other things happening in an interim period.

Senator MUSKIE. Do you mean the condition that the administrator shall not use his authority until Congress has acted to eliminate the depletion allowance?

Mr. Moss. In the case of the depletion allowance and other subsidies I did propose an alternative, to impose an energy charge which would be the equivalent of the subsidies to counterbalance.

Senator MUSKIE. That is complicated, too, legislatively. It is not that it is without merit. I am not saying that. But this question of adding charges may be seen by you as one way but other people don't.

To get legislative action is a time-consuming proposition.

Mr. Moss. The answer to your question is yes, I don't believe we ought to go ahead and allow this considerable increase in pollution levels that I think would result from this legislation before taking other rationale and what I consider to be essential steps.

Senator MUSKIE. That is what I am trying to nail down.

I understand you to say that. I understand you to make that point so vigorously and firmly that for all practical purposes you are against the legislation because the legislation is geared to the short-term, spot, emergency situations. You interpret it differently than those of us who introduced it, but that is its thrust.

If you lay down as a prerequisite a legislative challenge that cannot be met before the onslaught of winter, then you are opposed to the legislation.

Mr. MOSS. As you say, there is this difference in interpretation over whether this is really short-term legislation or legislation which will cause significant increases in air pollution for several years.

Senator MUSKIE. Getting away from the differences with respect to language and provisions, and you have made some interesting suggestions in that respect, I am talking about the broader policy changes that you say you would insist upon before we initiate this legislation even if we were to accept your proposals for modification.

Mr. MOSS. Let me make a suggestion. We are somewhat less disturbed by section 1 because that is clearly limited to a 6-month period. I think with a few of the changes that have already been suggested by some of us in section 1 with respect to due process, I certainly wouldn't be willing to endorse the idea of handling the short-term, truly short-term, situation this winter by legislating something like section 1, but I think the kinds of actions which could be taken in section 2 should be conditional upon these other steps being taken.

If they are not, then it means we are putting the environmental quality lower on the list and maintaining the status quo.

Senator MUSKIE. I have no objection to your making your case and point of view as vigorously and as strongly as you wish to. As a matter of fact, it is some help for this record to have you do so. All of the vigorous rhetoric is coming from the other side, the energy crisis side, the energy industry side, and from citizens who are concerned about the impact on their ability to heat their homes and hold their jobs, to run their cars, to get to doctors, to get to shopping centers and so on if they don't have the fuel to move.

So all the rhetoric is coming from that side.

I welcome this testimony, but I want to put in proper perspective the legislative realities with respect to achieving some of the objectives that you have laid down. They are all meritorious, the long-term ones and the short-term ones. But we have to focus on today. We are not going to solve the depletion allowance issue in this committee; we are not going to solve some of these other issues in this committee in the next 5 days.

But what we have to focus on is this piece of legislation. Is it something that ought to be adopted? Can it be improved upon? We have to focus on that.

On the longer-term ones, I am glad to have the record made, but I was trying to get the real focus of your interest in this bill. Are you trying to prevent its passage altogether by laying down impossible prerequisites? That is what I am driving at.

Mr. TERRIS. I agree with you completely, Mr. Chairman, if the bill is changed to make sure we are talking about 6 months to a year and

not extending it into the future, with only one exception. I agree with you to the extent you are talking about depletion allowances, pricing policies and what have you, which quite clearly are very tangible issues and will take considerable time. But there is one particular matter which is not complex and that is a gasoline tax.

I think probably any member of the committee could write an increase in the gasoline tax.

Senator MUSKIE. I don't at this point, agree with you about it because I think the effect is to impose the burden of the energy crisis on those least able to carry it. That bothers me.

From the point of view of maybe reducing demand for energy I think there is merit, but I have to hear more argument on this other point.

You know, already there are millions of Americans, older Americans, poor Americans, discriminated-against Americans, who can't get to doctors, who can't get to jobs, because there is no public transportation. They rely however they can on private automobiles. I wish that were not the case. I have tried to do something about that in the Congress. But, if what we are going to do is increase their problem of getting to vital services and moving about, I don't buy your solution any more quickly than you buy ours.

Mr. TERRIS. There is a response to that, of course, too. That is a method which, in effect, works very similar, for example, to food stamps, to have any low-income person be able to receive back the additional tax. It would have very little effect.

Senator MUSKIE. Do you think you can set that up in 24 hours?

Mr. TERRIS. I don't think you can set it up. The question is whether you can legislate it, not whether it would take time to set up, as anything else would take time.

Senator MUSKIE. You have the problem of setting it up legislatively in a way that assures everybody who is concerned about the problem that it will work. This isn't done in 24 hours.

Mr. TERRIS. There is certainly a way to legislate, as Congress does very frequently, in relatively general terms with clear directions as to what you want that would allow administrators to do so.

Senator MUSKIE. But you have been telling us all morning the dangers of hasty legislation.

Mr. TERRIS. We are going to have hasty legislation, no matter what.

Senator MUSKIE. Exactly.

Mr. MOSS. I don't think the legislation now being considered by the Senate Interior Committee is any less complicated or less fraught with dangers than many of these aspects.

Senator MUSKIE. I agree. That is why we have this legislation. You have not commented on what this looked like in its original form a week ago before the Interior Committee. This would have given the President, indeed, a blank check. So what we have tried to do in the last week is to narrow this, focus it, make it more precise with fewer long-term implications, and we are still working at that task. We are going to look at some of your proposals. But when you ask us, in addition to refining this legislation, to change these broad policies as a condition to doing anything with this, we might just as well close up

the hearing and go home. We are not going to do that much in the time available.

Senator DOMENICI. Would the chairman yield for an observation?

Senator MUSKIE. Yes.

Senator DOMENICI. I want the distinguished gentleman to know that I, too, appreciate the opposite view, and that I, too, am not anywhere near convinced that a high tax on gasoline is the fair and equitable solution. I would much favor a sufficient tax instead.

My correspondence indicates that when we are talking about raising gasoline prices 1 cent because of the cost of living, that that yields $1 billion to the American taxpayer's pocketbook. I would favor 2 or 3 cents to be used to enforce rationing on an equitable basis and not the 20 or 30 cents that people have been talking about, since we have permitted almost every American of low- and modest-income to rely on the automobile. Would we want to say: "Let's impose this enormous tax to thwart use of gasoline and then we will make it up later on by some complicated income tax deductions?"

All of that would mean is that the poor people will end up not being able to pay for their gasoline while others who don't have to worry about paying 20 or 30 cents more per gallon will drive a car from California to New York.

You are saying to us, "We have been telling you for years," I think you have told us many times, Mr. Moss. You told me once in response to a question that when we get rid of all these intangible elements, like subsidies and the like, you would look at the crisis.

I asked you that 6 months ago. Now we are here. The crisis is here. The Congress is not any closer to getting rid of the subsidies and all the other payments we are making to this energy source, as you indicated, but the crunch is upon us. So I don't think you are presenting a viable alternative.

I think you are saying that we need 3 or 4 years of legislation and then we would agree with you that something of an emergency nature is needed.

I also think there are many inconsistencies in the presentation. I don't want to go into them now, but I do believe the Sierra Club asked Interior to make certain modifications in the bill to grant the President authority to redistribute scarce fuels. You proposed an amendment which has been adopted, as far as I know, in another session by the Interior Committee, to insert language that such priorities and rationing programs shall include, but not be limited to, measures adequate to insure that low-sulfur fuel will be distributed on a priority basis to those areas of the country designated by the Environmental Protection Agency as requiring it.

In that case you are saying the President should do it, with EPA making recommendations. That is how I read it.

I know you are not so recommending, Mr. Hawkins, but I think the Sierrans did. I don't think there is so much difference between the President and EPA acting during a 6-month to 1-year crisis that we ought to spend all this time determining which is which.

Did you recommend that? Would it not do part of what you are saying must be done on redistribution as part of the allocation bill that is before Interior?

Mr. Moss. I don't know that I would make a big point of the difference between the President making that decision and EPA making that decision, except that it makes certainly a lot of sense to me to have the people who are closest to the working level of the environmental impact arising from specific sources so that they can allocate fuels among sources.

I would hope that the President would delegate a certain amount of that authority to EPA in any case; we suggested that that be spelled out in this legislation.

Senator DOMENICI. I guess the point I am making, Mr. Chairman, is that they are testifying before us with a kind of vigor about the need for redistribution authority.

I don't notice that any of you took the trouble to tell this committee that you had recommended language that you were quite sure was going to be adopted before Interior on the conservation bill. Am I correct or not? Did you recommend it and will it not partially solve the problem?

If so, why didn't you tell us about it this morning?

Mr. HAWKINS. I would recommend it, but there is no inconsistency here. What was recommended is that the priority program include measures which are adequate to insure to the fullest extent practicable that these redistributions will occur. However, there was no attempt to address the points as to who should exercise that authority.

After that amendment was proposed and adopted by the committee, the administration submitted an additional amendment which makes it clear that the President is going to determine everything.

It is our concern, and we have extensive communications with EPA officials since September when Governor Love's office started talking about what needed to be done this winter, they made it clear to us that Governor Love's office is not interested in the low-sulfur aspect of the issue at all. There is no motivation there. The agency where there is motivation is EPA, but EPA does not have the authority unless Congress gives it that authority.

The proposal that we put forth to the Interior Committee made it a requirement that someone in the executive branch exercise that authority. We hope that the legislation would be sufficiently unclear on that point that EPA would be able to make a strong argument that it should exercise that authority.

However, a subsequent administration amendment says the President shall direct the implementation of each measure in this whole panoply of measures. We have a great concern that the agency with the motivation to do the job is important. It is not the mission of the Energy Policy Office to try to get the low sulfur fuels to the areas that need it the most.

Senator DOMENICI. I do not want to belabor the point, Mr. Chairman, but I must comment a little bit more.

You were aware of the history of this bill including Senator Muskie's effort, joined by most of us, to keep within the framework of the Clean Air Act and to maintain Mr. Train's agency's enforcement of variances, even though originally Interior would have had the authority in the conservation bill. So our motives were to do precisely what you are speaking of in your last explanation to me.

You are aware of that history. What concerns me is that you come before a completely different committee, and I just happened to have sat on both—Senator Muskie was not in Interior either as part of Senate Joint Resolution 45 or otherwise—you come before us today and you address the issue of redistribution as if there is nothing pending giving anyone authority to be concerned about it.

I am concerned that you didn't mention it to us even if you think there is a difference of opinion as to where the authority should lie.

Basically, the other bill almost solves the problem. We could take that language and put it in this bill with an indication that EPA would enforce it and we would have what you are talking about. So I don't think you have been quite fair and I think you have overemphasized the effect of section 2 of this legislation.

When I come back at 2 o'clock, with the chairman's permission, I want to go into what real difference there is—not imagined difference or speculative difference—but what real difference there is in 6 months under this act versus the present variance authority that Mr. Train already has. I think we ought to explain carefully to the public what he already can do versus what he is going to do under the emergency act that Senator Muskie proposes and then let's try to draw real conclusions as to what changes really will be effective.

Thank you, Mr. Chairman.

Senator MUSKIE. I appreciate that. I think we ought to break. I would hope this afternoon when we come back at 2 o'clock that we can cope with some of your proposals for change in this legislation. The longer term objectives that you have laid out I think are meritorious and worth consideration. But given the time constraints on our committee, I think I would like to zero in on the specific changes you would like to see in this bill. I think you have some very interesting and useful ones. I think they are deserving of consideration.

Unless you want to say something else now before we recess, we will recess at this time.

The committee will stand in recess until 2 o'clock this afternoon.

[Whereupon, at 12:55 p.m., the subcommittee recessed, to reconvene at 2 p.m., the same day.]

AFTER RECESS

[The subcommittee reconvened at 2 p.m., Senator Edmund S. Muskie, chairman of the subcommittee, presiding.]

Senator MUSKIE. The hearing will be in order.

## STATEMENT OF LAURENCE I. MOSS, PRESIDENT, SIERRA CLUB, ACCOMPANIED BY DAVID HAWKINS AND RICHARD E. AYRES—Resumed

Mr. MOSS. Senator, may I make a brief statement in response to the discussion we closed with this morning?

Senator MUSKIE. By all means.

Mr. MOSS. I do believe that we will go from emergency to emergency, from crisis to crisis, if we don't bring about some fundamental changes in our energy policies that I spoke of in my statement.

But I understand your desire to report out emergency legislation as soon as possible, and I wish to cooperate in that endeavor as long as there are minimum safeguards to give reasonable belief that due process will be followed and variances granted will be temporary.

We will go into more detail on those items later.

In the light of this understanding that it is to report legislation out, I would propose that action on two of the three basic reforms I proposed, ending subsidies and instituting longrun cost pricing, be deferred in this particular legislation.

I would hope, though, that you would use your good offices to help us air these issues in the near future.

I am convinced that issues like these will be necessary if we are to close the prospective gap between the demand for energy and acceptable supplies of it.

As for my other major proposal, the levying of control fees on emissions of sulfur, this would, it seems to me, be clearly within the province of this committee and be consistent with what you are attempting to do in this legislation in trying to encourage the development of sulfur oxide abatement technology.

If you let the draft legislation stand as it is now, we still have the problem of the industry having an economic incentive not to comply with the compliance plan. We have had lots of examples of agreements being made and broken.

We are not too confident that by 1977 it is all going to be in place. On the other hand, if you levy a control fee on emissions of sulfur oxides, then for the first time the industry will have that economic incentive to meet the compliance plan and we will have a lot better feeling about the prospects that this emergency legislation will indeed be temporary because industry will have a want to solve the problem.

Senator MUSKIE. I appreciate that comment, Mr. Moss.

On the question of the sulfur tax, I am not sure what the jurisdictional problem, if any, is. It is regarded as a tax and I would assume we would not have jurisdiction. If it is not regarded as a tax, that is something else. I simply have no observation on that. The tax writing committees are jealous of their prerogatives and, of course, constitutionally that legislation has to originate in the House.

I don't know what the jurisdictional problem is. I haven't had the need to consider it.

With respect to the proposal, itself, we have not addressed ourselves at any time in this committee to it. I was just discussing with the staff the questions that might be involved, bearing upon establishing the mechanism for collecting it.

I assume it would have to be a bureaucracy of some size unless it fitted into the tax collection agencies we now have. We have to have a way of measuring sulfur content, I assume, in order to assess the tax.

I just don't know how much of a task that would be.

Mr. Moss. We looked at it in some detail, Senator. Right now the utilities are required by the FPC to submit information on the sulfur content of the fuels they burn. In most cases, of course, all the sulfur in the fuels is now emitted to the environment.

Senator MUSKIE. Are you proposing to limit your tax only to the utilities?

Mr. Moss. No, to the stationary sources that would be given variances under this legislation, at least until 1977, in which case or at which time it could be applied nationwide.

Senator MUSKIE. You do not propose to apply it nationwide?

Mr. Moss. Not immediately.

Senator MUSKIE. Could that create competitive disadvantages for those industries unfortunate enough to be located in areas where their activities must be limited?

Mr. Moss. It certainly gives them a competitive reason to either seek out low sulfur fuels to use in that area, which we would want, if the control technology had not been installed, because it would be a high emittance area.

Senator MUSKIE. I mean with respect to other competitors in the industry which didn't have to consider either of them for the time being because they didn't happen to be in the problem area.

Mr. HAWKINS. There is the competitive disadvantage, Senator, of the same type that there is now where you have areas of the country which have less strict emission standards because they have less of a problem, and you have areas which have more stringent emission standards because they have more of a problem.

We are never going to solve that until we solve the pollution problem.

Mr. AYRES. In addition, if I might add, in other areas of the country where oil is available and is being used in preference to lower emissions, at the present moment the price of that is likely to be high enough to offset at least to some extent the effect of the tax, so it may balance out.

Senator MUSKIE. There are questions of this kind that should be put if the committee were disposed to seriously consider that proposition. We would probably have to go into it quite extensively.

In any case, I appreciate that proposal.

I think I will yield to my colleagues for questioning at this point since I had some opportunity before lunch, and so did Senator Domenici.

Why don't I yield to you, Senator McClure, at this point, and then to Senator Clark.

Senator MCCLURE. Thank you.

I wanted to particularly express a comment on the statement submitted by the Sierra Club. I think it is a balanced statement that ought to give some encouragement to some of the people around the country who have been constant critics of the Sierra Club.

You do take a responsible view and present it with some very tough decisions. You came out very clearly, as I understand the statement, for an economic pricing as the ultimate result that should be sought. Is that correct?

Mr. Moss. That is correct.

Senator MCCLURE. There may be some people who quarrel with details of how that is to be done or the impact that it will have, and how we accommodate other goals of our society and of our government in legislation that would necessarily have to be enacted if we go this route.

The economic burden would fall relatively unevenly just as economic burdens now fall relatively unevenly, is that correct?

Mr. Moss. They might. On that point, I think it is generally preferable if it can be done, and I realize the political obstacles to doing it, to work on the problems of the poorer segments of our society by giving them some money so that they can make their choices as to what resources they would buy rather than to say, for example, it is good for them to use so much energy rather than so much of something else and give them so much energy.

I believe in maximizing choices on society as much as possible. I think if we find ways to assure that each person has a minimum income, then the options can be left pretty much to that person.

Senator McClure. You sound very much like Milt Freedman.

Mr. Moss. I agree with him on many things.

Senator McClure. I am not sure I anticipated that.

I think the point you make that the main effect of what you call subsidies, the main effect of pricing incentives in our system, is to lower the price of energy below what it would be if it were set on the basis of covering all costs.

You go on then to point out that perhaps we ought to put the full price of the energy in the cost of the energy and seek other effects in other ways. Is that a fair summary?

Mr. Moss. I think so.

Senator McClure. Mr. Hawkins, you mentioned the time that it takes to implement decisions. How much time do you think is required to make shifts that are called for in fuel allocations?

Mr. Hawkins. In fuel allocations?

Senator McClure. In energy consumption patterns. I don't want to use the term "allocation" in the sense of a Government control.

Mr. Hawkins. I suppose it depends on the nature of the decision that is made. For example, if the buses in Los Angeles run out of fuel the riders of those buses will shift immediately to cars, if they have them available, and they will be making a decision in a matter of hours to use a mode of transportation which consumes a great deal more energy.

So it depends on the exigencies of the situation and the framework of the decision. If the decision is one that at the end of the month your electricity bill is 20 percent higher because you have failed to cut back by 10 percent from your last year's consumption, I would assume that it would take at least a month before any significant changes would start to result.

So I think it depends on when you get the feedback.

Senator McClure. Do you think that the immediate effects can reduce energy consumption immediately? Do you think there can be an immediate and dramatic reduction in energy consumption?

Mr. Hawkins. Yes; I do, even dramatic. I don't think it is sufficient in itself to necessarily provide for adequate supplies to every area of the country without adequate distribution and allocation decision-making, and maybe not even with those.

But, yes; I think, for example, if one shifts from plane flights every hour on the hour from Washington, D.C., to New York, to Chicago, to one flight every 3 hours you have effected a 66 percent reduction in

that particulor sector. I think you can achieve similar reductions in other sectors if one eliminates or suspends the requirements of the ICC to go through gateway cities.

One can eliminate hundreds of thousands of gallons of gas on a daily basis. This can be done by the stroke of a pen. So I think there are some things which can be done by a stroke of the pen, and there are many others which obviously will take a great deal longer.

Senator McClure. I would point out it is possible that if a fellow couldn't get from New York to Chicago he might go by way of Cleveland.

Mr. Hawkins. Yes; but he might find out that going by way of Cleveland would take him 4 hours whereas he would only have a 2-hour wait in Washington and he would still get to Chicago faster if he waited.

Senator McClure. The point I make is that not necessarily by reducing the flights between the two points would you get a 66 percent reduction in fuel because he might seek alternatives which might also use fuel.

Mr. Hawkins. I agree. It might only be 50 percent, but I think it would be substantial.

Senator Muskie. Wouldn't it depend on what you were effecting was what people regard as necessary travel as against wasteful, extravagant, or unnecessary travel? Aren't people going to make the necessary trip by some means?

Mr. Hawkins. Yes, Senator Muskie. My point was if there was a flight every hour on the hour and they are loaded to approximately 33 percent capacity load factor, which some of the flights that the CAB is complaining about being unable to regulate before the Interior Committee the other day, then the choice is not an enormous choice.

The option is going an hour later or going perhaps 2 hours later.

Senator Muskie. I understand that point.

Senator McClure. If you make the assumption that it is necessary travel and there is unused capacity, then I think there is perhaps a straight line relationship. But that isn't always the case. I think we should be careful we don't make assumptions that wouldn't be borne out.

Mr. Ayres. If I could address that for a moment, Senator, about 2 years ago there was a study done in New York in response to a proposal to expand Kennedy Airport there. Of the savings which could be made by rescheduling airlines, savings in terms of landings because they were concerned about there not being enough capacity at the airport, the conclusion of that study was that very large reductions could be made in the total number of flights going out, that there was that much unused capacity and very little inconvenience involved.

There would be a substantial saving, on the order of one-fourth to one-third of the total number of flights leaving during some hours. They could be eliminated with essentially no loss in customer service.

I am not saying that would be true every place in the country. But the fact that load factors in general, on the average, are about 52 percent in the airlines suggests that considerable savings in fuel could be made if load factors were increased by relatively modest amounts by rescheduling.

There is one other thing I might add as to things which can be effectuated with the stroke of a pen. Probably the most biggest savings that could be made immediately with the stroke of the pen is in a mandatory reduction in speed limits on the interstate highways.

This is something on the order of a half million barrels a day that might be saved merely by reducing speed limits from 70 to 50 on the interstate highway system.

Senator McCLURE. In April I made a speech in which I suggested that should be done. I noticed the Department of Transportation released a statement that appeared in the paper last Saturday that last summer they conducted such a study and the average savings was 35 percent in fuel. They put it in the converse, that it takes 35 percent more fuel to go 70 than it does to go 50. To put it the other way around the percentage comes different but the size of the fuel saving is the same.

Mr. Moss. On the question of the use of gasoline, Secretary Morton was quoted the other day saying that the gasoline consumption last month was less than the same amount a year ago.

He wasn't quite sure why but he said there must be something happening out there. Perhaps one of the things that is happening is the increase in gasoline prices which is making people think twice about taking certain discretionary trips.

It is conceivable that it could be that.

Senator McCLURE. We always have a little trouble determining cause and effect.

I might point out that the allocation bill, that is the emergency bill, does call for the Department of the Interior to consider the health effects of fuel allocations. I think Mr. Hawkins was critical of that bill because it gives the Department of the Interior that authority rather than the EPA.

Is that the essence of your statement?

Mr. HAWKINS. That is right.

Senator McCLURE. You didn't mean to imply that it wasn't being considered. Your criticism was by whom it was being considered.

Mr. HAWKINS. In the real world, my theory is it will not be considered if it is done by the agency whose mission is not to protect the environment.

That has been the case with respect to the powers that the Government has exercised under the Economic Stabilization Act since September. There has been no consideration exercised by the Energy Policy Office with respect to low sulfur fuel, and EPA has been frustrated in trying to get them to pay attention to those issues. It is understandable.

That is why we have an Environmental Protection Agency and that is why we have the National Environmental Policy Act.

Senator McCLURE. If we are to get low sulfur fuels to the areas where it is felt by those in authority they may be needed, we would also have to have transportation controls, won't we?

Mr. HAWKINS. Transportation controls?

Senator McCLURE. Yes.

Mr. HAWKINS. Well, I think——

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Senator McCLURE. If we are going to get low sulfur coal to the low sulfur market we may have to suspend or regulate the transportation industry in a different way than we now do, to make certain they get the rail cars and other transportation facilities necessary to get it there?

Mr. HAWKINS. That is right. In order to allocate any fuels, whether you consider the sulfur content or not, if you are going to get diesel fuel to the diesel fuel markets you will have to have controls.

Senator McCLURE. I am talking about the health considerations which you mentioned and carrying it one step further. It isn't just the selection of the markets or it isn't just the consideration of the health effects, but you have to go beyond that and implement the decisions by mandating the source of the supply and by mandating the transportation that is necessary, as well as mandating the use at the end.

Mr. HAWKINS. I guess the point of my response was simply under any fuel allocation program that point would be required, whether you consider or whether you ignore the sulfur aspects.

Senator McCLURE. Assuming we are doing this now, talking about the health effects, and you want to vest it in EPA the health effects study.

I assume also you would want to vest in EPA the authority to make the mandatory decisions in transportation.

Mr. HAWKINS. I don't think that would be necessary. I think if EPA has the authority to say that this fuel is needed here, then the agency which is implementing the other allocation activities, the physical allocation activities, could carry it out.

Senator McCLURE. It would seem to me, then, you are saying I trust the ICC more than I trust Interior, which may be fair. I don't know.

Mr. AYRES. If I could break in, I think at least in the short term for this winter, the one we are worried about in this bill, that may well be a false problem. The biggest problem in terms of allocation will be allocating oil because not very much coal is going to be available for anyone to burn anywhere in addition to what is already in the pipeline.

Therefore, what we are likely to be worried about is scheduling the arrivals of boat loads of oil to various places on the coast.

Senator McCLURE. Assuming some will be arriving.

Mr. AYRES. Some will be, we are sure of that. But at any rate, that is a somewhat simpler problem jurisdictionally, I think, as well as perhaps operationally than is scheduling rail movements.

Senator McCLURE. Not for low sulfur oil it is not. Many of our low sulfur oils are domestically produced and go through a complex of domestic transportation links.

So it isn't simply a matter of scheduling ship arrivals on low sulfur fuels.

Mr. AYRES. I think it would be good to bring this up with Commissioner Hart from New York later on this afternoon because he has had experience in just this problem.

I think he may view it more as a ship problem than as a land transportation problem. He will speak for himself.

Senator McCLURE. We do have health effects that you mentioned. I think you used the term that there will be people who die as a result of regulations that are adopted if indeed we allow variations in the sulfur emissions.

As harsh as that may seem, the result of a lot of regulations that are made or failed to be made by the Government have that effect.

As I recall a number of people testifying on behalf of organizations that you gentlemen represent have suggested that we produce more coal from the deep mines rather than the surface mines. It is a rather inexorable statistic that we can't ignore though we wish to, that ton for ton there are more injuries in deep mines than shallow mines and production in deep mines will cost more in terms of injury and death to the men who produce.

We do everything we possibly can to eliminate or reduce that kind of accident statistic, but those statistics are still there. As someone once pointed out, we have 50,000 deaths a year on the Nation's highways. We could probably eliminate nearly all of those by adopting regulations that were so stringent that people didn't operate their automobiles or they operated them at 20 miles an hour, something of that nature. But we have not done that. We have attempted to reduce the fatalities on the Nation's highways but still accept, reluctantly but nevertheless accept, the fact that the operation of automobiles can cause deaths on highways.

So there are some trade-offs even in the health effects field, are there not?

Mr. AYRES. We would not deny for the moment that public policy often has to balance the value of human life against other things, too. In fact, obviously, if sufficiently great shortages occur there would be health effects from that, too.

I think what the point of my comment this morning was was that we were concerned that human health not be sacrificed for little gain, or that it not be sacrificed when convenience could be sacrificed instead. I think that point carries a good deal of weight.

Senator McCLURE. I wouldn't quarrel with that at all. I don't think any of us want to assign a low value to human life or human suffering. I hope we do make the right balance, although I am sure that will be argued pro and con by people on all sides of the controversy.

Mr. Hawkins, you suggested this morning that a penalty perhaps would be assessed for any energy increase over last year. I think you said perhaps over 90 percent of last year.

What would you do in the instance of the World Trade Center in New York City? It didn't exist last year and is consuming enough to supply a city of 100,000? How would you measure that against last year's consumption and what would their penalty be?

Mr. HAWKINS. The problem of a nonexisting source is one that would have to be dealt with and dealt with much better than is being dealt with under the present allocation system. There has to be an exception.

I think what one has to do there is have some bureaucrat decide what is an average and anything above that average, after defining certain parameters—for example, does the World Trade Center really have to have switches that operate lights 10 floors at a time; shouldn't they be forced to pay a penalty for that——

Senator McCLURE. What if a bureaucrat instead would address himself to the broader question of whether we needed the World Trade Center or not?

Mr. HAWKINS. He might well have done that a few years ago. I think it might be a little late right now.

Senator McCLURE. Not in terms of penalties it is not late. It is never too late to impose a penalty. It may not be fair, but it is not too late.

Mr. HAWKINS. I guess that is right. Whether it is fair to impose a penalty that might be confiscatory is something else. Frankly, I don't think those buildings would serve very well as large tombstone markers at the foot of Manhattan.

Senator McCLURE. We had some people in Idaho who proposed that Dworshak Dam stand as a monument to the environment and that we never fill it.

Well, thank you very much. I don't mean to belabor the point. I think the testimony that has been presented by you and Mr. Moss is very thoughtful and very helpful. I very much appreciate your appearance here today.

Senator MUSKIE. Senator Clark?

Senator CLARK. I am sorry I missed your statement this morning. I have been able to read about three-fourths of it, Mr. Moss.

Gentlemen, together, in terms of meeting the short-term crisis, let's say 6 months, since that is what is written into this bill now, have we, the Congress in the Emergency bill and the President, sufficiently considered all of the alternatives for saving fuel which would be more acceptable than allowing variances in the Clean Air Act?

If not, what are some of them?

Mr. HAWKINS. I think the position and the statements of the administration representatives as the Interior Committee hearings have been quite revealing. In the markups on Friday, when the administration was suggesting language changes to section 203 of the Interior Committee legislation—section 203 is written in terms of requiring programs which will have energy conservation impacts—the thrust of the administration's language changes was, in each case, to make it more and more discretionary, to make it in terms of plans which the administration might or might not implement, but it would be in the administration's discretion to do that.

With respect to section 204, which is the coal conversion, there was no such concern over the fact that the language as written then and as still written which says that the President shall require.

There was language saying on a case-by-case basis, considering environmental impact, the conversion of such powerplants would occur.

Section 207 of that legislation had a statement that there were mandatory Federal actions to increase energy supplies.

The administration recommended that the word "mandatory" be deleted and the words "the President shall" be changed to "the President is authorized to."

In each case where actions could be taken either on the supply side or on the demand side to achieve energy conservation or perhaps to require refineries to produce more distillate and less gasoline, the administration was very careful to say, "We don't want to be forced to do any of this. We want it all within our option."

However, the administration was not nearly so concerned with respect to the coal conversion. That is what is giving rise to our fears, that that is No. 1 on the list. Coal conversion is No. 1.

The dynamics of the situation are that once the President requires a plant to be converted, EPA has little option other than be a rubber stamp. It is simply not within the cards to expect that once the President has publicly announced that a plant will be converted, that EPA will say, "You may defer it but you are not going to be able to burn that coal weekly."

It is not going to happen and we are concerned about it. If all the measures in section 203, in the Interior legislation, the measures were implemented on a good faith basis, then I think our concerns would be much less. We would be willing to stand in line.

When I say "we," I am speaking in my capacity here today. We would be willing to stand in line and make the same sacrifices everyone else does. But I don't see why my lungs should be made poorer so someone else can run an air-conditioner in his limousine.

I don't see the administration taking any action against the owner of the limousine, but I do see my lungs being made very dirty.

Mr. Moss. I don't think I have too much to add, except the basic reforms I posed in my testimony which you have. I think they would do a good deal to bring about a different pattern of decisionmaking in this country away from the more energy intensive actions to the more energy conserving actions.

It would be a pattern that will benefit us in many ways, among which, I think, over the long run would be the economic benefit because we wouldn't be overinvesting in low rate of return energy activities simply for the reason that we happened to be subsidizing them.

Mr. Ayres. I would like to just add one point to that. One of the few programs that is already planned and beginning to be in operation, which is the transportation control program that EPA has now pretty well finished promulgating and approving in the States.

Nonetheless, the administration would add nothing in the way of impetus toward the adoption of those measures that we all know would save fuel as well.

It would seem to us that this is a golden opportunity to accelerate something, a program which has been in the planning stages for a year, which has been thought out carefully, to accelerate that to produce much quicker reductions in fuel usage and air pollution rather than to make it as a first priority mandatory item to go backward in terms of air pollution, particularly when we know that conversion to coal takes some time also.

It is likely to take at least 2 months, even for the fastest plants.

Senator McClure. So in summary, from the three of you, you would like to see us accelerate the transportation plans and you would like to see more mandatory language, or mandatory language put in the bill in an equal way. And, Mr. Moss, you would like to see us lift the subsidies. That pretty well covers it? You can't think of any other areas?

Mr. Moss. There are two other basic areas involved in economic reforms in my testimony. One was the application of the long-run incremental pricing in the regulated industries so we don't sell the goods from the cupboard at less than the cost for replacing them.

The last one was the one called the internalization of environmental costs. Those are paid by the industry and the user.

It would give the user a better indication of the true costs of the product so he could make better choices on how much to use, and would give the industry an incentive to solve the problem because they would have to incur the cost if it wasn't solved.

Mr. AYRES. We don't mean to say by the list that we have given that there are not other measures. In fact, some are already listed in the administration bill as discretionary items.

There is also a study by the Department of the Treasury which came out recently, which details a large number of conservation measures, many of which could be implemented quickly which would save 3 million barrels of oil a day, according to the report.

So I think the alternatives are known. It is simply the will to make those mandatory.

Senator MCCLURE. Mr. Moss, I am trying to be attracted by the idea, although I know very little about it, to eliminating or lowering subsides. I would like to ask an adversary question in that respect and one that I am sure you get all the time.

Your testimony argues that by eliminating or lowering the subsides on energy, we would cause the cheap fuels to become more expensive. You say on page 4 any reason to subsidize gasoline used in automobiles would have been nullified by events and again an essential element of a conservation program is to get rid of these subsidies.

Again, price is all the incentive that is needed.

If fuel costs rise considerably, it seems to me that wealthy people in our society will continue to drive large automobiles in any case, with private planes to go to football games, recreational purposes, while lower income people will be forced economically to cut back.

I know in many part of the world that I have seen a lot of people are walking and driving very small cars but there are still a lot of people driving big, black limousines. Won't that be part of the effect of implementing that kind of plan?

Mr. Moss. I am not sure it would be quite as drastic as you have stated, but it is true that in the world some people are more equal than others, and the rich ones get the abundant use of scarce resources where the poorer do not.

My main problem with the present system of subsidizing energy is that we are subsidizing the rich, or say the upper middle class, because they are the ones who use a lot more energy than the poor.

Senator MCCLURE. We are making cheap fuel available to everyone.

Mr. Moss. But it is a very inefficient way to subsidize the poor, to have cheap fuel, because the great preponderance of the fuel is used by the upper middle class and the rich. They are the ones who take the jet trips all over the place. They are the ones more likely to take off a few weeks on long vacations. They live further out in the suburbs and commute longer distances to work.

Senator MCCLURE. Do you think higher fuel costs would affect what you have mentioned?

Mr. Moss. I think it would dampen the rate of growth in within a matter of weeks. They could be getting paid back in their pay check

at the end of the week what they might have had to lay out for gasoline during the work days.

So I think there are ways of getting the money back to those who we would want to except from such an increase in fuel prices rather quickly.

Mr. Moss. One final comment on the point you raise, which I think is a good point. If you follow that argument to its extreme, you find yourself defending subsidies like the oil depletion allowance on the basis of helping the poor.

I think that is carrying things a bit too far.

Senator McClure. No, I see that point. I think my 10 minutes are up.

Senator Muskie. I find it also easier in the heat of crisis to get the Congress to approve such things as maybe a 30-percent increase in the price of fuel, but the people who vote for that are not the same people likely to vote for some of these other relief measures to offset the impact of such increases on the poor.

People who vote for increased defense expenditures are not the same people who vote for social bills, so you have that problem to face.

Mr. Moss. I wouldn't want to minimize the political difficulties. Let me just throw out a rationing plan that I think would work very well in this context. Instead of within a matter of weeks they could be getting paid back in their pay check at the end of the week what they might have had to lay out for gasoline during the work days.

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Mr. Moss. I wouldn't want to minimize the political difficulties. Let me just throw out a rationing plan that I think would work very well in this context. Instead of issuing the usual coupons we had in World War II, which you either used or didn't use, why not issue coupons in the amount of the average per capita energy use in the country to each person, or some lower figure if the supplies were going to be low and we knew about it, and then allow the individual to decide whether to turn those coupons in for the energy intensive options he wanted to exercsie, like taking a jet plane trip or buying gasoline or home heating oil, or if he preferred and was willing to use less

than the national per capita average to sell the coupons to someone who could use it at more than the national per capita average.

This has the element of an income redistribution plan as well as a rationing plan.

Senator MUSKIE. You would have to increase the personnel in the Counterfeit Division of Treasury.

Senator Stafford?

Senator STAFFORD. I have no questions, Mr. Chairman.

Senator MUSKIE. Senator Domenici?

Senator DOMENICI. I have just a few questions.

First, let me say to you, Mr. Moss, in reference to the economic aspects of your testimony, other than arguing as to whether it is relevant to this emergency measure, I have no basic argument with your thesis.

I find it a little bit difficult, even in the context of 10 months in the Senate, to find your thesis regarding the need for economic changes very relevant to this precise 6-month or 1-year period—or as relevant—as it very well should be to many other deliberations of the Congress.

I hope we will continue to make them, and I know you have continued to make them.

Let me ask you about your concern, Mr. Hawkins, about the redistribution authority. I am looking at the Committee Reprint No. 4 of S. 2589.

Mr. HAWKINS. I have it before me.

Senator DOMENICI. In section 224(b)(1):

> To the extent practicable, such priority and rationing program shall include but not be limited to measures adequate to insure that available low sulfur fuel will be distributed on a priority basis to hose areas of the country designated by the Environmental Protection Agency as requiring low sulfur fuel to avoid or minimize the adverse impact on public health.

This is a modification of the Sierra Club's proposed amendments. Would you tell us now whether that is adequate, whether you think there need be some language to that effect in our clean air modification before us today?

Mr. HAWKINS. Yes. That amendment establishes the authority in the Federal branch and to some extent indicates Congress' interest to let the Federal branch carry out a program which will result in redistribution of fuels in order to minimize environmental impact with respect to sulfur content.

It does not specify who shall do that.

There is a new subsection (e) on page 8 which says, "The President shall direct implementation of those conservation measures contained in the plan."

What we are asking this committee to say is that it should be the intent of the Congress that the agency which has the authority to establish by Presidential order, ratified by Congress, the Environmental Protection Agency, which has had the authority to implement the Clean Air Act, which has the motivation to insure that environmental safeguards are maintained, should be the agency which will make the determination on redistribution insofar as possible within the confines of the President's allocation decisions.

The redistribution would only be with respect to sulfur content. We regard it as proper to bring it before this committee as a matter of jurisdiction, rather than the Interior Committee.

The Interior Committee amendment was designed simply to establish that the authority should be there somewhere in the executive branch. We bring it before this committee which has had jurisdictional oversight responsibility over the Environmental Protection Agency to ask that the Environmental Protection Agency within the executive branch be designated as the agency which will carry out that authority.

The reason that we do this is as a matter of practical reality the Environmental Protection Agency must have the leverage for dealing with those in the immediate office of the President.

It it does not have that leverage by a clear expression of congressional intent, they will be ignored except when it is convenient to listen to them.

Senator DOMENICI. I have heard that explanation and I appreciate it. I know you are not making the observation lightly. However, it seems to me that, at this time of emergency we can't fractionalize the allocation authority. I think that is the reason the bill was drawn as it is.

The President is the one to do the total job of either the mandatory allocating or permissive allocating, with the questions of low sulfur fuel being dealt with as one portion of the problem in the country. Otherwise we would have EPA do this one aspect and the President, or the Department to which he will delegate it, doing all or most of the other functions.

Would this pose a problem or not?

Mr. HAWKINS. The way I would see it working is if the legislation makes it clear that if EPA's complaints are not listened to in the first go round, in the allocation decisionmaking, EPA has the independent authority to do the best it can.

Then I think what we will see is a genuine cooperative spirit on the first go-around. I would submit that the other sections of 203 do give this type of authority to, for example, the Federal Power Commission, the Interstate Commerce Commission or the CAB. The line agencies are given responsibility for making proposals.

I think that is necessary. In that way we will avoid bickering and when EPA makes its point in the Government councils with respect to setting up the allocation decisionmaking, and setting "Why, Governor Love, do you want to send high sulfur oil to New York when you have some low sulfur oils you could send there?" they will be listened to.

Senator DOMENICI. Before I leave I have one question for Mr. Moss about his economic theory.

I read your various thoughts about getting rid of the subsidies, and you adequately expressed to Senator McClure what your general thought was.

I don't know whether you have spoken to the question of impropitious regulation of fuel prices, although I know you spoke about subsidies. What about regulation of natural gas? I am really no strong opponent. I don't know whether the Interior Committee has decided to have it in the emergency bill.

Can you tell me your views on that subject?

Mr. Moss. I think the wellhead prices for natural gas should be much higher than they are now, on the basis that we shouldn't sell any product, like gas or electricity, at less than the cost of obtaining new supplies.

As you know, there is a very great difference now between the wellhead price of gas from certain fields as regulated and the cost of bringing in new supplies. That doesn't mean I am in favor of complete devaluation of gas prices because on that question depends on whether or not you think the industry is workably competitive.

As I mentioned in my testimony, if you think it is workably competitive then deregulation will result quite naturally. If it is not competitive and deregulation gives you high prices to users of no alternatives and low prices to users who can switch to other things, the net effect would be to stimulate the demand for that product above what it would be if the same incremental price was charged to all people.

I didn't get into my own feelings as to whether or not the industry is workably competitive.

Senator DOMENICI. I would tell you one set of facts that I just received. In the State of New Mexico we have very little use for our natural gas because we don't have a large population. So the activity of drilling wells for natural gas is down because everything you produce has to be sold interstate. Right across the border, in the State of Texas, presumably the same field is being explored to the *n*th degree because they have an intrastate demand that creates a price three and one-half times the price at the railhead for interstate gas.

That seems to me to be a very unfair national situation in terms of what is happening to reserves, what is happening to exploration and the like. I think that is what you are saying about competition, that you don't really know what would happen if we removed it all.

Mr. Moss. That is right. Most of the discussion about the question of deregulation and no deregulation of natural gas is centered around whether higher prices are necessary to bring forth additional supplies.

I think it is equally important to talk about the demand side. One of the reasons you charge incremental prices is so you don't artificially stimulate the demand for that way in excess of what it would normally be.

There has been relatively little discussion of that.

Senator DOMENICI. With reference to the second point I raised this morning that I want to discuss with you now, I note, again in Committee Print No. 4, in the introductory comments, the Purpose clause, if we look at section (f) we have a precise amendment offered by the Council of Environmental Quality stating that one of the purposes of that bill is to insure that measures taken to meet existing emergencies are consistent as nearly as possible with the existing national commitments to protect and improve the environment in which we live.

I assume that our emergency measures in Senator Muskie's amendment would have that equal mandate, that whatever exceptions were taken are consistent with this policy.

Assuming that, would you tell me very specifically why you think section 2 needs serious modification, aside and apart from the economic penalties? I don't think we are going to be able to include penalties in any emergency measure. They may be good to talk about but I don't think they will get passed.

Will you discuss what is wrong with section 2 in that context? I understand that you say it eliminates some right to go to court and some hearing rights, and that it is a foot in the door in that respect. Is part of the problem that if we have people to whom the variances have been granted put in a lot of money for new fuel sources, the variances might be extended for a long period of time?

I understand that the present law might permit Administrator Train to grant the same variances that this does, so I don't understand why this is so significantly inferior.

Mr. HAWKINS. Section 2 does permit judicial review. The thing that it does which is different and the way in which it expands the power of the Administrator is that it gives the Administrator now the power to overrule a State's determination to try to keep its presently existing sources on their compliance schedules which are using low-sulfur fuels.

For example, New York City had exercised its own variance power last year with very tight controls and managed to minimize the variances that were given. It managed to keep the sources on those lower fuels.

What section 2 of this bill does is it allows the Administrator, on the basis of a general, nationwide fuel shortage, to make a decision that a given source, even though it has a contract for low-sulfur fuels, is unlikely to be able to meet those requirements and, therefore, should be subject to a compliance schedule which will put it onto the scrubber system, stack gas cleaning. That far we have no quarrel.

However, when combined with the Interior Allocation Act which in section 204(a) says the President shall be required, after balancing the environmental effects of such conversion, that any plants that can convert to coal must convert to coal and any installation so converted will be permitted to continue such fuel for at least 1 year, the guarantee of at least the year's use, and the word "least" seems to imply a longer time.

We have the case where the President can order the conversion of a plant in an area of the country which would violate the primary standards and EPA then will be making a decision saying, "We want to put you on a compliance schedule to put on scrubbers."

But since the plant has been converted to coal we are facing an intervening period where the local emission limitations will be overridden and the coal will be burned and it will be burned in violation of those standards.

However, the plant will be immunized from any action because the EPA will have them on a compliance schedule, for several years, until they finish installing the scrubbers. The way that it differs from the present law is that the State or locality must initiate any action to let sources off the hook in the intervening period now.

I think in the proper Federal approach it is where you have a situation in a city like New York, if it does not require compliance with its initial limitations, the citizens' health in that city will be threatened.

I don't think the Federal Government should be telling the city of New York that it cannot protect its citizens' health simply because the President has ordered the plant in that city to convert.

So what we are suggesting is not that the President shouldn't be allowed to convert plants to coal, but that the mechanism should be one

which will insure the plants to be converted in areas where the people's health will not be affected.

We are even willing to go farther than that, to say that this is a real emergency and it required that plants be converted in areas where the public health will be affected. But we think a restriction should be put on the President's power and we think that restriction should be that before he converts a plant to coal in an area where it can be demonstrated that the primary standards would be violated—and this is going to be a long-term conversion, as much as 4 years, and I think in reality many more years—he should be required to show that he has exercised his authority under the Interior Committee legislation, and the Emergency Petroleum Act legislation, to employ all available conservation measures, that we permitted EPA to exercise all available redistribution measures, and that we still can't keep people warm.

If we are in that situation, then we think that the President's authority should extend that far. But the way the two bills are written now it permits the President to authorize the conversion of a plant wherever he likes. He has to "balance the environmental effects against the need to fulfill the purposes of this act," but it is all a little bit of a treadmill in a bootstrap operation because if he dosen't do the things under 203 that he could do, then he can say he balanced the things and since there is not enough fuel he is forced to convert this plant.

He balanced it and the balancing requires the conversion because there isn't enough fuel. That is without mentioning the fact that maybe the reason there isn't enough fuel is because of the fact that he hasn't taken what he should have. So, we want him to take all the actions he can that will not impact adversely on public health, that will not override the States and local governments' interests in protecting the health of their citizens.

So, it is a substantial expansion of the Federal authority in the area of allowing local States, local officials and State governments, to determine how the public's health will be affected.

We had a situation where the Federal Government and State government agreed as to what type of air quality will injure citizens. There are national primary ambient air quality standards.

The Federal Government is not saying that the standards are too loose. What they are saying is if this authority is exercised "We will not allow you to protect your citizens against this health hazard because we want to put in coal in your city."

The city has no way of fighting back against that. There is no way under the President's power. There is no limit on EPA's power to approve a compliance schedule without that fact.

So, we are asking this committee not to permit EPA to override State and local interests in protecting against air pollution except when all other measures which will not impact on health have been undertaken by the Federal Government. That was the essence of our objection.

Senator DOMENICI. Are the other actions which you think should be taken before the President should be permitted to do this, as they stand now, as easily measurable? Can you determine whether or not he has, in fact, carried out all conservation authorities?

Is that going to be an easy thing? Who will determine it? Would you talk to that for a minute?

Mr. HAWKINS. It will not be an easy thing. However, we have the luxury—and ironic luxury—of time in one respect, in that one cannot increase the domestic coal production so fast that we are going to have to convert the powerplants in the big cities right away. There isn't enough coal to supply all the powerplants which could be converted in the next 2 months and, therefore, if we have to embark on a campaign of converting powerplants immediately, and I think it should be done in conjunction with the other matters, I think it would be a disservice to the public for only powerplant conversion to proceed and not the other plants. But let's take that approach.

The President implements the available authority he has in section 203 and section 207 of the Interior Committee's bill and at the same time starts to convert powerplants. What we are saying is those powerplants he converts should be the ones in the outlying areas which will not result in exposure of significant populations to major sulfur oxide levels.

There also should be safeguards to insure that the expansion of the coal mines is done in a way that we can maximize availability of low sulfur coal. Now we are up to the crunch.

But by the time we have sufficient expansion of coal production to worry about whether we have to start converting plants in New York City we will have an idea of how well things are working. I think we will.

I would submit that this is a matter of the greatest national policy, that we not start converting plants in those cities where studies will show there will be additional deaths associated with additional levels over the years.

We should not do that until we get a reading on just how bad off we are. The proposals we would have would not hamper things in any respect, but would serve as a guarantee that this would be done. We wouldn't be converting those plants in areas where public health was affected immediately.

We would not require an elaborate quantitative analysis which demonstrates that this is clearly not working. If there is reason to doubt, he obviously has to be given authority to exercise discretion.

Senator DOMENICI. Is it your thought that the local community should concur based upon the fact that provides an additional safety valve in terms of health in the area? Is that your principal reason for wanting it?

Could we short-circuit the mechanism by just having them concur as an alternative mechanism, which they may do very early in the process, because of known facts?

Mr. HAWKINS. I think to the extent that they concurred in a process which allowed the violation of primary standards in their communities before any of these other energy conservation measures were taken, they would not be representing their constituency properly, and I don't think we should allow that.

There is a third party in the situation, namely the citizens in the locality. All I am suggesting is a set of conditions which we would not expect the locality to concur on. I can't fathom or project in my mind a reasonable man who would say we should expose the citizens of *x* town to hazardous levels of air pollutants before we take action to reduce speed limits and do other things.

I don't see why we should give those local representatives the authority to waive their citizens' rights unless those conditions are met, unless the conditions of the other available techniques are there.

Senator DOMENICI. There are some preliminary data from communities and States indicating that, with all conservation techniques being suggested, we are still anywhere from 6 to 7 percent short. Maybe the Oregon statistics are not valid in the city you are referring to, where the local citizens would not be represented as third parties, but I wonder, if that is certain, why they couldn't make some early determinations that they would just have to convert.

Would you speak to that for a minute?

Mr. HAWKINS. You are proposing the same situation I was, namely that the community has made a determination that the measures have been implemented in that area and they have not sufficed.

Senator DOMENICI. No; I am saying they could make the assumption. The conservation measures are all going to be carried out and we are still not going to have it. That is the point I make. You don't have to have them all put into effect by the time you decide.

Mr. HAWKINS. The reason we don't have to face that issue now is that we can't convert all the powerplants and we don't need to convert the ones where we will not have harm to health.

So we are in a somewhat ironically lucky situation. We can't convert them all so if we are going to convert some, let's convert the ones that will not harm public health first and see how we are doing down the road.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator MUSKIE. The issues you have been discussing are obviously the central issues, and I think it would be useful to those reading the record if I were at this point to read into the record some relevant portions of Committee Print No. 4 of S. 2589.

I understand the Interior Committee is in markup session on this so this language may very well be modified.

Section 204, as contained in Committee Print No. 4, reads as follows:

The President shall require, after balancing on a plant-by-plant basis, the environmental effects of such conversion—

That is from oil to coal:

Against the need to fulfill the purposes of this Act, that any major fuel burning installations, including existing electric generating plants which now burn petroleum or natural gas and which have the ready capability and necessary plant equipment to burn coal shall convert to burning coal as their primary energy source.

Any installation so converted will be permitted to use such fuel for at least one year. To the extent coal supplies are limited to less than the total conversion capability, insofar as practicable conversion shall first be required for those plants where the use of coal will have the least adverse environmental impact.

Such conversion shall be carried out contingent upon the availability of coal and the maintenance of reliability of service in a given service area.

There must be read with that section 205 of Committee Print No. 4, which reads as follows:

Air quality requirements. Should a Presidential order to change fuels pursuant to subsection 204(a) result in a violation of an air quality implementation plan, a variance may be granted in accordance with the provisions of the Clean Air Act, as amended.

The legislative language we have before us is intended to serve as the authority under section 205. That, I take it, would also affect Presidential authority under section 204. I do not see that the President could ignore the Administrator with reference to section 204.

Then, in addition, in section 203(b)(1), there is the following:

(b) The rationing and conservation program provided for in subsection (a) shall include the following: (1) an established priority system or plan including a program to be implemented without delay, the rationing of scarce fuels, quantitatively and qualitatively, among distributors and consumers for the duration of the emergency.

To the extent practical such priority and rationing programs shall include but not be limited to measures adequate to ensure that available low sulfur fuel will be distributed on a priority basis to those areas of the country designated by the Environmental Protection Agency as requiring low sulfur fuel to avoid or minimize adverse impacts on public health.

There is much language which appears to direct itself to some of the concerns raised by these witnesses. Whether or not they do so effectively or sufficiently is the question to which you have addressed yourselves and to which we will address ourselves. I think maybe that raises the issues.

With respect to authority to redistribute and adequate assurance that all other conservation measures available have been taken, I think both of those are valid points.

The extent to which we can tie them into control of the Administrator of EPA is a problem which exists.

I don't think I have overlooked anything I have on my mind.

Mr. HAWKINS. I think that is a good summary of the situation. I would just say in our way of thinking it is within this committee's jurisdiction to make the initial decision on whether to permit the Administrator of EPA to grant variances or to negotiate new compliance schedules which will result in long-term violations of primary standards in areas of dense population until and unless the executive branch of the Government can demonstrate that it is using available techniques under the Emergency Energy Act.

Senator MUSKIE. That, of course, is something else. I want to put a question to you that has flitted in and out of my mind since your testimony this morning. Clearly, it takes longer to comply with clean air standards by installing scrubbing equipment or precipitators than it is to switch to a clean fuel, and to the extent that the present energy crisis imposes that necessity upon us, the crisis, itself, generates a delay in achieving the primary standards.

Does that mean that the only alternative is to find that additional time is unacceptable and to insist upon the unachievable? Don't we have to accept this, assuming we have all the safeguards written in to your satisfaction. In other words, you don't do this unless you have to anyway, and all the rest, there is no way of avoiding some of that, isn't that the case?

Mr. HAWKINS. That is right. To the extent that the crises forces it upon us, that is what we have to live with.

Senator MUSKIE. That is good enough.

Mr. HAWKINS. All we are asking is that the Congress indicate in language which is less fuzzy than what is in the Committee Print No. 4

of S. 2589, and I do think it is fuzzy, with all sorts of language about balancing, case-by-case basis, consideration of environmental effects, we would be much happier to have something in there which said what we think the public is entitled to have said, namely that the President shall not convert powerplants to coal in areas where the primary standards will be jeopardized unless he has undertaken reasonably available energy conservation measures and undertaken the maximum efforts to redistribute low sulfur fuels.

Senator MUSKIE. We will see what we can do with that. That is part of the difficulty in trying to write legislation in two separate committees. Some of the language in there I think was responsive to pressures that you and others have brought, but I think it could stand some improvement.

Senator DOMENICI. If the chairman would yield for a moment, the Senator's last question and your answer did bring something up that still puzzles me. We have testimony that the primary standards have been permitted to be violated by variances granted heretofore by EPA.

Tell me about that, would you please? In your opinion, is that in violation of the act? If not, are we going to be more restrictive and, if not, how do you explain it?

Mr. HAWKINS. There are two critical differences. The first difference, from the governmental policy point of view, is that the State, the representative closest to the people affected, would initiate the proceeding. It was their decision to grant a variance. EPA didn't have the authority and doesn't have the authority to act without the State's acting first. The State must act the variance.

The second thing is the dimensions of the types of variances involved. The variances granted last year were short-term. They resulted in use of not coal but other fuels, other petroleum fuels, which were not as high in sulfur content and did not result in the degree of explosure that this proposal would allow and, most importantly, they were short, they were 30 days in one respect and shorter in another respect.

But this proposal allows 4 years of explosure to those fuels at the Federal Government's option, not at the local option. Those two critical differences are the things where we are involved in an enormous expansion, or actually in an enormous retrenchment of the local government's powers to protect their own citizens' well-being.

Mr. AYRES. I think also Comissioner Hart of New York can give you some enlightenment on the means which were involved, at least in that city, to control those variances to the absolute minimum possible amount.

It was done very effectively at a time when a number of variances were expected and only one was finally given in New York last year.

Senator DOMENECI. When you say the local community participated in requesting it, does this mean that when Mr. Train told us that EPA granted variances heretofore, he was saying that they were requested by the local community and pursuant to the act were granted?

Mr. HAWKINS. The correct term, and I am not sure whether he used it or not, is that he approved the local agency grant of the variance. It is the local agency which granted the variance.

All EPA did is ratify it. That is the way the law is written now. EPA hasn't any authority to grant variances. The local authority grants and the EPA simply chooses to ratify it or it says, "You were too lax on this and we will not let you do this."

But it doesn't have any independent authority to go out and excuse a source from compliance with a regulation, itself.

Senator DOMENICI. There is nothing in the act that says variances would be limited to 30 days or "short ones," as you put it. Is that what causes greater concern in the community? Or is it something else?

Mr. HAWKINS. Yes; the requirement of section 110(a) which says the standards shall be attained as expeditiously as practicable. There is a degree of confusion among many people, that the standards are not required by the act to be attained until 1975. That is not the case.

The Clean Air Act says the standards shall be attained as expeditiously as practicable. In other words, as quickly as you can, in layman's language, but no later than 1975.

It doesn't mean that the State has nothing to do until 1975 and then it automatically flips the switches on the scrubbers and gets the low sulfur fuel vats rolling. That is not what the act requires. It requires as quickly as possible.

That is what prevents variances in factors. There is a ruling of the first circuit court of appeals which holds precisely that, that any variances granted have to be granted consistent with the overriding requirement of the act that the standard be attained as expeditiously as practicable.

Senator DOMENICI. Thank you.

Senator MUSKIE. Thank you very much, Mr. Moss, gentlemen. We appreciate your testimony. I think it is a valuable addition to the record.

Mr. HAWKINS. Thank you.

Mr. MOSS. Thank you.

Senator MUSKIE. Our next witness is Mr. Robert V. Price, of the National Coal Association.

## STATEMENT OF ROBERT V. PRICE, EXECUTIVE VICE PRESIDENT, NATIONAL COAL ASSOCIATION, ACCOMPANIED BY JOSEPH W. MULLAN, VICE PRESIDENT, GOVERNMENT RELATIONS; AND JOSEPH P. BRENNAN, VICE PRESIDENT, ECONOMICS AND PLANNING

Mr. PRICE. My name is Robert V. Price. I am executive vice president of the National Coal Association, which represents the major commercial producers of coal in the United States. I am accompanied here today by Joseph W. Mullan, vice president, Government Relations, and Joseph P. Brennan, NCA's vice president, Economics and Planning. I appreciate the opportunity to appear before you today to discuss a national response to our current and emerging energy crisis and to comment specifically on the bill to amend the Clean Air Act before this committee this morning.

The National Coal Association has warned for years that the Nation was rapidly approaching an energy crisis. I wish we had not been so

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right. It would be easy to trace those developments which led to this crisis, developments which could have been avoided had the Nation had the foresight to see the inadequacy of past energy policy in light of present energy supply-demand reality.

However, this is not the time for such an I-told-you-so position. Rather, it is time for all citizens of the Nation to profit from our past mistakes and to work together to get us through the immediate crisis—and perhaps more importantly for the long term, to adopt policies and strategies which will permit reaching a state of energy self-sufficiency by 1980.

The National Coal Association and the industry which it represents are totally committed to that goal. In addition, we pledge our full resources to do everything possible to alleviate the present crisis. At this time we do not yet know the full extent to which coal can respond to filling the current shortfall in energy supply. However, we are prepared to do everything within our power to produce as much coal as the Nation's mines are capable of producing, consistent with sound health and safety practices.

In order to maximize the value of our coal resource in the short term, we submit that certain things must be done and done immediately. Such a course of action would be predicated on a national cooperative commitment by all concerned—Government, industry, and labor. Since we now are in an emergency situation, many of these go beyond the normal boundaries of status quo activity. But because of the current crisis we believe they are necessary and in the public interest.

On this point, we agree enthusiastically with the comment of Senator Muskie in introducing the proposed legislation when he said:

> We have the opportunity to guarantee the coal industry that their investment * * * will be justified on the basis of a long term commitment from utilities and industries to burn high sulfur coal.

In order to realize this opportunity we must create the institutional framework for coal expansion on a scale commensurate to the challenges at hand, in terms of the short range crisis and the long term dilemma. That framework must include all of those factors, economic, legal, and social, which impinge upon the coal industry's ability to adequately respond to the newly emerging national mandate for energy self-sufficiency.

It is clear that the environmental question is one of the major constraints surrounding the production and utilization of coal. However, this is not the only constraint and in order to put our later comments in proper perspective we would like to briefly outline for the committee some of the other things that we think must be done in order to maximize the value of our coal resource.

First, the coal industry needs necessary raw materials to operate its mines at maximum output levels. These materials include diesel fuel for the operation of mines, and distribution facilities as well as for the operation of that equipment necessary for the reclamation process in surface mining; roof bolts which are essential for the health and safety of underground miners; ammonium nitrate which is used as an explosive and also used as a fertilizer in the reclamation phase of sur-

face mining; and provisions to insure that no bottlenecks occur in the critical supply continuum of mining machinery and replacement parts.

The rapid expansion of coal production for the immediate crisis and also to meet the anticipated future demand will require close labor/management cooperation. What is needed is for both sides to make every effort to build the institutional framework necessary to eventually wipe out any unnecessary impediment to production.

Both labor and management, and to the extent it is indicated, the various departments of government, must be urged to do all that is necessary to create the type of favorable climate which is essential to the maximization of coal production consistent always with sound health and safety practices.

In order to encourage the maximum production of coal we believe that current price restrictions on the industry must be revised. It is clearly evident that there must be further incentive to accelerate the development of additional coal capacity. This can be done, in part, through the price mechanism.

Finally, much existing coal production capacity is currently threatened by pending strip mine legislation. This threat also tends to greatly inhibit investment in surface mining, investment which must be made today if, in fact, coal is to contribute significantly to meeting America's future energy needs.

Air pollution controls, however, are the single most depressing factor on coal utilization. If this depressant is to be removed there must be some guarantee of long-term modification of the State implementation plans and standards to optimize current coal production capacity; to allow for the reopening of coal mines that have been shut down because of restrictions on coal use; and to encourage the development of brandnew coal production capacity. In addition, modification of new source standards may be necessary because new stationary sources may face the same fuel availability problems as do existing consumers.

We do not believe that these modifications need infringe upon human health. But within that limitation there must be the maximum utilization of all types of coal, including high-sulfur coal. In order for this to be accomplished there must be a long-term commitment to the coal industry on the part of government that present and potential mine capacity will not be rendered environmentally obsolete by government fiat.

The bill introduced by you, Senator Muskie, and the other members of this committee provides the potential for such a long-term promise. It moves toward the goal of assuring coal that it can develop its facilities to take care of the immediate crisis and to develop toward the goal of energy self-sufficiency in the future.

We are not suggesting that the environment must be a casualty of the current energy crisis. We do believe, however, that the present emergency brings clearly into focus the need to reconcile the dichotomy between energy needs and the environment ethic. We feel that this can be achieved with maximum benefit to the American people. In this context we agree with you, Senator Muskie, when you said:

> This legislation may, in the short term, adversely impact the programs which were so successfully undertaken as a result of the Clean Air Act of 1970 but, in the long run these amendments will guarantee the public that short-term crises

in the availability of fuels and wholly private decisions based simply on costs of fuels will not interfere with our effort to clean up the environment.

We now want to briefly comment upon the legislation pending before this committee.

In general we support the legislation, commend you, Senator Muskie, and its other sponsor and urge that the committee expeditiously act on it. We will today, however, suggest certain modifications which we believe will enhance the bill's usefulness in meeting the present and emerging energy crisis.

Some general comments about certain sections of the bill are in order at this point.

New subsection (g) (1) provides the framework for meeting the immediate energy crisis this winter. It will make possible, as we understand the language, for current coal consumers to continue using such coal and thus, will permit the coal industry to optimize its existing coal production capacity. However, it is imperative to point out that this section will not provide for any new capacity coming on line.

This subsection is, as we read it, intended to be only a short-term palliative. It will not provide the type of long-term assurance which the coal industry must have in order to open new mining capacity.

However, it does have the advantage of providing a short-term—measured in months—response to the energy crisis, and standing alone it does provide for that benefit.

Subsection (g) (2) requires the Administrator to undertake, and after public hearings, report on the probable affect of anticipated fuel shortages on the ability of sources of supply to comply with State implementation plans. It is a sound and long overdue provision consistent with the longstanding recommendations of our organization. The Mitre Corp., in a report prepared for the Environmental Protection Agency and entitled "Impact of State Implementation Plans on Fossil Fuels Availability and Requirements," does much of this work and is, we believe, a valid starting point for any such study. In addition, we believe the National Science Foundation study initiated by this committee can be a useful tool for the study recommended by the pending legislation.

We believe, therefore, that the time frames contained in the legislation for a study can be substantially shortened and the information necessary for a balanced energy/environmental policy made available in short order.

The new paragraph 5 of subsection (a) of section 110 of the Clean Air Act begins to make the type of commitment which the coal industry needs if it is to rapidly expand its capacity.

As we view this language it provides for a degree of flexibility in the implementation of air pollution regulations. This flexibility is tied to a compliance program worked out between the administrator, the State and the consumer to permit progress toward the national goals while eschewing presently unattainable standards. Given this type of assurance, and with the modifications which we will suggest, we believe that the coal industry can, in fact, begin to develop both its high-sulfur and low-sulfur coal reserves so as to make possible a rational utilization of America's largest indigenous energy resource, that is, coal.

We would now like to suggest specific language changes which we think will enhance the effectiveness of the legislation under consideration.

I will not burden you with all of that now, Senator. I will just point out that at the bottom of page 8 we have some language there with regard to section 110(g)(1). We would change the word "authorized" to the word "directed."

I want to reemphasize here, however, that this section will only permit emergency supplies of coal—as they are available—to come to market. It will not provide any basis for expansion of current coal capacity, which requires the long-term assurance of stable markets.

To this end, we would suggest more flexibility for the administrator in the event the crisis continues beyond May 15, 1975. We suggest, therefore, that this committee should reconsider extending the terminal date set forth in this subsection.

In section (g)(2) we urge that the study suggested should be carried out as expeditiously as possible so the Congress, the executive branch and the industries involved may be afforded adequate time to get on with the job of creating the environmental framework which will be protective of public health and at the same time permit the necessary expansion of the energy industry.

In section II of the proposed bill (sec. 110(a)(5) of the Clean Air Act) we suggest that the effectiveness of the section can be enhanced if it is changed to read in the following manner:

> Upon a determination by the President that adequate fuels are likely to be unavailable due to a continued energy emergency and a finding by the administrator that a source or sources of pollutants for which national ambient air quality standards have been promulgated will not be able to comply with applicable emission limitations the administrator shall notify the States.
>
> Following notification each State shall act as expeditiously as practical to revise the implementation plan and local or State regulations necessary to insure the attainment of primary ambient air quality standards protective of the public health. If actions by such State are not submitted and approved by the administrator within 120 days after such notice * * *.

We note the cutoff date for compliance for meeting the primary standard as set forth in the pending legislation is July 1, 1977. We suggest that the Congress should provide for some type of flexibility in the event that the July 1, 1977 date cannot be met within the constraints imposed by available energy supplies and abatement technology. In addition, consistent with the present act, a reasonable time beyond the atttainment of primary standards should be granted for meeting secondary standards.

Mr. Chairman, also I want to throw in one more specific comment which is not in my prepared text, dealing with the new source performance standards. This is one additional amendment which we believe is needed.

There must be some type of language to cover those new sources which will not be able to obtain fuel necessary to achieve new source performance standards. In this event, we believe that the new source should be treated like the existing sources set forth in the pending legislation. Language covering new sources similar to section 110(a)(5) with the revisions noted by NCA should be added in section 111 of the Clean Air Act.

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The essential point which we want to leave with this committee today is that the short term energy crisis cannot be solved without attention being given to the long-term coal problem. For the coal industry this simply means that the external variables surrounding coal production and use must be structured so as to encourage coal expansion. To date these variables have served as depressants rather than as stimulants to coal expansion.

We have referred today in general terms to many of these, including the inability of the coal industry to secure necessary supplies, the constraints of existing price regulations and pending surface mining legislation. We have referred in somewhat more detail to the problems surrounding the attainment of present air pollution regulations.

Thus, the response of the Congress to the current energy crisis in terms of legislation must aim at a twofold objective, we believe.

First, it should provide the mechanism for full mobilization of America's energy resources to meet the present crisis. This we must do with available resources at hand. In part, the legislation pending before you does that in the sense of providing an immediate extension of the air pollution requirements.

Second, however, we must work to convert the short-term crisis to long-term benefit. In order to do this we must provide coal with the long-term assurance that:

It can reasonably assume a long term governmental climate favorable to a viable expanding coal industry. A large part of that climate is involved in the environmental question—a question to which we are addressing ourselves today.

We would also like, in passing, to touch upon the subject of energy conservation which has an obvious and major role to play in meeting our current dilemma. This area has been of very intense concern to the leaders of the Congress, including the members of this committee, as well as to the President.

We support, as individual citizens, the various programs that have been outlined to conserve energy. We think that they are in the national interest, and although they involved a small sacrifice on the part of every American, these are sacrifices which are well worth making in the short-term and long-term national interest.

However, in a broader sense the increased use of coal is, in itself, a major conservation measure. For, in using coal, we can substitute where possible, the use of an abundant fuel for a scarce fuel. In doing so, the scarce fuel is reserved for those purposes for which it has a unique application, while the abundant fuel is used for those purposes where interchangeability is possible.

It makes little sense, for example, to talk seriously about a shortage of distillate oil while large amounts of such oil are used under utility boilers where coal can, in some instances, be substituted. The same logic applies in the case of natural gas which is in short supply and which logically should not be used for boiler fuel purposes.

Therefore, we suggest that in addition to measures aimed at restricting energy consumption as a part of a national conservation ethic, a vital part of this ethic must be the encouragement of the use of abundant resources where possible in lieu of resources in much tighter supply.

Finally, the entire question under discussion today at the highest levels of government involves the need for a national energy policy. We believe that in conclusion we should discuss this vital topic.

For three decades the United States has enjoyed unparalleled prosperity. During that time we have assumed that limitless, cheap energy would be available to power our ever-expanding economy. During this time, however, those energy production and use patterns were based upon a firm and fundamental belief that we would be operating in periods of energy surplus indefinitely.

The fallacy of this thinking is now clearly evident as we consider emergency measures to prevent an energy catastrophe. If we are to successfully meet the crisis of this winter and the longer range challenge of providing the Nation with an adequate and reliable source of energy we must adopt a comprehensive national energy and environmental policy which among other things makes optimal utilization of our abundant indigenous supplies of coal.

We appreciate the opportunity to appear before this committee today and hope that our comments will be helpful in your deliberations on this issue of vital national concern.

Senator MUSKIE. Thank you very much, Mr. Price. Senator Domenici.

Senator DOMENICI. Mr. Price, I think I saw you present during the previous three witnesses' testimony, is that correct?

Mr. PRICE. That is correct.

Senator DOMENICI. You heard what at least Mr. Hawkins said, and I believe that had the concurrence of the other two gentlemen, what he recommended with reference to the conditions that ought to be sought legislatively before section 5 goes into effect. Would you discuss those, that is the conditions that the President make a finding that all conservation mandates under the conservation bill, are in effect or about to be, and that there is a mandatory allocation of low sulfur fuel already in effect, and that there still is the need for the variance.

Could you respond to that, please?

Mr. PRICE. Certainly, Senator. I think it is sound public policy to assure that we are doing all we can, and to that extent I believe that we should be trying to do all we can before some of these variances go into effect.

At the same time we are operating in a crisis situation, and I think it is important to remember that we should not allow some of these to drag on so long so that we are not able to take the action that is called for in section 110(a)(5) in time to do us any good.

Senator DOMENICI. With reference to an article found in the Wall Street Journal Monday, November 12, "coal to the rescue this winter? Maybe so, but it is scarce too and may get scarcer."

Are you familiar with the article?

Mr. PRICE. Yes.

Senator DOMENICI. I do not want to hold you to the entire content thereof; but generally there is the fear described by Mr. Bob Arnold, as he went through the industry and discovered that maybe it would not be so easy to get right on track with coal as a substitute, because of many depressants that have heretofore been imposed upon the indus-

try, many kinds of shortages that will exist if we attempt to try to expedite the furnishing of coal too quickly. Do you generally agree with the concern, at least as to the tenor expressed by the article?

Mr. PRICE. My recollection is I do, Senator. If I might add, we would love to be able to come here today and tell all of you that we are prepared to supply all of the coal you need in a moment's notice. Unfortunately to be realistic about it, we simply cannot.

To make certain we do not do a disservice to you and the American public, we have been trying to quantify with some degree of certainty just exactly how much coal we could come up with on short notice.

I believe if the amendment you are talking about here today were enacted immediately, within the next week or so, along with S. 2589, obviously the coal industry would get started immediately. Now in terms of quantities of coal that would be available, I think there are two ways to look at it. One is that presently we are operating—our productive capacity is operating between 12 million and 12½ million tons per week.

The highest weekly production attained by the industry since 1969 is 13.7 million tons, that was in May of 1971.

During that year the industry produced an excess of 13 million tons per week six times. It has not reached that level since, although it did produce 12.9 million tons once this year. But we believe at the outside that we might view the near term surge capacity—and I underline the word surge—this is no new mines coming on line, anything like that, that is trying to get as much out of what we have at present—near-term surge capacity of the coal industry could be something between 13 and 13½ million tons.

So if you compare that to what we are producing today, it is conceivable another 800,000, maybe 1 million tons per week, which would be the equivalent on a daily basis of maybe 550,000 barrels of oil.

Now on the second part of that question, Senator, we are advised that the Department of Interior has been looking into this too, and the figures which I have heard go like this. There are about 1.5 million tons of coal now sitting on the ground in the East, eastern part of the United States, above and beyond the 60-day supply, coal-burning powerplants.

There is an additional 12 million tons of coal sitting on the ground at plants which presently burn oil, which are above and beyond the 60-day supply at each of those plants. So it is possible you might have another 13 million to 13½ million tons of coal, above and beyond 60-day supply. I would hate to log those figures into concrete, because those are very rough estimates, and this is some preliminary thinking, we understand, by the Department of Interior.

One other thing which I think is necessary here though is when we talk about the surge capacity, we cannot predetermine exactly where that capacity will come from. In other words, we do not know if it is going to be low sulfur coal. It would be great if it could be. Frankly, I do not think it would be. I think it would tend to be more in the high sulfur coal region, where some high sulfur mines have been closed down, things of this nature, and cut back.

Senator DOMENICI. Were you present this morning for testimony and questions when Mr. Train was asked whether the technology for cleaning the stacks had reached a developmental stage where there was

only a question of whether we could get it into effect within a certain time frame, but not whether scrubbers and the like had reached the point where we knew how to clean the sulfur out of the burning process?

Now would you tell us briefly what your industry contends is the status of stack gas cleaning? Also for my own sake, if you can cite some references where I can find some in depth analysis of where we are, I would appreciate it.

Mr. PRICE. Let me respond to that first, and I will ask Mr. Joseph Mullan, our environmental man, to also respond, Senator.

We have been of the opinion that the $SO_2$ technology in the needed quantity—by needed quantity I mean availability—was not here. We realize that this obviously is a bone of great contention. That is why recent EPA hearings were undergone. We understand according to Director Train this morning, Administrator Train, that EPA has now determined the technology is available.

I think maybe the solution to this problem is if the Clean Air Act were amended to provide generally as follows those sources which utilize the best available air pollution control systems as determined by EPA are hereby determined to be in accordance with the Clean Air Act—I think that way, no matter how we talk about variances, the coal industry is dead if we do not have technology. There is just no getting by it.

The second thing is——

Senator DOMENICI. Let me stop you on the question of "best available" systems. That argument has been longstanding and ongoing. If the best available is not good enough in terms of health standards, then we have got a bad problem. I am concerned about whether we are locking something into the system for variances that will permit the burning of coal that will inject into the atmosphere for prolonged periods pollutants that violate the primary standard. That is why I am asking about the technology, much as in the auto emission situation. Where are we in terms of excuses? Two years? Three years down the line of still not being able to clean it? That is what I addressed the question to, not another approach as to how clean the process should be.

Using the standards that we now have, is the technology developed to the point where we can clean the stack gas sufficiently to comply with the primary and secondary standards. That is my precise question and perhaps you would address yourself to that.

Mr. MULLAN. I believe Mr. Samson's response to that is there has not been any impact to this date of that type of equipment. His response was no. I agree with that. The impact to date has been one or two installations in this country and one or two in other countries. I am not sure if they are meeting secondary and primary in Japan. The one installation I am familiar with in this country that is operating and has been operating for quite some period of time is the same one I am sure Mr. Samson was referencing, and that is the Louisville Gas & Electric plant in Louisville, Ky. That unit has been taking $SO_2$ out of stack, meeting primary and secondary standards in that area for just a brief period of time. I think it is encouraging. I have to follow with the comment that Mr. Samson also noted that scrubbers are now just coming of age.

We now have several of them operating in the world and hopefully from this knowledge that we gain from these that are operating, we will be able to install quite a number of them in the next few years.

One word of caution, and it is a word of caution I think Mr. Samson alluded to previously and hopefully, will come out of this 2-week hearing that has been held by EPA on this subject. That is that we can just build so many of them in the next few years. Part of that discussion you had earlier as to whether you should use low-sulfur fuel in the area, having high-pollution control incident. I think it would be good to look at putting in control devices in those areas having the highest pollution problems.

I think that the two follow. As to the devices, I think we are out of the woods now and starting to do something with them. We get the problem of timing though. If they can only build 10, 15, 16 units in 1 year, it is going to take quite a few years before we meet all of those.

In that interim period, I think the proposed legislation under section (2)(a) under subsection 110 of the Clean Air Act, about three-quarters the way down on the page, the Administrator is authorized to require—and you read down some more lines—schedules shall specify continuous emission deduction measures to be used to achieve compliance, interim steps of progress and reasonable interim control measures to minimize emission of pollutants pending final compliance with applicable emission limitations.

We are not just going to wait until the device is able to be put on the plant, as I read this. You are going to take steps along the way and use the best you can in each one of these instances. I think the legislation has been drafted in a way that you do not wait 4 or 5 years to get something done. You do each of the things you can do right now and still keep working to end control.

Senator DOMENICI. Did you have anything further to say?

Mr. PRICE. No.

Senator DOMENICI. Do you have any reference to a present written resumé of the status of stack technology at this point that I may refer to?

Mr. MULLAN. I can supply you that. I think in fairness that EPA review of the 2-week hearing is due out before the end of the month. It should be the best review. In 2 weeks they took testimony from every known manufacturer and user of $SO_2$ control equipment. That would be the best one.

Senator DOMENICI. Mr. Chairman, I wish to ask that the November 12 Wall Street Journal article be made a part of the record.

Senator MUSKIE. Without objection.

[The article referred to follows:]

[From the Wall Street Journal, Nov. 12, 1973]

INADEQUATE ALTERNATIVE—COAL TO THE RESCUE THIS WINTER? MAYBE SO BUT IT'S SCARCE, TOO, AND MAY GET SCARCER

(By Bob Arnold)

Pittsburgh—Anyone expecting coal to fill the gap this winter between dwindling oil stocks and the nation's energy needs is in for a shock: Coal itself is in short supply, and the situation is likely to worsen before it improves.

Within the past two weeks, dozens of utilities have been told by suppliers to expect substantial oil cutbacks—as much as 30% in some cases—by the end of

this month. So those utilities are seeking to increase sharply coal stockpiles (which fuel experts say may average as much as 60 days nationwide) or to create stockpiles where none now exist, in anticipation of an easing of air-pollution standards as proposed by President Nixon last week.

The result: Since August, spot market prices, as opposed to long-term-contract prices, for steam coal have risen at least 20%, to $11 to $12 a ton. And they are still rising for this type of coal, which is used in electric-generating plants. "I look for steam coal by spring to be $15 to $20 a ton," says coal broker Jack Routh, president of Manhattan Coal Co., Greenwich, Conn. "The minute any of the big Eastern utilities changes over (from oil to coal), there is going to be chaos."

At the same time, severe shortages of some items used in mining threaten to halt production at some mines, possibly within days. "If we don't get relief (from such shortages), I can see a hell of a bunch of mines closing down by the last 10 days of November," says the purchasing agent for one of the nation's largest coal producers.

He was referring mainly to the shortage of diesel fuel, which is used in strip mining to run the big shovels that dig the coal out of the ground and to haul the coal from pit to processing plant. Under the fuel allocation ordered by the federal government, no strip-mine operator is getting any more diesel fuel than he got last year, and just about all of them say they are getting a lot less than they need.

### OTHER SHORTAGES

Ammonium nitrate, an explosive crucial to strip mining, is both scarce and expensive. Earlier this year, price controls helped drive vast quantities to the export market, creating a domestic shortage. When the price controls on ammonia were lifted last month, the U.S. price of ammonium nitrate doubled to as much as $170 a ton.

Meanwhile, underground-mine operators say the supply of roof bolts, indispensable because they hold up the mine's ceiling, is hand-to-mouth, resulting in frequent production delays.

Further complicating the supply picture is a chronic shortage of coal-hauling rail cars. Because of sagging coal demand from electric utilities in recent years, coal-car fleets have been cut or switched to ther uses. Thus, the Penn Central now says it is 200 to 300 coal cars short on an average day. The diesel-fuel shortage also restricts coal transport by barge.

The metallurgical-coal picture isn't any better. Supplies of this product, which is used to make coke for steel production, have fallen increasingly behind demand as steel output world-wide has soared. "Metallurgical coal is just plain short all over the world and will be for some time to come," says Julian Tobey Jr., a Cleveland fuel dealer. Prices for medium-quality metallurgical coal are up 15% from a year ago on the domestic market, to about $17 a ton, and are up 60%, to about $22 a ton, for export. High-quality metallurgical coal is "name your price," one coal broker says. But his main concern right now is with the shortage of steam coal.

While there doesn't appear to be any detailed government study of the matter, a member of the staff of John Love, White House energy chief, says, "We're very concerned about the possibility of a (steam) coal shortage."

East Coast brokers say that if there is a wholesale switch from oil by utilities in their areas—some can't switch because they no longer have coal-burning boilers—it will mean an immediate demand of from 12 million to 20 million tons of coal. (Nowhere near that amount is available.) "There isn't enough coal for them to go back to," says Mr. Tobey, the Cleveland dealer. "If this winter (weather) is bad enough, it will mean shutting off industry, unemployment—all of this."

### JERSEY UTILITY CONVERTING

Among those beginning to convert is Public Service Electric and Gas Co. of Newark, N.J., which has switched two 280-megawatt units from oil to coal and has contracted for an extra 60,000 tons of coal a month. But it wasn't easy. Two small coal suppliers said they wouldn't be able to honor existing contracts because of production problems at mines they depend on. The New Jersey utility now is relying on 14 different supplies for its annual coal needs.

Some who want to switch may find it impossible for other reasons. "I don't think there's a coal company in the East that will supply a certain Long Island

utility," a New York coal broker says. When both oil and coal were plentiful, the broker says, the utility had a habit of taking coal-price quotations, without any intention of buying the commodity but only to play the quote against oil suppliers in hopes of getting a price break on oil.

The supply problem isn't confined to the East, either. "There is no excess capacity in the Midwest," says the marketing manager for a large coal producer in that region. His survey of utilities in the Ohio and Mississippi river basins indicates the plant should be able to squeeze through this winter but they won't be able to obtain as much coal as they burn," thus cutting into stockpiles. "The pent-up demand next spring is going to be damn good," he says. "A lot of the plants we surveyed are summer-peaking utilities."

A MINE TAKES TIME

The roots of the present difficulties are deep. Although much of the nation's coal is supplied through long-term contracts, vast tonnages, especially for utilities in the populous areas east of the Mississippi, come from small independent operators selling on the open market. Some such operators were driven out of business by the costly requirements of federal safety legislation. Because of tough air-pollution laws, many Eastern utilities switched during the past five years from coal to cheaper, less polluting oil. Now, those utilities haven't any regular suppliers to turn to. Brokers say large operators simply won't be able to pick up the slack.

In fact, because of productions problems, some big operators are finding it impossible to meet their existing contract commitments. Eastern Associated Coal Corp., for instance, is meeting only 60% of its total supply obligation according to Eli Goldston, chairman of Eastern Gas and Fuel Associates, the coal company's parent.

Another problem is that coal production can't be increased overnight. It takes a minimum of a year to 18 months to open a strip mine, and from three to five years for an underground mine.

That raises the question of how long a coal shortage will last. "I don't see what's going to stop it from extending into the summer," says David Winkworth, a fuels purchaser for Niagara Mohawk Power Corp. in Syracuse, N.Y.

One result is likely to be a windfall for small producers, most of whom are not included under Phase 4 controls. "When the utilities start to convert, one will have to "steal from another, and then the (pushing and shoving) contest will start," says Manhattan Coal's Mr. Routh.

"One utility will offer to pay 50 cents more a ton for coal, then another will top that, then another," he says. "But these (the small mining companies) are all people who were starving for two years. They deserve to get something out of it."

As the open-market price rises, he feels "you can expect to see contract prices follow them right up," perhaps beginning immediately as large operators renegotiate contracts to make them reflect increased wages for union miners, which go into effect today.

It is possible, some coal brokers suggest that if a way were found equitably to distribute the coal that is now stockpiled and the coal that will be produced this winter, there might be enough to go around. But that seems unlikely to happen.

"I've heard that theory," says Niagara Mohawk's Mr. Winkworth. "But I have no way of knowing when I might have to switch one of my oil-burning plants to coal. I've got to keep my stockpiles up."

Mr. DOMENICI. I have no further questions.

Senator MUSKIE. Senator Clark.

Senator CLARK. Would you just summarize very briefly the thrust of what you would have us do in terms of legislation as you look at this bill for us? You mentioned toward the back of the statement several language changes and so forth, but just briefly what is it that you would have us do?

Mr. PRICE. Senator, I will break it into three parts, the three separate parts of the proposed bill here today. The first part where you

set out the period of November 15, 1973, through May 15, 1974. We do not know if the May 15, 1974, date is the right date. I guess we are just maybe throwing darts at a dartboard and making an educated guess. We think there ought to be more flexibility, and in this regard maybe just deleting that date.

Maybe this thing will turn around before then. I frankly do not think it will. I think it is going to be here for well beyond 1974 and probably into 1975.

On the second part on the study we think it is an excellent idea, and we would want to make sure that beyond the State Air Implementation Act provisions, the plane, they ought to also consider the new source performance standards and any other standards which would not be covered in that study.

On the last part we would suggest that the 1977 date may not be—it may have the same problem that the May 15, 1974 date may have. We do not know if that is precisely the way to do it. Maybe there ought to be more flexibility for the administrator to have. We think also that the secondary standard should also have, as they do in the present Clean Air Act, a reasonable time thereafter.

We also propose a new amendment which would provide for variances for new sources. The way the act is written here it only handles in our reading just existing sources, especially under the first amendment, and there will be some new sources coming on line between now and that date. That may very well run into the same problem of not being able to get the fuel that they had counted on, and may have to go to higher sulfur fuel and they should be afforded the same flexibility for variances as others receive.

Senator CLARK. If we were to adopt the changes that you suggest, what adverse affects do you think they would have on clean air?

Mr. PRICE. That is a tough one to answer, Senator. Of course a lot of it goes to whether or not—given all of that, whether or not we could produce much more over what period of time, if we can get the roof bolts and everything else going, and whether or not we can surface mine some of the low-sulfur coal in the West especially. I do not think it would be that great. I think there would be added some problems maybe with secondary. I am guessing.

Mr. MULLAN. In response to that certainly I want to say that this other gentleman was putting the high-sulfur coal back in the city of New York. We are quite familiar with what levels they were using, 1 percent before. They threw the coal out when it was 1 percent in New York, and now they are talking about a much higher sulfur oil going back in. I do think if you would take it on a plant by plant basis, which is proposed in the S. 2589 legislation, that you look at this on a plant by plant basis, that you will find that many plants could return to coal, burning even high-sulfur coal and meet the primary standards.

Mr. PRICE. If I might just add here, I think it is really a good and positive and progressive provision in both S. 2589 and S. 2680 that this is being done on a plant by plant basis. Just look at it and see what are the facts.

I think too often in the past things were done in a hurry up way and without enough concern looking to what was available and what technologies were available.

Senator CLARK. Is it true that if we are to find an acceptable solution to both the environmental problem and the energy shortage that we have to in the long run insist upon some kind of scrubbing equipment, in order to make possible extensive use of high-sulfur coal? I think one recognizes now that high-sulfur coal—without clean-up technology—is just not going to be acceptable on a long-term basis. What I am wondering is, with the increased price of oil and so forth. Whether maintaining the standards requiring this kind of technology and equipment might give you more insurance in terms of the future for the coal industry, since high-sulfur coal alone is not going to be acceptable on any long-term basis.

If we were to maintain this requirement, given the high price of other alternative fuels, would that not really in the long run assure you of the necessity for your industry?

Mr. PRICE. Senator, if the equipment were available on the scale that is needed and could be put on in time, consistent with a system of reliability, things of this nature, I think you are correct. Our problem has been that there have been too many problems and the systems have not been going on. As a result, coal especially in the east coast—what has happened to coal is what has happened to oil.

In the long run, as you point out, coal has a great chemistry and can be converted into gases in liquid form. Mr. Brennan here has done work on some studies that hold great promise. No matter when these come into effect, you are still going to be consuming coal in its conventional form for a long, long time. You are absolutely correct. Without the technology, without $SO_2$ devices, we are going to have a big problem. We have got them already.

Senator CLARK. The last question which is somewhat peripheral to the question of clean air is that I notice on page 4, middle of the page, you said that in order to encourage the maximum production of coal, we believe that current price restrictions on the industry must be revised.

It is clearly evident there must be further incentive to accelerate the development of additional coal capacity. This can be done through a price mechanism.

What do your latest statistics on profit reveal in terms of the coal industry? Is the industry suffering from lack of profits recently compared to the past?

Mr. PRICE. Generally, and this is from public information obviously because we are not allowed to go into that. What has been published information so far this year, first 6 months of this year, almost every coal company was losing money. It has been disastrous. It has been very bad. It is also, under the Cost of Living Council regulations, anyone who is going to build in some surge capacity, bring on some immediate coal productive capacity, will not be under long term coal contract obviously.

It will be in what they call spot market or may have to be a new contract—no, not a new contract, it will be spot market. Those are strictly regulated under price stabilization, and I think the coal industry really took a beating. It took such a beating that the Cost of Living Council exempted long term utility contracts. It is still not ex-

empted though, the spot markets, things of that nature. If we do not have some relief here, you are not going to be able to get people to produce it on short range.

The costs are absolutely astronomical. They skyrocketed the last 5 years. Maybe there are other industries just like this too.

Senator CLARK. Thank you very much.

Senator MUSKIE. Senator McClure, I wonder if I might ask two or three questions at this point. I will not take 10 minutes.

With respect to S. 2680, what we had in mind was short-term emergency relief. In other words, we would like to see a minimal resort to high sulful fuel, whether coal or anything else, and are willing to accept it providing there is no adverse impact on health, short term. You have testified that you think you can deal with that problem through your surge capacity.

Mr. PRICE. In a small way, Senator. We really do not think we can bring forth a whole lot of productive capacity, say, within the 6 months period.

Senator MUSKIE. Well, in terms of that 6-month period or all year, however it might be defined, that is a short-term problem. We are talking about a minimal problem, not only in terms of what our objectives are, but also in terms of the ability of the generating plants or others to convert to coal. I assume that is minimal in the next 6 months or a year. Do you have any estimate of that?

Mr. PRICE. The only estimate we have, Senator, is the recent Federal Power Commission study which I have a copy of and can submit here.

In that study the Federal Power Commission noted that something in the neighborhood of 63.3 million tons of coal had been converted by utilities into oil. They say approximately 80 percent of that tonnage could be converted by utilities within 1 year, which would work out to be about 50 million tons within 1 year.

Now of course that did not look at our end of it, how much we can supply and also the transportation and handling end of it, which is very crucial especially in your area of the country.

Senator MUSKIE. Most of that would be near the end of the year, rather than near the beginning or middle of that year. I wonder if you would address the handling problem, the transportation problem, and whatever other problems associated with that possibility that you can inform us on?

Mr. PRICE. Fine, Senator. On the handling end of it, especially in the New England area, say Penn Central, that area, when coal was moved out of the marketplace, two basic reasons—first, it was the competition with the foreign oil, but say in the midsixties and thereafter when the Clean Air Act and local regulations came in, coal was moved out, the utilities converted over.

As a result, they tore out some of their coal handling facilities, which they did not need anymore. Their areas for stockpiling coal were too valuable to have sitting there, so they converted them to either tank storage or something else.

The railroads as a result—well, coal is the railroad's largest single commodity and biggest income producer, and when they lost that market, the railroads quit servicing these areas. They literally tore up the

railroad tracks in some of these areas. That is the problem we face today.

Even if we can produce this coal or as much as possible, it is a very real problem of how it can be delivered and moved. But I want to make it clear that we can produce more coal immediately. It is how much. We are hoping for as much as a million tons a week additional, that is, if everything goes right, but to sustain that over the long run is going to require new mines, new men, things of that nature.

Mr. Brennan, would you comment on that also?

Mr. BRENNAN. Senator, I think basically what you are talking about is to take your existing capacity, which in many cases is operating at a level that is as high as they can do under present circumstances, and to change the surrounding circumstances to an emergency, and you therefore can take that capacity to optimal or even beyond optimal.

However, to do that, and this is where we get into the question of the surge capacity, you have to begin to get a maximum cooperation with the employees involved, and everything has to go right.

There cannot be shortages of supply or shortages of diesel fuel, and then you can produce or add another shift or day and you can eliminate some of the routine maintenance you normally do. But this is short term, and we are talking about through the winter months.

Senator MUSKIE. As you see the short term, whether it is 6 months or a year or any period in that time frame, what do you think is the greater limitation, your ability to maximize your surge capacity or these other problems that you have been discussing, the transportation and handling problem? Which is the greater limitation on potential for converting short range?

Mr. BRENNAN. I think in terms of one, two, three, it would be a tie between ability of the transportation system to handle going into the Northeast and our surge capacity to continue operation for months on end. In other words, if you go to, say, a 6-day-a-week operation in underground coal mine, at some point that is unsustainable. You just cannot keep that going. So then it would be one, two.

Senator MUSKIE. Let me ask you this question. It seemed to me that in terms of your interest in industry and your operators and the economics of the industry, it is pretty difficult to think in terms of optimal service to the short-term problem without thinking in terms of long-term commitments in coal.

Mr. BRENNAN. I think that is exactly right, Senator. What we do in short-term surge has to be reinforced by what we do to develop our long-term capability.

Senator MUSKIE. That creates the real environmental problem.

Mr. PRICE. That is right, Senator. One further thing, going beyond the surge capacity, and the difficulty of gearing it up and maintaining it. You obviously in the longer run are going to have to go to new mines. That is where the long-term assurance with today's prices on what it costs to open and maintain a mine—that is where insurance will have to come in.

Mr. BRENNAN. Perhaps I can give you one incidence of this. There is a very large mine in southern West Virginia that was opened specifically to supply Detroit Edison. That mine was opened by Union Car-

bide. It subsequently was closed down because the coal coming from it could not meet the sulfur standards. That is a reasonably, readily available source of supply, but obviously is not going to be reopened for 6 months. This is where you get into the crunch.

Senator MUSKIE. The problem I see long term environmentally is that if you make your commitments now to use the coal, make your commitments now to the industries or the utilities that will make their long-term commitments, we are once again making a commitment to a bad environmental solution.

Mr. PRICE. Senator, in trying to come to grips with this problem, that is why we think that if a source that installs or utilizes and applies the best available technology as determined by EPA, it would be said to be in compliance with the act, then they could go out and say well we are not sure but we are going to try to use X.Y.Z. company scrubber, something like that on this new generating plant. Therefore, the coal company has the assurance that it is not going to be out of business in 6 months or a year on that mine and can get financing to open the mine.

Senator MUSKIE. Suppose that should be insufficient from a health standpoint, then what do we do?

Mr. PRICE. That is a tough question.

Senator MUSKIE. Senator McClure.

Senator MCCLURE. I thought it was a good question. I was disappointed you did not have an answer because we are all waiting for it.

Mr. PRICE. Hopefully we do have an answer if EPA, in fact the result of these hearings hopefully will give us some determination of that question.

Mr. MULLAN. The devices that were reviewed in the course of this hearing this last week and the last several weeks, in fact the ones that have been working in the so-called guarantees, and I put that in quotes, have been such that it would be primary and secondary if you were to install the equipment.

Senator MCCLURE. As of now the manufacturer is not willing to guarantee them?

Mr. MULLAN. I would say on the record of that hearing, which was 2 weeks, we find that some manufacturers are guaranteeing with a lot more credibility than they did possibly 3 years ago when Senator Muskie and I were working with it before. Things have improved since that time.

Senator MCCLURE. I am sure they have. I am hopeful they will improve more. Are they at the status now where we can ask coal companies to produce more for long term with reasonable assurance that their investments will be a good sound investment?

Mr. PRICE. Well, in that regard, Senator, I really think the people that should answer that question would be the Environmental Protection Agency, the ones that have to look at these devices, pass on these utility plants or any source user, or whether or not that technology is available.

Senator MCCLURE. Assuming for a moment that the best you can get from EPA is a statement that the coal users will be required to install the best available technology, would you be confident enough in

that situation to be able to sell people on their ability to use coal and therefore to make a large investment to produce coal in reliance upon that expectation?

Mr. PRICE. I think so. The question then is under such a setup whether or not source—a user of the coal company in fact prove—not prove, but say the EPA does determine there are several different technologies that can be used and they will in fact work on that plant, once the utility or the coal user has made that determination, I think the answer would be, yes, the coal producer could get the financing if there was the contract.

Senator MCCLURE. You have gone one step down the line from the point of my question. My question was whether you are sufficiently confident at this time that that will be the result and that you could at this time start to make the investment or are you going to wait until the utility or coal user goes to EPA and gets that kind of assurance from EPA? In other words, how confident are you that this is going to be worked out?

Mr. BRENNAN. I think I might respond. When a coal company goes to a bank and requests $20 million to put in 2-million-ton-a-year coal mine, the bank has to have assurances within limits that that coal mine can have a payout period sufficient to cover it. Now there involved here a very large question of entreprenural judgment. Where we are now, there is no way that we can get that type of assurance. But as we go through and as this pending legislation tends to lead us, there is the probability of greater assurances, and I think our probability of securing capital is greater at that point.

I might also point out in response to the general climate of the question that is developing here, by Senator Muskie and Senator McClure, that even with the conservation measures as I see it, and they are all very good and we must get them, I do see a continuing upward curve in energy consumption. I think the thing that frightens me is that there is no place we really can go to get our energy except indigenous resources, and I think it would be the greatest tragedy not only to the people who need jobs, but to the environmentalists and all of us who have to live in the environment if the economy or the availability of energy and the economic structure would come into irreconcileable clash with environmental questions. At that point I am not sure where we are going. All I am saying is we must find a way for long term and short term.

Senator MCCLURE. I think you said it is your judgment that you could produce as much as 1 million tons per week additional initially?

Mr. PRICE. Yes; that would be surge capacity. How long we could sustain it, it might be a matter of 4 or 5 weeks is all we could hold to that.

Senator MCCLURE. The FPC study indicated they thought in the utilities area there was approximately 50 million tons that could be converted within 1 year.

Mr. PRICE. That is correct.

Senator MCCLURE. You made some reference to a mine in southern West Virginia that had been opened for Detroit Edison, that has closed down because of restrictions on their operations. How soon could that reopen and provide coal to Detroit Edison?

Mr. BRENNAN. I cannot really respond at this time. It would entail quite a few things, to the degree they maintain the mines, it would take a certain amount of time to get the additional machinery and the support in there. I think the crucial question would be the degree to which the labor force was there and was trained and whether they have gone to other coal mines, and I think the greatest inhibiting factor probably would be the labor supply. I can really not answer.

Senator McCLURE. That is one thing that a great many people do not understand. You just do not walk out on a street and find a coal miner.

Mr. PRICE. That is a 2-billion-tons-per-year coal mine too. It is a good sized one.

Senator McCLURE. How much of the additional capacity that you are referring to, either in the 1 million ton per week initially or in the term of 1 year, would be surface recovery and how much would be underground——

Mr. PRICE. The quickest productive capacity, surge capacity to come in the surface mining area, and it is conceivable, I guess, maybe you could even open up a new surface mine within 1 year in some isolated instances. So that the best bet for your surge capacity could come from surface mining, but some can come from underground.

Senator McCLURE. My recollection in the past is that the coal companies have indicated that one of the deterrents to their operations, particularly in the surface mining, has been uncertainty. Uncertainty of what the law was going to be, uncertainty or diversity between the laws of various States who are asking for both certainty and predictability bills as well as uniformity. Now I read in your statement that you do not like the Surface Mine Act moving through Congress, which seems to me to give you both certainty, predictability and uniformity.

Mr. PRICE. That is the wrong kind of certainty that we wanted, that we would hope for, Senator. Frankly, we are concerned about where the coal will come from, if such an act or bill does come out of Congress.

Senator McCLURE. Is your opposition to the bill predicated largely around the so-called Mansfield amendment or is it——

Mr. PRICE. A great deal of that, but we have problems with a number of provisions within the act.

Senator McCLURE. How much of the additional capacity or production will depend upon the emergence of new technology in the production, in the technology of conversion and in the environmental technology for cleaning up?

Mr. PRICE. In the surge capacity, I would say none, Senator. This would be geared just to get us through the winter and going immediately with what we have. Longer range, longer term, coal production research and development is one of the most neglected areas of the entire energy warehouse that has been worked out. A lot of the coal companies are carrying this out on a company by company basis with their material suppliers. We are happy to see now that Congress and the administration are appropriating moneys and setting up programs directed toward developing on a rapid accelerated basis the necessary

breakthroughs that we are going to need in coal mining production technology, because it is long overdue and we are operating with machinery, that is the last breakthroughs about 20 or 25 years ago. Much of this is literally obsolete. We do need entirely new safer methods of mining coal.

Senator McClure. You have contemplated your answer on production. My question was really can you break down quantitatively the amount of work that has to be divided between production technology, conversion technology and utilization or cleanup technology, three areas?

Mr. Price. Quantitatively I do not think I could. A lot of work needs to be done in all three areas. The production end has been the most overlooked. Obviously a lot needs to be done in the utilization area too, with the gasification, liquefaction, solvent refining, things of this sort. Some, like gasification, are moving along and could have some sort of impact possibly early in the next decade.

Senator McClure. How much money are the coal companies putting into research and development in these three areas?

Mr. Price. We do not have a figure for that, Senator. I know you asked a similar question when we were here before. We have tried to quantify that. One of the problems is the fact that a lot of companies carry this out as I say, with their equipment manufacturer and other companies labeled as research and development expenditures per se. That is why it is so difficult to pin that down.

Mr. Mullan. It is something we have asked them to look at since your questions, and will try to come back with a sensible answer.

Senator McClure. I am concerned very frankly that some of the answers we have gotten in the past would indicate the coal companies are looking only at production research and development. Important as that is, I think there is also some self-interest as well as some public interest involved in looking at research and development in conversion, and I have been happy that the coal companies have been involved in the liquefaction and gasification research undertaken by the Federal Government as a cooperative effort in the Office of Coal Research, but almost nothing has been done by the coal companies themselves at the end of the line in terms of utilization of the fuel or cleanup of environmental effects at that point.

It would seem to me that there is some interest in the coal companies at that point as well.

Mr. Price. There is obvious interest. I think one of our problems has been availability of funds and just where you can put your money and realizing that the utilities and other coal users have been putting money in funds and studies of this nature. A lot of ours went into the production end of it and the gasification, liquefaction, refining, some of those things.

Senator McClure. It may be you have touched on this question. If so, I apologize. I was in an energy markup session in the Interior Committee. We are about to finish that bill down there. What is your feeling on the sulfur tax proposal?

Mr. Price. Senator, the sulfur tax as it has been proposed before, we do not think is sound. We have opposed it for several reasons. One

of the problems we had was that any funds generated from such a tax would go in general revenues and they would not be applied to the problem of emissions to solving the problem.

A second thing is that there is no assurance that the sulfur tax would necessarily bring about a reduction in sulfur emissions, especially in a time of fuel shortage. I think a lot of people would be willing frankly to pay the tax and go ahead and pollute. I do not think that would be the best way to go about it.

Mr. MULLAN. I could cite a particular instance, the city of New York. The sulfur tax in the city of New York, well, their fuel limits are three-tenths or four-tenths percent sulfur by weight. The sulfur tax involved there would be minimal, and yet that is an area that does have an $SO_2$ problem, as opposed to, say, Kansas City, which the normal fuel burned is 4 percent, 3½ to 4 percent. The city does not have an $SO_2$ problem. They have prevailing winds as such that they do not have an $SO_2$ problem. They would be paying a very large sulfur tax. Ten cents is what it would cost, $2½ a ton, so a quarter would be that much more. You would be charging people in that area of Kansas or many areas of the West where they are burning some higher sulfur coals and do not have $SO_2$ problems a large amount of money, when the fellow where they do have the problem is paying very little. I think it would be an inequity.

Senator MCCLURE. Thank you very much. I have no further questions.

Senator MUSKIE. Thank you very much Senator McClure. Thank you very much, gentlemen.

Our last witness of the day is Mr. Fred Hart, commissioner, Department of Air Resources, Environmental Protection Agency, city of New York.

I understand you do not have a prepared statement, Mr. Hart. So why don't you begin and we will see what we can make of this discussion.

## STATEMENT OF FRED HART, COMMISSIONER, DEPARTMENT OF AIR RESOURCES, ENVIRONMENTAL PROTECTION AGENCY, CITY OF NEW YORK

Mr. HART. I apologize for not having a prepared statement. I must point out that we had in New York City today a variance hearing on application from Con Edison to burn coal at two of its facilities, and I fully expected until about 6 o'clock last night to be at that hearing. I think that that emphasizes the particular problems that I noted in the bill. I must say that having sat through the discussions today, the other parties and your questions, the questions and comments, the members of this committee, I am much more encouraged than I was when I first read the language. I do think that much of the ground that I have to discuss here today has been covered. But let me attempt to highlight some of the items that I considered most important.

The draft legislation, specifically section 2, had associated with it what I considered some rather ominous long-term implications. It was really for that reason that I came today. Under the city charter

of the city of New York the commissioner of air resources has the responsibility for protecting the public health in matters relating to air pollution. There is some irony in the fact that this particular legislation will be passed probably in some form or another and be implemented very close to the 7-year anniversary of the Thanksgiving 1966 air pollution episode which led to about 200 excess deaths in our city.

We certainly do not want to repeat that kind of situation at any point in time. Since the episode in 1966, the sulfur dioxide levels in New York City have been reduced about 90 percent. About 75 percent of that reduction since the passage of very stringent sulfur restrictions in 1971.

Particulates which have not really been discussed very extensively here today—and I would like to discuss them later—have been reduced about 40 percent since 1966.

I have to acknowledge that I recognize that if we continue the historic waste of fuel and energy, we will in fact be confronted with a shortfall in fuel in the Northeast this winter. I further have to acknowledge that as a public health official that I would not allow and cannot allow under the provision of the city charter to let the citizens of our city go cold. At the same time, I cannot accept retreat from accepted public health standards from clean air that might result from some frivolous legislation and amendments to the Federal Clean Air Act. It has been suggested that local or State governments cannot guarantee heat and clean air without the Federal Government's help. I disagree. The comments that have been made by the representatives as to the various efforts and controls that we imposed last winter in the city of New York City indicate that local and State governments can do the job.

We received a request last year from two major oil suppliers, Texaco and Asiatic. Their request initially was for 4 million barrels to cover 1 month's supply of oil. We imposed under the provisions of the Air Pollution Control Code an economic condition as provided in that code. The economic condition being 75 cents per barrel for oil that was 1 percent sulfur, recognizing that our sulfur limitations in our code is 0.3 percent sulfur. And should they have chosen to go to a sulfur content of 2 percent or greater, the economic condition was $2 per barrel. As a result of that economic condition, the 1-month variance which was aimed at 4 million barrels was cut to 1.7 million barrels and no additional request was made.

This in essence is 40 percent, and led to a curtailment of about 60 percent of their particular needs, and in some sense the emission tax questions for controlling sulfur emissions has some validity based on our experence.

Last Friday Secretary Brinegar briefed a number of people in New York City on the administration's plan to counteract this winter's fuel shortfall. He indicated measures that would produce 2.35 million barrels per day savings over the winter. Most of the savings come from voluntary actions. One and four-tenths million barrels a day, 60 percent, such as reduced airline flights, improved airline efficiency, reduced thermostats, reduced highway speeds, increased carpooling and

mass transit use. He gave no credit at that time for improvements in fuel savings as a result of daylight savings time, which I understand is included in the bill presently before the Commerce Committee.

He also failed to take into account the efforts that localities were making. city of New York presented on Friday an emergency plan which had many parts, but one of the parts was the banning of the cruising of taxi cabs in midtown. The result of saving in fuel as a result of that particular proposal for the taxi industry was in the order of 6 to 10 percent by our estimates.

In addition, in reading the New York Times on the way down this morning I noted that Governor McCall in Oregon indicated that his State's conservation efforts last month led to an 8 percent reduction in electricity.

In Secretary Brinegar's presentation only 430,000 barrels a day or 18 percent of the total comes from conversion of the 46 oil-fired powerplants to coal-fired plants. There was no credit given to conversion of present low sulfur oil-fired plants to higher sulfur oil. Therefore the benefits of the legislation presently before you, if the administration figures are correct, will be small in the administration's plan to conserve energy.

But I must admit that I do not believe those figures.

As the cabdriver who took me to the airport at 5:45 this morning said in his first statement, well, you know there are a lot of police out on the road and they are going to give me a ticket if I go 50 miles an hour or more. I asked him if he is going to comply, and his response was, first prefaced by a lot of choice New York City cabbie words, but then it was, no, it is for the other guy.

I think we are still caught in that, and a great amount of public relations has to be done by all levels of government.

I also doubt the gumption of all of government to implement the conservation methods supplied. I doubt that the clean air changes intended by the administration are to be only 18 percent of the total savings. If I am wrong, and I hope I am wrong, then the conservation, the greatest in impact, should be given a chance to work since they do not have the detrimental long-term effect of violating public health standards.

Mr. Train indicated that conversion of 26 plants could be done without the violation of primary or public health clean air standards. But the remaining 13 would add nearly 200,000 barrels per day to our present supply. It strikes me that Congress is relinquishing too much control over the process if he gives the administrator power to convert all plants, when 26 can satisfy much of the need without jeopardizing public health.

I must point out that of those 13 plants, three of them are in New York City. We do have the capability to convert them to coal, but should they be converted to coal, they would lead to the violation of primary standards in New York City.

Earlier Mr. Hawkins discussed the ramifications of the failings to hold hearings on variances. Let me expand on that just a bit. As I mentioned before, today is a very important day in New York City. Consolidated Edison has applied for a sulfur in fuel variance and a

request to burn coal as well at two of its plants. The justification was based on a projected shortfall by its two large suppliers of fuel oil. But after their application was filed several weeks ago, it has become apparent to us that neither supplier has a shortage now but might at some unknown time in the future. It is apparent that this panicked action of several weeks ago is a cause for reasoned review of their present and future situation, and most certainly the impact of the remedies for them rather than a wholesale sellout of public health clean air standards.

What does this really mean, the applications that ConEdison has made to us? They have asked to burn high sulfur oil in all of its plants and coal at two sites. Today in New York City we meet the public health standards for both $SO_2$ and particulates over 80 percent of our city. ConEd's variance guarantee that we will violate the standards citywide with peaks twice our present peaks. At Ravenswood, which is notoriously known as Big Allis, a 1,000-MW plant, where coal would be burned under their application and also consistent with the administration's plan, the sulfur dioxide emissions would increase eightfold and particulates by a factor of two. At Arthur Kill, which is the more common plant, and more typical of the four different boilers that we have—four other boilers we have the chance to convert, the particulate emissions would be increased eightfold.

Just as a side comment, the gentleman from the National Coal Association indicated that he had warned the city of New York when we banned 1 percent sulfur coal, that we might at some time have to accept higher sulfur coal as a remedy for the fuel problems. It ought to be known that the great concern at that time was, first, sulfur dioxide, but second would be particulates. We now have a need for the impact as far as particulates are concerned.

The health impact of $SO_2$ and particulates are well known. I would just point out one additional study that affects New York City. It was contained in the September archives of environmental health which showed that New York City children exposed to 1969 pollution levels got more respiratory diseases than others tested later, had more trouble breathing, and were more prone to lung disease in later life.

There is one other point to be made about health effects in this discussion. Earlier this fall you became aware of the potential emissions of sulfates from cars which used catalysts. A concern over sulfate emissions is certainly justified based on new health evidence. Sulfates are the greatest health danger in the sulfur oxide family of compounds.

My staff has reviewed the EPA data as to the potential emissions in New York City of sulfates from cars and concludes that at worse the sulfates might total 1,200 tons per year but more likely 600 tons per year. If on the other hand we assume that the sulfate found in the atmosphere comes from photochemical or catalytic mechanism which most scientists now believe to occur and is in proportion to the sulfur dioxide levels found in the atmosphere, then a change in sulfur standards for ConEd at Ravenswood alone would produce over 1,600 tons of sulfate per year, and were we to grant the ConEd variance that they now requested, it would be at least 20 times the most likely figure of car sulfate emissions with the use of the catalyst. It seems to me that

if the congressional outcry over the potential emissions of sulfates from catalysts were so great, it should be much greater in the particular area that we are discussing today.

I know that you are under a great deal of pressure in this legislation. I get the sense that I have never felt before in coming to Washington today, the tremendous attentiveness that has been apparent, but yet the substantial movement between here and the Interior Committee. So I know that you have to move on this bill and act very soon.

It seems to me that there ought to be three changes of some significance.

The first is I think the complete deletion of section 2 of the amendments as they are proposed—unless a mechanism can be found to be consistent with what I believe the objection is of Mr. Hawkins. I think the concern there is that the primary health standards ought to be the last thing to be violated in the process. If that cannot be done, then the variance procedure which now exists in the Clean Air Act ought to remain there, so there is not the confusion. This is a bill that has had so many court tests, that those of us who spend—we have had about 36 different cases in the last 3½ years, and we had some ramifications of Federal Clean Air Act, and we would rather get on the job of cleaning up the air as opposed to providing lawyers at additional fees.

Second, we think that the administrator should be allowed some extra power this winter to insure the review of each variance. Under the markup No. 3 of the Interior bill, it shortened the time prior to hearings for 10 days, and that to me seems to be a very reasonable time period in a state of emergency that we are now faced with.

Finally I think that we should recognize in the granting of variances that priorities should be given to retain primary health standards. I point out in the briefs that I mentioned—this was given last Friday by Secretary Brinegar, he indicated that all variances would be granted consistent with public health standards. I am afraid in this draft I do not read it that way.

I think it is your intent, I think it is the administration's intent, but I am afraid it just does not read that way. I think as I pointed out that I am in complete concurrence with Mr. Hawkins and the others in their particular approach.

I would like to make one statement somewhat of a personal statement. I recognize the urgency that you work under. I think that there is a history of Americans reacting to crises, to bringing up previously unknown patriotism. I must admit that there is some strong feeling in my family, and as an individual, of this patriotism. I had only one uncle, and he lies in a grave in Normandy where he died September 1944. When my turn came in 1965, which was about 10 months after the Congress passed the Gulf of Tonkin Resolution, I was leading men in Vietnam in the vanguard of 2½ million Americans. I think some action that was taken last week indicated that this resolution has since been renounced, and it has been renounced as a precipitous act forced upon Congress by a rather hysterical administration.

I just ask that we recognize the enormous damage that has been done to my generation as a result of that precipitous action and that action not be taken in this domestic area in a similar fashion. I see

the parallel existing today. I am sorry that Senator Buckley is not here, because he and I have the same view over the East River. We live some 15 blocks away, and I got the word of this hearing only about 6 o'clock last night because I had one of the great experiences as a man, and that is the baptism of my first child, 6-week-old daughter—and as I said, Senator Buckley and I have the same view, we look out across the East River, and across the water are the three stacks of the Ravenswood plant. It would do us both well to realize that the next generation will be confronted with rather lasting problems if we are not careful with the kind of language that we draft today and in this next week.

I hope that my daughter is able to have the kind of life that is long and healthful. I would hope that you consider that in your negotiations, and I hope that some day she is able to thank you for that.

Senator MUSKIE. Thank you, Mr. Hart. Senator McClure.

Senator MCCLURE. Mr. Hart, I think you have given us a very thoughtful statement, and one which each one of us will take to heart. You express a great many of the concerns that many of us have had.

If I ask some questions, they will not be in any way intended to subtract from your commitment or your concern. I am sure you realize that those of us who sit here are confronted with problems that go beyond simply the air clean up problems. I do not think that you want the people in New York City to run out of energy either, and I would not imply from your statement that you are unconcerned about that. I am only wondering if you have the same kind of perception of the energy problem that has been presented to us. That is the reason I will ask the questions, so I have a background against which I can judge your comments and determine what your set of priorities may be.

As I understand the situation, the expected short fall of petroleum supplies in the United States was, prior to the Arab-Israeli conflict, on the order of 5 percent, with increased consumption and with the increased amount of interference with supplies of foreign oil, it is now expected that the energy short fall, petroleum short fall in this country will reach something on the order of 15 percent. It varies above and below that. But it is somewhere between 2 and 3 million barrels per day. It is also my understanding because of the pattern of distribution within this country and the sources of supplies of various forms of energy, that the short fall in New England States in the upper Atlantic sea coast may run as high as 40 percent of petroleum supplies. Do you have any information that would differ from those factors which I have mentioned?

Mr. HART. Well I think the 40 percent short fall is really overstated. I do not disagree on the national level, the degree of short fall potential that you have indicated, the number could reach as high as 10 to 15 percent. There is no question about that.

If I might comment on a statement that you made this morning about how we get there, how we overcome that short fall, the number that you quoted for the State of Oregon, their conservation program, something around 9 percent. As I reread the newspaper article this morning, I found that was really matched up with about half of the

potential savings that is listed in the administration program. In other words, the administration program totals 2.3 million barrels. The contributions that were enacted in Oregon were about 1.2. So there is the potential, if we carry through the programs that have been carried through fairly effective in Oregon throughout the country that we will make fairly substantial strides toward solving the problem.

Let me also make sure that you understand that I do recognize that the public health responsibilities that I have go beyond that of air pollution. There is most certainly the great environmental problem associated with people being cold. I would also point out to you that last year we did have to grant a variance in New York City. We did it. Except we think we did it right. I have also suffered through the tongue lashing of a very disgruntled mayor who found there was a 1 or 2 day supply in some of the housing authority projects. I am quite conscious of the problem.

Senator McClure. The administration's program was designed to achieve a reduction in the demand of some 2 million barrels a day. If the estimates are correct that the real demand is 3 million barrels a day in excess of our supply, then we are 50 percent short of the reductions necessary. If we couple with it my doubt and your expressed doubt that we will achieve all of that, then we have a larger gap between supply and demand.

I certainly would hope that we can reduce demand enough that no variances are necessary, but I do not think we can rely upon that hope without running a risk that a miscalculation could result in a severe disruption of the economy in some areas of our country. I think that is the dilemma that we face.

As you pointed out, you did grant a variance last year because you recognized you had to. I think that is all we are groping for here, to find the mechanism by which we can grant variances if indeed we need to.

Mr. Hart. I think you are on the right course, and the right course is to do everything that you possibly can prior to violating the public health standards. I think that is the course that is acceptable to me as an environmentalist and as a public health official, and I also recognize there are 600,000 jobs, blue collar jobs in the city of New York. It is in some sense an industrial community and the presence of those jobs and the disruptions that result from losing those jobs are something that we all recognize and something that this country can ill afford.

Senator Muskie. Would the Senator yield?

Senator McClure. Surely.

Senator Muskie. I have just one question that gets into the context of those of Senator McClure. There is another question that arises in which we are giving consideration.

Under the 1970 act, it made no difference to us whether standards were achieved by substitution of fuels or by technology, and as a consequence we did not concern ourselves with the difference in the time frame that is involved in the use of one or the other of those options.

Now we are asked to consider this, and it may be true that fuel substitution as a means of achieving these standards is going to be

increasingly minimal, maybe nonexistent, and now we have to consider technology as the only answer or at least the dominant answer to the problem. It is for that reason that I think section 2 is important, that is, if we really have to consider converting to coal, not just short term, but long term as we seek to implement the national objectives of the Clean Air Act, if we have to take into account the possibility or even the probability that we are going to have to depend on switching to coal and not substituting clean fuels, how do we respond to that? In part because of the testimony we heard this afternoon the coal industry's ability to respond to the short term emergency is geared also to its ability to respond to this longer term problem, whether or not you regard it as an emergency. Do I make my question clear?

Mr. HART. I believe so, sir. The question as it relates to New York City really has two parts. The first is the establishment of priorities throughout the country in the way that the low sulfur fuel to begin with is distributed. Obviously New York City, which has always in the past had the highest level of sulfur dioxide in the country, ought to be pretty high on that totem pole.

Second, the same question of priorities exists in the construction of capital facilities to accomplish that job, and is again on that same totem pole that this evaluation should take place.

I would point out to you that the city of New York at the moment is unable to meet sulfur dioxide standards in 20 percent of its areas. We have completely implemented the provisions of the air pollution control code, but because of the difficulty that we have in forcing modifications to oil burners, apartment house oil burners in low-income areas of the city, the South Bronx, Harlem, and so on, we are at the present time not meeting the standards there. We have been working roughly for 1½ years on a proposal that hopefully would be funded out of urban renewal funds or model cities which will be a central steamplant.

Where do you put the clean fuel? Where do you put the capital products, the scrubbers, and so on, that the venders cannot presently produce in sufficient quantity? I think that those priorities must be established; and if the modifications, the amendments of the Clean Air Act can be written in a fashion as to allow that to occur, and to allow that to occur under guidance of the environmental agency with local State impact, that will be satisfactory to us.

Senator MUSKIE. Let me make the point that we are writing national legislation, not New York legislation. Certainly if a case can be made for priority in availability of clean fuels, New York can make that case. But it may be that availability of clean fuels for New York may depend upon the extent to which in other areas, with lesser priority, the policy is such as to permit municipalities to move down the technology, to switch to sulfur fuels, and in the longer timeframes that may be necessary to permit them to do that.

You can do the cleaner fuels bit faster, as you know. The other one takes longer. Should we take that into account?

Mr. HART. Sir; we did not get the clean fuels for free over the last 2 years. We pay about $1 a barrel penalty in the city of New York, and we have broadcast the fact that we have paid an additional $100

million a year for that clean fuel. I think some recognition of that particular effort should be made.

Senator MUSKIE. We are now talking about availability at any price, I gather, as the crisis has been presented to us. I thank you, Senator McClure.

Senator MCCLURE. I think we should point out too that we are dealing with two levels of statutory enactment here in dealing with the problem.

One, that we are addressing ourselves to today that is in essence an emergency question, and also the one which has been now voted out by the Interior Committee which was emergency legislation as distinguished from the permanent allocation bill which is intended to address itself to a somewhat longer range fuel allocation problem. I am not certain that in legislation we can treat the two exactly the same. I think the allocation bill can be drawn more finely, can retain more congressional authority and delegate less arbitrary authority or discretionary authority to administrators, but the emergency legislation dealing with problems which we cannot anticipate with quite the same degree of accuracy has to have more attitude in it. Would you not agree?

Mr. HART. There is an area of the discretionary authority that I am afraid we have, in New York City too much, too much knowledge. That is, we know we will be dealing with Consolidated Edison Co.

Having been on the front lines with that company for 3½ years—this is not unique for my office versus Consolidated Edison; it is the same with every locality versus every major utility that is involved in the situation—the more unclear the legislation is, the more susceptible you are to be spending your time in court and the less chance there is of solving the particular problem that you and I would like to solve, and that is the guarantee of clean air, if possible.

What I am saying is the language ought to be as clear as possible, and there should be as little discretion as possible.

Senator MCCLURE. I think we would certainly agree, you and I, that the statute ought to carry in it as much specific authority and as detailed a guideline as we can write. My point is that we just do not know how we are going to get by this winter nationwide. I am not even certain we can tell you how you are going to get by in New York this winter.

Mr. HART. No, sir. I am sure you cannot. I think that we are pretty close to the situation. Hopefully we are going to be handling our particular problem. I think one of the things that happens is—well, I must say I have a great deal of confidence in Mr. Train. I think he is carrying out his duties and implementing the Clean Air Act to date; his staff which has longer experience——

Senator MUSKIE. I am sorry, Mr. Hart, and I want to apologize, but I have Governor Evans, of Washington, out here, and he wants to convey some message to me from the Governor's Conference. I have finished my questions. Senator McClure has some more questions, so I will leave at this point. Senator McClure will continue and finish up the hearing when he is through.

Senator MCCLURE. I will not take much more time.

Mr. HART. If I could finish the answer to the earlier question, the concern is not so much what happens over this 6-month period or whatever it is to survive this winter. What does concern us a great deal is what happens over the period which at a minimum will be 4 years, as section 2 is currently drafted. Every step of the way in the enforcement of air pollution regulations against the utility in New York City has been fraught with "We can't do that; we don't know how, tell us how."

We have, I guess, the largest air pollution agency in the country. However, we are certainly not experts on utilities. They know how. By offering them any out that there are too few venders, which I am sure there are, to meet that 1977 date, I think that is a real possibility, by offering them some out in terms of discretion under the legislation, you can be assured that our attorneys will be confronted with that and will be taken to court on that.

Senator McCLURE. You referred to this several times, that discretion rather than utilities; is that not correct?

Mr. HART. The discretion is being granted to the—I am not sure you were here for the discussion with Mr. Hawkins, in which he did a much more articulate job than I could, but under section 204(a) of the Interior bill, the President is authhorized to switch plants from oil fire to coal fire. Under section 2 of the amendment, it would be possible then for the utility to continue to burn that coal until the stack cleaning equipment was installed.

Senator McCLURE. I was here for at least a portion of that discussion in which Mr. Hawkins addressed himself to that question, and the implementation schedule could be set up by EPA requiring them to use the best available technology even during the interim; is that not correct?

Mr. HART. In the coal side there really is no best available technology. Either you have the scrubber on it or you do not have it on it. I think that what concerns us is once you make the conversion to coal, you have to fight like the dickens to get it back to oil.

Senator McCLURE. If it is oil that is higher sulfur content, it really does not matter so far as your stack scrubbing is concerned.

Mr. HART. It certainly matters for the particulates.

Senator McCLURE. Except for particulates, but not on the sulfur.

Mr. HART. Not on the sulfur, but I think the technical people will discuss the real health consequences of this particular $SO_2$ mechanism, and they will describe the real concern is the adsorption of sulfur oxide on particulates. That is really where the great danger lies, and with the burning of coal, with more particulates you have a much greater problem.

Senator McCLURE. If we have no alternative though, what would you have us do, if we must do that or go without fuel?

Mr. HART. We are going to go this way. There is no question about it. Let us find every additional alternative that we can possibly have before we have to violate the health standards.

Senator McCLURE. We have another problem which I think is demonstrable. That is with the concept of foreign supplies that has attended the Mideast hostilities, Canada has now told us that they will

cut off, progressively cut off supplies to the upper Midwest and also from Canada south into the New England States. They have said they are sure we will understand, which I think may be an overstatement. I am not sure we are really going to be that friendly about it.

But if there is up to a million barrels a day of reduced supply from Canada, there is just no transportation mechanism available to get additional supplies into New England in those quantities. One of the ways in which it might be done is to ship gulf coast oil in the United States to New England ports. We do not have tankers. The tankers that are available that might be made available are foreign-flag tankers.

The Jones Act says you cannot use them. Now if we get confronted with dilemmas like this, how are we to respond to a very real need for fuel? One of the things that I am told is true, and you would certainly know, that Con Edison as it has sought to meet increasing loads and has been unable to create environmentally acceptable means of providing that load, has gone to turbine-powered generators for peaking. As this load grew, they have added more and more base load on to those turbine-powered generators. Those turbine generators are probably the least efficient means of converting petroleum energy to electrical energy that we have.

They are also the ones that use the jet fuel, which is basically a kerosene, which is most needed in the New England States, and is in shortest supply in the New England States.

If another 400,000 barrels a day is cut off from Canada that flows south into New England, and we have no way of doing it, what is going to happen to the supplies and where will they go, and will Con Edison be able to continue to use those turbine generators in New York?

Mr. HART. Clearly you have stated a series of events that I would say at the least are quite troublesome. There is no question of Con Edison's efforts to add gas turbines which are indeed the most inefficient operators in their system. At least with the gas turbines, you can switch from kerosene to No. 2—there are alternative fuels.

Senator MCCLURE. But every alternative fuel is in short supply.

Mr. HART. Yes, sir.

Senator MCCLURE. And they come through the same transportation network. If you do not have the transportation——

Mr. HART. Within limits, yes, sir.

Senator MCCLURE. If you do not have the transportation to get kerosene there, you do not have transportation to get distillates there.

Mr. HART. The distillates actually would, by modification, for example, modifications of the residual fuel sulfur content, which has been blended down to the low sulfur contents, you will have additional distillate supplies which would come from a different route.

Senator MCCLURE. Then you would be increasing the sulfur content of fuels that are now being used.

Mr. HART. Yes, sir.

Senator MCCLURE. So that you would be imposing a sulfur load on the residual user?

Mr. HART. That is right. I am hoping I am making it clear that as the actions that you described occur, as the situation becomes tighter,

and tighter, and tighter, there will be no course other than the relaxation of air pollution standards.

What we want to occur is to make sure that when it occurs that all the other actions have preceded it. It is those related to primary health standards.

Senator McClure. If we are able to get any conversions into coal, there has to be some long-term effects accepted. I gather that you expect that would happen?

Mr. Hart. I do not know that to solve this year's problem that there is need for that long-term commitment to solve this year's problems, because the coal people have indicated that they would not be able to be providing new coal sources this year.

Senator McClure. A million tons a week.

Mr. Hart. That comes from existing sources——

Senator McClure. But would be available——

Mr. Hart. That is right.

Senator McClure. Now a million tons a week could go somewhere, so there is some contribution they could make on this question this year, this winter.

Mr. Hart. Yes, sir.

Senator McClure. While some people have indicated that, well, these are not very large, they are pretty large to a man that might be out of work.

Mr. Hart. Or a family that is cold. There is no question about it.

Senator McClure. I think you were present this morning when I made the comment that up in my area of the country, the Pacific Northwest, we are low on waterflow in our streams and we are basically hydroelectric in the Pacific Northwest, because it was a Federal commitment for many years. Part of that Federal commitment led to low-cost power which was utilized in interruptible contracts by the aluminum industry.

We have some large aluminum industries in the Pacific Northwest, none in my State, although some of the workers who work in the Kaiser Aluminum in Spokane, Wash., live in my State, commute across the line, but those are interruptible customers who with any low supply of electrical energy will be cut off. They have been told by some to not worry about that. You can get propane. Where in the world are they going to get propane? That is the kind of shift that so many people are assuming can be done easily, and when you start analyzing, we find it is impossible.

Perhaps if there is any difference between your approach and mine, I am just more gloomy about the prospects than you are of meeting the problems by reducing demand alone.

Mr. Hart. I think you and I have stated much the same thing about control and demand. I am a little more sanguine about concerted efforts on all parts of the local government to assure those actions take place. I think if we were in fact, if we did have the policeman on the roads enforcing the speed limits, if we did enact at the State and Federal levels the State implementation plans to control transportation sources, many of those are fuel conserving steps, if we did those now, as opposed to waiting until 1975, as most of the plans specify, we can go a lot further than your gloomy prediction might suggest.

Senator McCLURE. If the American public became convinced that the survival of the Nation was at stake, I am certain they would take whatever steps were necessary, and we would rise to the challenges that have been met before. I am not sure that they are yet convinced that we face that kind of crisis, and I am not sure they would be until they go to the corner gas station to get some gasoline, and there is absolutely none there regardless of price.

I am not sure they will really be convinced that we have an energy shortage until—instead of just being asked to turn down the thermostat, they find there is no fuel. Fifteen percent reduction in fuel to a wholesale fuel distributor may not sound like much. If you reduce your consumption 15 percent a day, it is not bad. If the last 15 percent of the month you have absolutely none, it gets pretty cold. It depends on how it is spread and how the people accept the challenge. I am not at all certain that we are yet of the mind in this country to accept the challenge which I think is much more grave than we have been led to believe as a people in this country. That is the basis of my somewhat less-than-optimistic reaction to the response of people in our country.

I have watched the press reports for the last year and a half and have been fighting with the administration for a year and a half. I have been doing everything I can to point to the conditions under which we find ourselves as being thoroughly predictable. I think you are trying to say the same thing today, let us predict what is going to happen in the environmental problems if we do not react rationally and react as promptly as possible.

I want to thank you very much for taking your time. I know it has been a long day for you. We do appreciate your testimony.

Mr. HART. Thank you.

Senator McCLURE. We have a letter addressed to Senator Muskie from Governor Love and without objection I will make it a part of the record.

[The letter referred to follows:]

THE WHITE HOUSE, *November 14, 1973.*

Hon. EDMUND S. MUSKIE,
*U.S. Senate,*
*Washington, D.C.*

DEAR SENATOR MUSKIE: I greatly appreciate the efforts made by you and your colleagues on the Subcommittee on Air and Water Pollution to respond in a timely manner to the current energy emergency. I am most hopeful that with leadership such as exhibited by yourself, Senators Jackson and Fannin, and many others, that we will be able to respond effectively to the current crisis and minimize the impact on the environment and on the economy.

I recognize that the Congress' responses to the current crisis will be embodied in at least three pieces of legislation, including your proposed amendment to the Clean Air Act. Although I can envision a number of very short term actions which may adversely impact the environment, such as the use of an individual shipment of high sulfur fuel, I can also envision a number of actions which may be of longer duration, such as conversion from oil to coal. I do not believe that we can implement programs when the apparent planning horizon is only six months as provided for in your proposal as contrasted to at least the one year period in the National Energy Emergency Act of 1973, S. 2589. Therefore, I strongly support the testimony offered yesterday by Russell Train requesting that the time period in your proposed amendment be one year to correspond to the National Energy Emergency Act.

Although my primary responsibility is to respond to the Nation's energy needs, I wish to assure you that I am committed to taking no actions that would di-

rectly or indirectly have adverse affect on the environment unless I believe these actions to be absolutely necessary. I am confident that working through the Administrator of the Environmental Protection Agency, we can meet the Nation's energy needs without any unnecessary slackening of our pursuit of our environmental goals. I urge speedy action by your Committee and the Congress on the Clean Air Act with the modification described above.

Sincerely,

JOHN A. LOVE,
*Assistant to the President.*

Senator McCLURE. The subcommittee will be adjourned.

[Whereupon at 5:30 p.m. the hearing was adjourned subject to the call of the Chair.]

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