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DEPARTMENT OF INTERIOR

In the Matter of:

NATIONAL PETROLEUM COUNCIL

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DEPARTMENT OF THE INTERIOR

Meeting of

NATIONAL PETROLEUM COUNCIL

CONFERENCE ROOMS A AND B - DEPARTMENTAL AUDITORIUM

BETWEEN 12TH AND 14TH STREETS ON CONSTITUTION AVENUE, N.W.

WASHINGTON, D. C.

JANUARY 31, 1967

9:30 A.M.

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P R O C E E D I N G S

CHAIRMAN DONNELL: Members of the Council and Guests, the first order of business is the roll call by the Secretary.

MR. BROWN: J. H. Abernathy.

MR. ABERNATHY: Here.

MR. BROWN: Anderson. G. M. Anderson.

(No response)

MR. BROWN: Robert O. Anderson.

~~(No response)~~ was late

MR. BROWN: Mr. Baldridge.

MR. BALDRIDGE: Here.

MR. BROWN: Mr. Bass.

MR. BASS: Here.

MR. BROWN: Mr. Batzell.

MR. BATZELL: Here.

MR. BROWN: Mr. Carrol Bennett.

MR. BENNETT: Here.

MR. BROWN: Mr. Bergfors.

MR. BERGFORS: Here.

MR. BROWN: Mr. Bible.

MR. BIBLE: Here.

MR. BROWN: Mr. Blaustein.

MR. BLAUSTEIN: Here.

MR. BROWN: Mr. Borger.

(No response)

MR. BROWN: Mr. Boyd.

MR. BOYD: Here.

MR. BROWN: Mr. Brazell.

(No response)

MR. BROWN: Mr. Brockett.

MR. BROCKETT: Here.

MR. BROWN: Mr. Bruce Brown.

MR. BROWN: Here.

MR. BROWN: Mr. M. C. Browning.

MR. BROWNING: Here.

CHAIRMAN DONNELL: Mr. Browning, will you please stand. Mr. Browning is a new member of the council. He is President of the National Oil Jobbers Council. We are happy to have you with us.

MR. BROWNING: Thank you.

(Applause)

MR. BROWN: Mr. Bruce.

MR. BRUCE: Here.

MR. BROWN: Mr. Buck.

MR. BUCK: Here.

MR. BROWN: Mr. Burlingame.

MR. BURLINGAME: Here.

MR. BROWN: Mr. John Burns.

MR. BURNS: Here.

MR. BROWN: Mr. E. S. Calvert.

MR. CALVERT: Here.

MR. BROWN: Mr. F. Allen Calvert.

MR. CALVERT: Here.

MR. BROWN: Mr. Casey.

MR. CASEY: Here.

MR. BROWN: Mr. Chambers.

MR. CHAMBERS: Here.

MR. BROWN: Mr. Chandler.

(No response)

MR. BROWN: Mr. Cranmer.

MR. CRANMER: Here.

MR. BROWN: Mr. Doan.

(No response)

MR. BROWN: Mr. Donnell.

MR. DONNELL: Here.

MR. BROWN: Mr. Eckis.

MR. ECKIS: Here.

MR. BROWN: Mr. Elliott.

(No response)

MR. BROWN: Mr. Erickson.

MR. ERICKSON: Here. was not present
Arthur H. Engelhardt was observer

MR. BROWN: Mr. Follis.

MR. FOLLIS: Here.

MR. BROWN: Mr. Foree.

MR. FOREE: Here.

MR. BROWN: Mr. Fox.

MR. FOX: Here.

MR. BROWN: Mr. Getty.

(No response) James A. Ransford was observer

MR. BROWN: Mr. Gonzalez.

MR. GONZALEZ: Here.

MR. BROWN: Mr. Goodrich.

(No response) Walter E. Caine was observer

MR. BROWN: Mr. Graham.

MR. RITCHIE: Frank M. Ritchie representing Ford Graham.

MR. BROWN: Mr. Haider.

MR. HAIDER: Here.

MR. BROWN: Mr. Hamon.

MR. JAMESON: Minor Jameson for Mr. Hamon.

MR. BROWN: Mr. Harper.

MR. HARPER: Here.

MR. BROWN: Mr. Hartley.

MR. HARTLEY: Here.

MR. BROWN: Mr. Hope.

MR. HOPE: Here.

MR. BROWN: Mr. Howell.

MR. HOWELL: Here.

MR. BROWN: Mr. Hurd.

MR. HURD: Here.

MR. BROWN: Mr. Ikard.

MR. IKARD: Here.

MR. BROWN: Mr. Jackson.

MR. JACKSON: Here.

MR. BROWN: Mr. J. Paul Jones.

MR. JONES: Here.

MR. BROWN: Mr. Kantzer.

~~MR. KRAMER: M. C. Kramer~~ M. C. Turner representing Kantzer.

MR. BROWN: Mr. Keeler.

MR. KEELER: Here.

MR. BROWN: Mr. Kelly.

MR. KELLY: Here.

MR. BROWN: Mr. Kiltz.

MR. KILTZ: Here.

MR. BROWN: Mr. Koch.

MR. KOCH: Here.

MR. BROWN: Mr. Learned.

MR. LEARNED: Here.

MR. BROWN: Mr. Levy.

(No response)

MR. BROWN: Mr. Loomis.

MR. PARTRIDGE: Representing Mr. Loomis, John Partridge.

MR. BROWN: Mr. Ludwig.

MR. LUDWIG: Here.

MR. BROWN: Mr. McClure.

~~(No response)~~ was late

MR. BROWN: Mr. McCollough.

(No response)

MR. BROWN: Mr. McCollum.

(~~No response~~) was late

MR. BROWN: Mr. McCurdy.

MR. McCURDY: Here.

MR. BROWN: Mr. McGee.

MR. BENNETT: Phil Bennett representing Mr. McGee.

MR. BROWN: Mr. McGraw.

MR. McGRAW: Here.

MR. BROWN: Mr. Marshall.

MR. MARSHALL: Here.

MR. BROWN: Mr. Mecom.

(No response)

MR. BROWN: Mr. Don Miller.

MR. MILLER: Here.

MR. BROWN: Mr. Otto Miller.

(No response)

MR. BROWN: Mr. Moran.

MR. MORAN: Here.

CHAIRMAN DONNELL: Mr. Moran, would you please stand.

Mr. Moran is a new member of the Council. He is President of the American Association of Oilwell Drilling Contractors.

(Applause)

MR. BROWN: Mr. Murphy.

MR. MURPHY: Here.

MR. BROWN: Mr. Nickerson.

MR. NICKERSON: Here.

MR. BROWN: Mr. Nielson.

MR. NELSON: James Nelson representing Mr. Nielson.

MR. BROWN: Mr. Niness.

MR. NINESS: Here.

MR. BROWN: Mr. Parkes.

MR. PARKES: Here.

MR. BROWN: Mr. Parten.

MR. PARTEN: Here.

MR. BROWN: Mr. Patridge.

MR. PARTRIDGE: Here.

CHAIRMAN DONNELL: Mr. Partridge, would you please stand.

Mr. Partridge is a new member of the Council, is President of the Independent Natural Gas Association of America.

(Applause)

MR. BROWN: Mr. Potter.

(No response)

MR. BROWN: Mr. Rambin.

MR. RAMBIN: Here.

MR. BROWN: Mr. Rather.

MR. RATHER: Here.

MR. BROWN: Mr. Ritchie.

MR. RITCHIE: Here.

MR. BROWN: Mr. Robineau.

MR. DRYER: E. J. Dryer for Robineau.

MR. BROWN: Mr. Robinson.

MR. ROBINSON: Here.

MR. BROWN: Mr. Rodman.

(No response)

MR. BROWN: Mr. Rowan.

MR. ROWAN: Here.

MR. BROWN: Mr. Thomas Scott.

MR. T. SCOTT: Here.

MR.BROWN: Mr. Wilton Scott.

MR. W. SCOTT: Here.

MR. BROWN: Mr. Shumway.

MR. SHUMWAY: Here.

MR. BROWN: Mr. William Smith.

(No response) was present

MR. BROWN: Mr. Spahr.

MR. SOUR: Dick ~~Sour~~ Sauer for Charley Spahr.

MR. BROWN: Mr. Steiniger.

MR. STEINIGER: Here.

MR. BROWN: Mr. Swearingen.

MR. SWEARINGEN: Here.

MR. BROWN: Mr. Taliaf-

MR. TALIAFERRO: Here.

MR. BROWN: Mr. Thompson.

MR. THOMPSON: Here.

MR. BROWN: Mr. True.

(No response) was late

MR. BROWN: Mr. Vaughan.

MR. VAUGHAN: Here.

MR. BROWN: Mr. Vaughey.

MR. VAUGHEY: Here.

MR. BROWN: Mr. Vockel.

MR. VOCKEL: Here.

MR. BROWN: Mr. Wagner.

MR. WAGNER: Here.

MR. BROWN: Ed Warren.

MR. WARREN: Here.

MR. BROWN: Mr. Wells.

(No response). William J. Hull was absent

MR. BROWN: Mr. White.

(No response) was late

MR. BROWN: Mr. Whiteman.

(No response)

MR. BROWN: Mr. Wimberly.

MR. WIMBERLY: Here.

CHAIRMAN DONNELL: Mr. Wimberly, will

stand.

Mr. Wimberly is a new member of the Council. He is President of the American Gas Association.

(Applause)

MR. BROWN: Mr. Winger.

MR. WINGER: Here.

MR. BROWN: Mr. John Wrather.

MR. WRATHER: Here.

MR. BROWN: Mr. Wright.

MR. WRIGHT: Here.

CHAIRMAN DONNELL: You have all received the minutes for the last meeting which was held on July 19, 1966. If there are no corrections or additions, they will stand approved as mailed to you.

Due to the storm in Chicago, some of us did not learn until yesterday, and maybe some of you do not know yet, that one of the charter members of this Council passed away on Friday. Barney Majewski died Friday night of a coronary.

He was one of the most active, respected, and beloved members of this Council. There has not been time to prepare a suitable resolution but I would like to ask Messrs Howard Marshall, Bruce Brown, and J. R. ~~Harper~~ PARTEN to prepare one for submission to the next meeting of this Council.

As is frequently the case, we will depart some from the agenda given to you. I would like now to call upon the

Director of the Office of Oil and Gass, Admiral Onnie P. Lattu.

ADMIRAL LATTU: Thank you, Mr. Chairman. Gentlemen. This morning there are two brief things that I would like to call to your attention. In your book, which you have with you, you will find two items of interest.

The first is our National EPGA Headquarters Conference, scheduled for the 7th and 8th of March. This conference has a twofold purpose, to give the EPGA Headquarters officials a thorough grounding in the new emergency manuals that have been prepared by Ted Nelson and his committee, and to give the conferees a up-to-date background information on international problems.

It is going to be an outstanding program. We have got Admiral McDonald, Chief of Naval Operations, as your luncheon speaker, and General Meyer of the Joint Staff in the morning to speak on logistic support operation in Vietnam and a team from NORAD to give you a presentation on continental defense against missiles and manned aircraft in the evening.

We also have a Colonel Crosson, who was in counter-insurgency operations in the Southeast Asia area and speakers who will cover such subjects as Industrial Civil Defense, EPGA activities in limited war, and international plans and organization.

The invitation includes not only our EPGA Headquarters officers but also the seven regional administrators and their

immediate assistants, U. S. officials in the International Oil Agency, company security officers, representatives of the Foreign Petroleum Supply Committee and its Subcommittee and key Government employees.

We look to have about 200 attending, including some of you gentlemen here who hold appointments to these organizations. I strongly urge you to encourage any of your people who have received invitations to make every effort to attend.

My second topic this morning is a Symposium on future energy sources, that we are holding in Washington, in the Interior Department Auditorium, March 9th and 10th. We are holding this immediately after our EPGA conference in order that the people who attend the first two days can stay for the next two days, because I know it is going to be interesting and there will be some saving in travel funds.

The symposium is being held as a part of our current survey on future petroleum supplies that Secretary Udall announced at the meeting last March. It is designed to give us some help in certain areas of expertise that are particularly hard to come by, new treatments in State control measures and mechanisms.

The first day will be devoted to conventional petroleum, prospects held out by new technology for discovery and recovery of oil and gas, and the role of State conservation agencies in regulating drilling and production.

The second day will deal with new sources of liquids from coal, shale and tar sands, and the ways of converting chemical energy to electrical energy. Here again we have some very fine speakers. Under Geology, we have Dean A. McGee. I notice he isn't here today. Under Geophysics, we have Milton Dobrin, Chief Geophysicist, United Geophysical Corporation.

We have Lloyd Elkins on Drilling and Completion Practices and Secondary Recovery Methods. We have Stephen L. McDonald, Professor of Economics, University of Texas. Richard C. Byrd speaking for the Interstate Oil Compact Commission. He is a General Counsel. And we have many other good speakers.

In addition, the second day, we have on Oil and Gas from Coal, Eric Reichl, Vice President, Research Consolidation Coal Company. Oil and Gas from Shale, H. I. Koolsbergen, President of The Oil Shale Corporation. And Oil and Gas from Tar Sands, Douglas Ball.

In the afternoon, on New Energy Conversion Concepts in the Fuel Cell-Large, we have David H. Archer, Manager of the Processes and Systems Technology, Westinghouse Electric Corporation. William Podolny, Assistant Chief Engineer, Pratt and Whitney Aircraft Corporation, will talk on the ~~small use of scales.~~ Fuel Cell.

All of these are going to be interesting and we know

we are going to have a full house. The auditorium will seat 750 and we already have firm commitment of 350 people. I wouldn't be at all surprised if the auditorium wasn't filled most of the time.

Now, we encourage people to submit papers that day. You people who have any strong feelings on these subjects, and you have someone that is an expert in it, if they will submit a paper and give a three-minute discussion on it or resume of it, we certainly appreciate it because we are giving a half hour after each one of those for audience participation and if afterwards you disagree with the speakers and have something else to add, don't hesitate to send in your comment. Because we need all the information possible in order to take a good look at what is happening between now and 1980.

Thank you.

CHAIRMAN DONNELL: The Secretary has informed me there were 77 members and nine alternates answering the roll call, which is excellent attendance. Some of you may have come in after your names were called. I would ask that you following the meeting make sure that the Secretary has recorded your attendance.

I would now like to present to you as our next speaker, the Co-Chairman of this Council, the Honorable Secretary of the Interior, Stewart Udall.

(Applause)

SECRETARY UDALL: Thank you, very much, Jim.

I am sure all of us feel a sense of loss and sorrow with Barney Majewski's passing. Somebody said yesterday that he was one of the old breed and that when the last of them go, something will be really missing. And although I just knew him in recent years, I remember the very wonderfully refreshing and blunt way he had of stating his views. I must say I thought he was a very valuable and pleasant person to have around and I know we will all miss him.

I am leaving tomorrow on a trip to see a part of the world that many of you are familiar with, and where you pioneered a resource development. It is my first trip to the Middle East and I will be discussing water problems, petroleum problems, resource problems in general, so if you have any unsolved problems that aren't of too large magnitude you could talk to Cordell or Admiral Lattu about them and I will pass the word along and be glad to help out if I can.

Before I move on to my prepared text, I wanted to say one or two things to you that concern recent developments in the Department that are of particular interest to the petroleum industry.

After a great deal of agony and soul searching, and much of which is time consuming, there have been very few who have criticized me at this point for moving too fast on oil and shale, and quite a few who said we were too slow, but we

did move on this last week. If you haven't had a chance to read our press release, I suggest you do so. If you are interested in the details of the press conference we had, that can be made available to you. If you would like a briefing by the people in the Department, who are most knowledgeable, we would be very happy to make that available.

I do think, however, and I want to say clearly to all the people in this industry, and I will make a similar statement to the minerals industry people at the first opportunity, that this is such a fantastic resource in that it has such long-term significance for the country as a whole, that I for one would like to see us move as I said the other day, with deliberate speed, consult very thoroughly with everyone involved, get the very best ideas and most creative concepts that are possible. Maybe we can break new ground here and move forward in an orderly way with the program.

We probably are going to end up as a result of this, in my judgment, with perhaps--and we may have to ask for some legislation to do this--with some type of industry/government relationships, and industry/industry relationships that would be new to this country. Not startlingly new, but new in the sense that the development of a resource of this magnitude and variety obviously calls for the very closest look at new tools and new relationships that may be necessary.

So our doors will be open, we are ready to answer

any questions, to hear any proposals, to listen to suggestions, when we promulgate our rules and regulations. We welcome, more than you know, any comments that anyone has.

I have learned one thing as a government administrator early, and that is when you approach any subject that has a potential for controversy, the more open the discussion of the matter, the more alternatives are discussed, the better; the more people you talk to, the better. And this has been our approach on this problem as John Kelly knows and as Cordell Moore knows, and as Dr. ~~Hibbert~~ Hubbard knows. Because we not only have the problem at the outset of the research and development that are necessary, to move this resource from the capacity of a reserve that we do not have the capacities to tap, to a reserve that is useful and we must undertake this task and, of course, we are already, some of you already have made big investments and have already done some of the work that is necessary.

We will also have the long-term task, not dissimilar from that which the Canadian Government has faced with the development of its tar sands resources, of deciding how to phase in the development of the great oil shale reserve so that this has a minimum of disruption in terms of the total petroleum economy and energy economy and that in terms of the mineral values that we believe are present in at least some of the oil shale areas, that these are brought in to serve the national

needs at the right time in the right way.

I wanted to depart from my text here to talk about this just a second, because I have the feeling that the step that we took last week after having all hands on deck for several months, having everybody in the Department who had any responsibility to touch this area, work on the problem, I think that there is no decision that I and my associates have had to make, that concern the energy economy of our country , our oil and gas, that has been of more significance, and there is no decision that I made that I would like to look back on with more satisfaction when my tenure is finished, of saying, well, we got it started off right and we got it set up so that it will serve the long-term interest of the country.

This is a complex subject, I don't want to say more about it, except I want you to study and scrutinize everything we have said, I want you to put your thinking caps on, and I think we have faced a very interesting and fascinating period ahead of us over the next five or ten years, in deciding how and where to move forward and how to make this resource serve the people of the country.

I want to begin my remarks, prepared remarks, today, with a resume of some news items that have appeared over the past several months of the type that are straws in the wind.

Last June, the TVA signed a contract with General Electric to build two 1.1 million kilowatt nuclear power plants,

with a guaranteed declining fuel cost over the first 12 years of operation. This caused a considerable gasp in the electric power industry and should have. This occurred in the heart of the coal country, and it bespoke an investment attitude that specified nuclear power for 55 percent of the new generating capacity contracted for in this country last year, again a rather startling figure.

At the end of the year, the Oil and Gas Journal's roundup of world petroleum activity in 1966 indicated that the proved reserves of crude oil in the Free World outside the United States had increased over 1965 by 35 billion barrels, including 19 billion in the Middle East, 10 billion in Africa, and three-quarter billion in Canada. In four countries of the Middle East, 1,066 wells flowed 8,200,000 barrels of oil a day--just about the amount of crude produced by the United States in the same period.

In 1966, for the first time in history, consumption of electric power in the United States exceeded one trillion kilowatt hours, double the amount used in 1952. Two-thirds of the thermal energy used in generating this power was supplied by coal.

In December, the Department of Health, Education and Welfare, another straw in the wind, served notice of its intent to issue standards for sulfur oxide emissions to be applied to fuels used at Federal installations in New York,

Chicago and Philadelphia, to be effective by October, 1968. Virtually no residual fuel oil on the market qualifies under these criteria.

Now there is nothing unique about these items I have just cited. You have noticed others of equal tenor or even more significance. You could make up your own list and I predict that when you got through, it would say the same thing: namely, that from here on out you--and this can be extended to anybody in the energy business--are going to have to run twice as fast to stay in the same place from here on. And two large burrs under your saddle will help you do it: costs and competition.

Market competition has always played the leading role in accomplishing the production and distribution of goods in our capitalistic society, and it has done so very effectively. In the energy field it has provided the Nation with adequate, secure supplies of energy at very low cost, and it has given the consumer a wide range of choice, not only between different forms of energy, but between sources of the same form. As a result, the Nation's energy bill in 1966 amounted to about three percent of the Gross National Product, and the United States has never lacked for energy at any time or in any form that it was truly needed.

Obviously the petroleum industries have thrived under this competitive environment, both here and abroad. Since

the beginning of this century, consumption of oil by the United States has increased by a hundred fold; of natural gas by 65 times. The domestic segment of the industry alone is 125 times the size it was in 1912, when its total assets came to less than $600 million. Moreover, oil and natural gas were so successful in taking markets away from coal that by 1961 they accounted for 74 percent of the energy consumed in the United States. And basically, they did it on cost, as all of you know.

For reasons having to do with the production, transportation, marketing, or utilization of fuels, or some combination of these factors, the consumer got more for his fuel dollar out of oil and gas than he did out of coal. The competition was not only on a BTU basis between coal and petroleum hydrocarbons for the industrial, commercial, and electric utility markets. Outside the obvious competitive arena, the dominance of petroleum and natural gas in the household heating and transportation sectors attests to the fact that it is cheaper to use oil and gas that occur naturally than it is to make them out of coal.

Years before there ever was a petroleum industry in this country, coal was supplying a market for both oil and gas, as we know. It ceased to do so because within the technology available these synthetic fluids could not complete on a cost basis with the abundant supplies of natural gas and

oil that were discovered.

By now, however, it ought to be pretty clear that a new game is starting, and that is where the interest begins. The competitive inroads into coal's markets that proved to be so lucrative to oil and gas over the past 20 years are just about over, or so it seems to us at Interior. Coal has not only stopped losing ground, it has been gaining slowly but steadily in the electric power generation market since 1960, and in the industrial sector since 1962. The coal industry with its back to the wall in the late fifties, fought back and in a rather admirable way, it seems to me. Because some were already preparing the requiem at one point and I think what has happened in the six years that I have been Secretary has been dramatic.

But here again, the answer lies in cost competitiveness. Between 1957 and 1966, the average price of coal at the point of origin declined from $5.08 to $4.55 a ton, a drop of 10.4 percent as against a decline of 6.8 percent for crude oil and an increase of 41 percent for gas over the same period. Even greater savings have been achieved in coal transportation, so that the electric utility industry for example, now gets its coal at 24.4 cents a million BTU burned as against 26.0 cents per million as recently as 1960.

Of course, this just didn't happen, it happened as a result of automation above all, of cost cutting, of a very

bold and statesman like decision--and I don't think he has ever been given enough credit--that John L. Lewis himself made when he saw that coal's only hope to stay in the old ball game was to automate, and that this would mean fewer jobs, but that it was better to have fewer jobs probably at higher paying with higher skill than to have no jobs at all.

The result of coal's turn-around has been an equilibrium that has lasted since 1960, during which the portion of the total energy market served by oil and gas has moved between 73 and 74 percent. This suggests that in the future the petroleum industries will be less concerned with capturing markets than with defending those they already have.

Year by year, an array of social, political, economic, and technological forces have been setting the stage for the energy competition of the future. No one can have gone through the past two years without becoming aware that the America of the late Sixties and Seventies is not going to put up with the smoke, the soot, and the noxious and corrosive gases that have blighted our countryside for these many years gone by.

This is timely. All we need to do this morning is pick up the newspaper and the main story on the front page is the President's message of yesterday with regard to air pollution control.

Nor, might I add, will people stand still for the

continued desecration of our hills and valleys and streams by extractive processes that gouge and slash and leave only ugly spoilbanks as monuments to their passing. We are now rich enough as a Nation and we have the technology and we understand the art of conservation, that we can do whatever is necessary to provide the minerals and the fuel that our country needs and still have a clea, attractive country.

I think this is something that we have just come to in the last two or three years, because the old attitude was that being a country that was successful, that any country that was successful and was heavily industrialized had to be an unclean country and that this was just part of the price you paid. Well, we have a new attitude with regard to this.

And the enlightened heads of industry today are not hanging back, they are leading out in helping find the solutions and the answers to make this possible.

We all want a clean, safe, attractive living space for ourselves, our children, and our grandchildren. And we are willing to do whatever is needed and pay what costs are involved to insure that we get it.

And the very essence of this whole approach in my Department has now, which we did not have a year ago, as a result of the President's--what I thought was a very wise decision by President Johnson, the responsibility for the water pollution control, water clean up program in the Country, if

we can put all of industry on the same footing or roughly the same footing so that there are no competitive advantages to the company or companies in particular states or regions, who might want to take shortcuts or to not do their part of the clean up campaign unless we can get everybody on the same footing, and that is what we are trying to do with the new water quality standards; then I think we have a sound way in keeping with our system of government, to lick the big problem of our air pollution and water pollution.

It is inevitable that some portion of these cleanup costs will fall upon the energy industries, and the success which these industries and the companies within them have in holding their market position will depend on how effectively they are able to control those costs.

I spent a fascinating 30 or 40 minutes a couple of weeks ago, one of the executives of one of the larges companies brought his research people down to show us the research they were doing and the pushing they were trying to do on Detroit, to solve the auto exhaust problem. I was very interested in this, because from some of the things that we had read here and heard, there was concern that the automotive industry in particular, and some segments of the petroleum industry, weren't fully aware of the real danger in terms of markets and economics unless aggressive, vigorous, farsighted research programs, new research programs, are initiated now.

But I know some of you are taking these programs on. I know the API is getting in with both feet now but I am simply saying we are going to probably have to do all of this and more to meet the standards that the country is going to insist upon.

I am making no bets and no predictions here. I am simply saying that the pollution abatement measures that are bound to come may alter--perhaps quite radically--the existing cost balance between competing fuels--this is the interesting thing we are all keeping an eye on--and in so doing open up the possibilities for an extensive redistribution of market share among energy sources and those who make them available for public use.

The effect of nuclear competition, which I mentioned earlier, with coal for its principal market, is quite likely to spill over into all sectors of the energy economy. Coal in its conventional form and application has a substantial capability of becoming more cost competitive, especially through more efficient transportation.

Some of you may have noticed the other day that my own Department in terms of encouraging the development of Indian coal resources, working with Southern California Edison, with Peabody Coal, with the Beckle Corporation, with the Southern Pacific Transportation Company, there will be a coal slurry pipeline that will run over 200 miles from the Navaho Indian

country, to the extent of the State of Nevada. It will be the largest, longest, coal slate pipeline in the world. Here, again, is a revolution in transportation and it turned out some of the railroad people, Santa Fe people, didn't believe that it could be done. And yet when we put our best economists and experts on it to analyze it out and when we talked to the Beckle Corporation people who have already accomplished some of the finest or most daring pipeline projects in our fields, we were convinced that it was utterly sound and would work.

But here again is an industry trying to get a little more of the competitive advantage by trying out something new that will cut costs.

But what is more significant, there will be the greatest pressure for coal to accelerate its efforts to achieve conversion to liquid and gaseous hydrocarbons on a commercial scale. Again, we talk a lot about this, and here is another question mark on the horizon: what effect will this have; how likely will it happen?

Oil and gas from coal are, I feel, realistic possibilities within the next decade--and at declining costs as conversion technology progresses along the learning curve. The household heating market--which is already being reopened to coal indirectly through electricity, will be a direct target for fuel oil and gas from coal. The transportation market, which has been almost the exclusive province of oil since the late

Fifties, will have an alternate source of liquid fuels.

There is one thing more, to balance out the picture, our relationship to the world oil market is conditioned by two basic facts, one economic, and the other strategic or political. The economic fact is that we could supply our oil needs from the world market at substantially less cost than we are presently doing. This is an old fact and it is not in dispute. The political fact is that for cogent reasons of national security we have chosen to disregard the economic fact, to the extent that we protect the domestic market for seven out of every eight barrels of crude oil we process. We are admittedly paying a premium for our large and vital capability for domestic oil production, and we consider the benefit to be well worth the cost.

And I think that the system, as I said to the IPAA people yesterday, I don't expect to see a time when I am Secretary, there won't be argument about the oil import program, but I would submit the proposition that we have a better oil import program today than we had six years ago. It is more equitable, that it works better, that everyone understands it better.

But we recognize that the wall which protects our domestic market cannot hide this cost from those who must pay it, and that the prices the rest of the world pays for its oil must inevitably influence those we pay for our own, if only

indirectly.

There is the other thing that is interesting to speculate on, too, particularly with Western Europe, that as the new petroleum and gas resources develop, what is going to happen on the Shelf in the North Sea and Algerian and Libyan fields, the fields nearest to Western Europe, what effect that will have vis-a-vis U. S./Western Europe competition in all fields. Because we know how important energy cost is, as a component of the whole big economic ball game.

What I am suggesting then, gentlemen, is that the weight of the evidence strongly argues for a greatly intensified competition among energy sources for future markets. This is the main fact that I wanted to get to. I think it is rather obvious. This isn't anything new but I think it is a big fact of life; it is there, it is written large on the wall, and we ought to stop and ponder it.

The truth of the matter is that nothing in my judgment, save perhaps your investments in research, and our development of a superior capability to do research and development work, nothing has done more to keep this country competitive in the world market place, than the fact that our energy costs have held steady or have declined. This is as it must be, and in a nation where most things inflate, over a period of time when you see electric power costs, when you see the cost of energy holding steady or declining, even in

inflationary periods, this is something that bespeaks national strength in my judgment.

In these circumstances the relevant factor is not the relationship that prices for your products may bear to some benchmark in the past, nor to the general price indices in the future, nor even to the actual costs to you of placing them on the market. The real issue is the value your products offer consumers in the face of competitive offerings of other energy forms and sources. This is the relentless fact with which you must deal, and all the king's horses cannot prevent the energy market from responding to forces which are mainly economic in character and origin. Palliatives and remedies which may give temporary relief--but which in the long run tend to make petroleum less competitive--are foredoomed to failure.

Your industry rose to greatness because it was aggressive and self-reliant and willing to take risks, because it had the competitive spirit, because it provided the nation more for its energy dollar than competing sources could do. I suggest it will remain great as long as it adheres to those principles and in this direction, I suggest, lies the true and proper answer to the problems of the future.

I wish I could stay for the meeting, but I have got a lot of work to do before I leave town tomorrow and I hope you will excuse me. Thank you.

(Applause)

CHAIRMAN DONNELL: It is now my pleasure to present the Governor of Mississippi, who is also serving as the Chairman of the Interstate Oil Compact Commission.

Our distinguished guest is the son of a distinguished father, the late Governor Paul B. Johnson, who was elected as the 46th Governor of Mississippi in 1939.

Our speaker is a native of Hattiesburg, and a graduate of the University of Mississippi. He is a lawyer and served as Lieutenant Governor of Mississippi from 1960 to 1964. He became Governor of his State on January 21, 1964.

It is a great pleasure and privilege to have you with us, and we are looking forward to hearing from you, Governor Johnson.

(Applause)

GOVERNOR JOHNSON: Chairman Donnell, Distinguished Federal Officials and Members of the National Petroleum Council:

The National Petroleum Council is among the most prestigious groups ever assembled to advise an agency of the United States Government. Consequently, I am not unmindful of the honor you have conferred upon the State of Mississippi and its Governor by your gracious invitation to be here today.

I am proud that the State of Mississippi is represented among your membership. Bill Vaughey has kept me

apprised of the significant contribution the Council is making to the petroleum policies of the Department of the Interior and the Nation.

I have been particularly impressed with the work of the Council's Committee on Emergency Preparedness, whose final report will be presented at this meeting.

It is certainly a tribute to the dedication and effectiveness of the petroleum industry that yours is the only industry thus far which has completed its emergency planning and disaster programs to be used in the event of either nuclear or conventional enemy attack.

That such preparedness and preparations are necessary underlies the fact that we are living in one of the most challenging eras in American history. The winds of change swirl -- the currents and cross-currents of power and alignments and alliances wash against the will and the purpose of states and nations.

As we meet here in the capitol of the free world, our interests and our commitments span the globe whether as participants in armed conflict in Asia or as partners in peaceful pursuits in Europe, Latin America or Africa.

Our Nation's strength abroad is utterly dependent upon our strength here at home. In the world in which we live no natural resource is more essential to the strength and vitality of this Nation and the free world than petroleum.

The National Petroleum Council was born out of the experience of Government-Industry cooperation in World War II. The Council's peacetime contribution to national petroleum policies during the past twenty years has been no less significant.

In formulating a truly effective national petroleum policy, the cooperation of the States with the Federal Government is indispensable. As Chairman of the Interstate Oil Compact Commission this year, I pledge you that cooperation.

This year will mark the thirty-second anniversary of the Interstate Oil Compact Commission. The success and accomplishments of the Commission clearly demonstrate the practicability of voluntary cooperation among the States in the solution of mutual problems.

It provides a forum for interstate cooperation not only to prevent the avoidable waste of oil and gas but to further efficient practices in petroleum production.

In addition to the organization's encouragement of further conservation laws and more efficient conservations rules and regulations, the Commission has concerned itself more and more with the dissemination of information of new technological developments. The Commission is cooperating with the Independent Petroleum Association of America, the American Petroleum Institute, the Department of the Interior and others in the industry to perfect oil and gas statistics by developing

standardized definitions, instituting uniform reporting of compatible data handling systems relating to petroleum statistics being accumulated by the states.

Further, the Commission has begun a project to expedite reporting natural gas on a comparable pressure base. This is a project never undertaken before and still not completed. We are confident, however, that eventually we will have natural gas statistics reported that will be as accurate as the reports upon a forty-two gallon barrel of oil.

The Commission has recently completed a number of cooperative projects with the United States Bureau of Mines, the National Stripper Well Association and the American Bar Association. The publications, which have resulted from these cooperative efforts, are, in my opinion, invaluable to the future growth of the industry.

The Commission's responsibility for maintaining an accurate flow of statistical information on the current status of the industry in its member states continues to constitute one of its more important functions.

It is our strong hope that this year the Commission will awaken a new interest in self-evaluation and self-improvement by the States and their regulatory agencies.

The Commission can serve as a brighter beacon light by which states may assume justly and more comprehensively their responsibilities in conserving oil and gas -- and in

helping to maintain a regulatory environment that will encourage the domestic petroleum industry to help supply the future oil and gas needs of the United States.

The State of Mississippi's experience with the petroleum industry has been most rewarding. Oil and gas is a major industry in our State and is exceeded only by agriculture and forestry in economic importance.

The Mississippi petroleum industry, as a whole, is the State's largest taxpayer. The industry has been a vital factor in our rapid economic development since World War II.

It is an interesting personal coincidence that the day after my father's election as Governor of Mississippi in 1939, Mississippi experienced its first commercial oil discovery -- the beginning of the famous Tinsley Field.

In the 27 years since Tinsley, production has grown steadily until today Mississippi is the ninth largest oil producing State in the Union.

In 1966 a total of 853 wells, including both wildcat and development wells, were drilled, and 29 new discoveries were established. Total oil production for 1966 was approximately 57 million barrels.

Wildcat drilling activity during the past five months indicates the possibility of large, new oil reserves. Our new field finds have been from the cotton valley and smackover lime zones of the jurassic system. These significant deep

discoveries, along with the finding of the Bay Springs Field in 1965, have opened up a trend era on the northwest-southeast line from the Mississippi River to the Alabama border.

In view of these important developments, the year 1967 could well see the largest deep well wildcat drilling boom in Mississippi's oil history.

The search for oil and gas has inaugurated a new industry in Mississippi with sulphur being extracted from gas produced in the Loring Field of Madison County. Tests are underway on a wildcate well in Perry County to extract sulphur from gas produced at a depth of 19,768 feet.

Tests indicate that if the well can be produced commercially, sulphur can be extracted at the rate of 47 long tons per one million cubic feet of gas per day.

Mississippi to date has no offshore production; however, the State's offshore land and embayments, comprising over eight hundred thousand acres, are under lease, and geophysical work is being done.

Only two wells have been drilled in the State's offshore waters, and increased exploratory drilling in this area could very easily place Mississippi among the States with offshore oil production. The adjacent waters of Louisiana have large producing oil and gas reserves, and it is very possible that similar structural conditions exist in the Mississippi offshore waters.

The Basic Conservation Act which regulates the industry in Mississippi was enacted in 1948 and has been described as "one of the best in the country."

From the time of its creation, the Oil and Gas Board has been efficiently administered by men of integrity and dedication -- and as you well know, the effective and efficient administration of an Oil and Gas Conservation Act is as important as the Act itself if the objectives of conservation are to be accomplished.

On January first of this year, the Mississippi Board adopted the American Petroleum Institute's well-numbering system. This is a unique system, applicable to all wells on land and offshore in North America. This practice is recommended for the unique identification of wells in electronic data processing by all agencies of the industry and Government.

Mississippi was the first state to adopt the Interstate Oil Compact Commission's recommended standardized forms for reporting of oil and gas production, well completions, permits, and other matters. These standardized forms make it much easier for both industry and Government to assemble the vast important data pertaining to oil and gas reserves that are in the hands of state regulatory bodies.

Both the steady expansion of the industry in our state and the outstanding performance of Mississippi's Oil and Gas Board are sources of real satisfaction to me.

During my tenure as Chairman of the Interstate Oil Compact Commission, it shall be my purpose to encourage a policy of close cooperation between the industry's leadership and Government at both the State and Federal levels.

If my administration as Governor has been successful, it has been largely because of the enthusiastic and selfless assistance rendered the State by business and industrial leaders both from within and beyond our borders.

The talents of these specialists in objective, systematic analysis and techniques of corporate management have been effectively utilized in solving problems in the public domain.

The brainpower of American business and the genius of American industry are invaluable in any effort at either the State or Federal level to make Government more responsive to the needs of our people in the complex age in which we live.

This age of the atom and age of space is a time of trial for all Americans -- on our strength depends the future of civilization.

Our strength is founded on faith -- in God -- in the dignity of man -- in the worth of the human spirit -- and in our incomparable governmental and economic systems.

Let us -- in both Government and industry -- in this testing time -- so conduct ourselves that we can say with Luke, the inspired writer: "We have done that which was our duty to

do."

Thank you and God bless the members of this fine association.

Thank you.

(Applause)

CHAIRMAN DONNELL: Thank you very much, Governor Johnson. I am sure the members of this Council appreciate very much your being with us today, representing not only your State of Mississippi, but the Interstate Oil Compact Commission.

I would like to call next on the Honorable J. Cordell Moore, the Assistant Secretary of the Interior for Mineral Resources.

HON. MOORE: Mr. Chairman, Governor Johnson, members of the National Petroleum Council, and friends.

Shortly after nine o'clock, I wasn't at all sure I was going to get here, I spent from nine until about 9:25 on an elevator that was stuck between floors in our Department.

(Laughter)

But you were not fortunate enough that I should stay there another hour.

(Laughter)

January is traditionally the month for forecast and review; and I hope you will excuse my voice, because I did pick up a little cold some place. I don't think it was in that elevator. That has been a little recent, too recent.

This month has been traditionally a month for forecast and review. And there is something about the process that reminds me of Bernard Baruch's comment when someone asked him about his role as advisor to seven Presidents. Mr. Baruch said, "It's rather simple. People ask my advice because I have good judgment. Good judgment comes from experience. Experience -- well, that comes from bad judgment."

(Laughter)

This is the time of year when some of our more improvident guesses about the future come home to haunt us. In the case of 1966, however, most of us will be forgiven our transgressions because the actual performance of the industry was so much better than what anybody could have imagined this time a year ago. Domestic crude oil production averaged out at 8,325,000 barrels a day -- up 6.7 percent from last year for the largest year-to-year gain since 1951.

It was the first year the United States produced over three billion barrels of crude. This, of course, is not quite as good as it looks, since the gain in actual consumption of petroleum products was a little under 5 percent -- but still it was an extraordinarily good year for oil. Natural gas marketed came to 16.7 trillion cubic feet, for a gain of 4.3% over last year. Production of gas liquids reflected an even larger gain of 5.5%. These operating gains were carried down to record earnings for the industry as a whole, and at

the same time the integrity of the petroleum price structure was preserved. The petroleum industry did exercise considerable restraint during the past year. This is, I am sure, appreciated by the consumers and enhance the image of the industry.

While a number of regional adjustments in crude prices were made in the interest of balance and equitability, the average price country-wide advanced by only two cents a barrel over last year's $2.86. This was less than a one per cent increase -- although it still added $60 million to well head revenue.

I recognize the fact some of the independent producers and many of the other producers would have liked to have seen a larger price increase, nevertheless, on a balance it is a commendable action on the part of this very fine industry.

Your restraint has been commendable, and your support of the President's efforts to prevent a disastrous inflation are appreciated. You can do your country no better service than to continue your endeavors to provide energy to its people at the lowest possible cost.

There was, in fact, only one dark spot in the petroleum picture last year. This was in drilling activity. The year's total of 34,000 wells was a disappointment to many people, especially to me, since I had predicted last February

that the industry might drill as many as 44,000. The TIPRO Reporter took occasion to remind me of my competence as a soothsayer in its last edition, which had a cartoon showing me as an archer who had expended fifteen arrows, none of which hit the target.

I want to thank Mr. Koch for sending me a copy of my cartoon for my office. I appreciate it and will have it there to remind me I had better not do too much crystal gazing. I might add I have a little better luck shooting quail with a shotgun than I did hitting the target this time. I do remain hopeful, however, that you gentlemen on the industry will, in due time, redeem my reputation as a prophet and make an honest man out of me.

John Kelly is trying his very best to do it. He has been having a great deal of success out there in New Mexico. John, thank you for your efforts.

Even so, for all the depressing connotations of the overall drilling decline, there are encouraging aspects in the situation. Exploratory footage increased by 8% over last year, even in the face of a 12% decline in total drilling. The amount of exploratory footage accordingly rose to one-third of the total for all wells. I cannot find a year on record in which a greater proportion of total drilling effort was devoted to exploration. This is indeed worthy of note, for it indicates the willingness of your industry to devote a larger

portion of its limited drilling budget to the most risk-laden, but also the most critical, category of drilling activity.

Looking ahead -- with a bit more caution than I used last Febrary -- 1967 has every appearance of being another good year. The import levels have been established and the provisions relating to petrochemical feed stock imports have been, I sincerely hope, adequately explained and clarified. With these elements removed from the area of speculation, producers and refiners can relate their operating plans to anticipated demand in their market areas.

This is the sixth straight year that I have been in some degree involved with setting import levels, worrying about them, losing sleep over them, at a time when everybody else was losing sleep going to egg-nog parties. The weeks before Christmas customarily are times for renewing old friendships -- but for those of us involved with the import program those weeks provide an opportunity to renew our acquaintanceship with old problems, plus a few new headaches.

There is something about being involved in an oil import program, that reminds me of the New Yorker who went hunting down in the North Carolina swamp country. He wasn't much of an outdoors man, he began to worry about the number of water moccasins and rattlesnakes and copperheads across his path. So he said to his guide, "Say, what about all of these snakes around here? They bother me." And the guide reminded

him, he said, "Well, if one bites you, you just pull out your knife and slash the wound and get someone to suck the poison out and you will be all right. Take a drink and go about your business." He said, "What if one sneaks up and bites me through the hide?" He said, that is when you find out who your friends are."

(Laughter)

Well, as you probably know, running the oil import program is not the best way to win friends, especially coming in the season of the year when you have Santa Claus for competition.

I hope you will excuse the levity in such a serious meeting, gentlemen.

In all seriousness, gentlemen, I do believe we have a good program, as fair as we know how to make it. It is accomplishing the job it is intended to do, which is to preserve a market for domestic petroleum and in this way contribute toward a healthy and vigorous domestic oil industry needed for our national security and economic growth. And this is about all that can reasonably be expected of it.

Moreover, the continuously changing nature of the oil industry insures that any import control program that is truly responsive to its needs must change with it, and this is done whenever valid reasons exist. But unfortunately changes are always painful to some, no matter how small or inoccuous

they may be. Perhaps the most reliable sign of the program's success is that apparently everybody affected continues to be uniformly irritated by it.

Before I close, I want to add my own sincere thanks and deep appreciation to the Council, to Al Nickerson, and to Ted Nelson and his Subcommittee in particular, for the monumental job they have accomplished in putting together the EPGA publications that will serve as the indispensible basis for the organization, training, and, God forbid, the actual operations of EPGA in an emergency. It is truly a fantastic undertaking, and one that could never have been achieved except for the willingness of the Council and its membership to bear the burden and provide the talent needed to get the job done.

I wish to express my appreciation also for the splendid response of Dick Gonzalez and his committee to my request last July for a study on the factors affecting exploration, development and production. We deeply appreciate the prompt and positive way in which the committee addressed itself to a very involved subject within so short a period of time. The report produced will, I know, be of great assistance to the group in the Interior Department now studying the factors influencing the availability of our future oil and gas supplies.

We didn't plan it that way, but it happens that an extremely valuable contribution to the Interior survey will

be Dick McCurdy's Committee Report on the Effects of New Technology on Exploration and Production, done by Lloyd Elkins and his fine group who have been working for well over a year to produce one of the most comprehensive, thoroughly workmanlike documents I have seen on the subject. I understand that some of Lloyd's experts wound up on Dick Gonzalez's Committee also, so that we have a stereo rendition of the technological factors involved in exploration and production. The net effect is to add to the value of both of these excellent reports.

I am sure you will be interested in what Onnie Lattu will have to say later about the symposium on certain aspects of the survey of future petroleum supply that will be held here in Washington on March 9 and 10. I mention it here to stress that you are all invited, and to express the hope that many of you can attend. Because we expect the proceedings of the symposium to be an important input to the Survey, our target date for its completion is now the end of May.

Actually, there is hardly an opportune cutoff point in any investigative effort of this kind -- there is always so much more to consider than there is time available for it. Perhaps a more useful approach would be a continuing, periodic review, rather than an ad hoc effort aimed at documenting the conditions noted at a given point in time.

Again, gentlemen, for your time, your hard work, and your valuable thinking, I thank you. Through your efforts and

those of others here, the National Petroleum Council continues to add to its long record of contributions to our Nation and its government.

In this stress-filled period our Armed Forces in their defense of freedom are using more petroleum than ever at any time in our history save in the final years of World War II. The need for the closest kind of industry-government operation and understanding was seldom greater; the mechanism for achieving it, I am happy to say, was never better.

Governor, I want to than you personally for coming down here. Governor Johnson has been a friend of long standing. I am delighted that we will have an opportunity to work with you on the Interstate Oil Compact Commission, and we certainly appreciate that you are taking the time to come here and visit us and we hope that you can be with us many times in the future.

Thank you, very much, gentlemen.

(Applause)

CHAIRMAN DONNELL: As you know, we are privileged at these meetings to have present a number of representatives of the various Government Departments. I would like to ask Admiral Lattu to introduce some of them.

ADMIRAL LATTU: We have all the departments of the government here who are interested in oil and gas and energy. And we certainly want to welcome them to these meetings. I

will just mention a few of them.

To start with, we have two of the Federal Power Commissioners, the Honorable ~~Lloyd~~ Lawry O'Conner and Carl ~~Bagley~~ Bagge. Will you stand for a moment, please.

(Applause)

We have Mr. Harold ~~Linegard~~ Linguard of the Bureau of the Budget, who is working with us very closely on the statistics program.

(Applause)

We have all the services represented here today--the Army, theNavy, the Air Force, who have interest in petroleum. I won't mention them all, but we have one new gentleman I would like to introduce this morning.

Vice Admiral Joseph ~~Wild,~~ Lyle Director of Defense Supplies Agency. Joe, nice to see you here.

(Applause)

We have Joe Lerner representing the Director of the Office of Emergency Planning.

(Applause)

We have Andrew Stephenson from the Committee on Interstate and Foreign Commerce from the House. I wonder whether he stepped out? He was listed here.

House Select Committee on Small Business, Dr. Gould.

(Applause)

I think that is all at the moment. Welcome again,

gentlemen. Thank you.

CHAIRMAN DONNELL: I am sorry there were so many that you could not be all introduced but we greatly appreciate your attendance and interest in the work of the Council.

Our next speaker is Admiral Fowler W. Martin, Jr., who on November 7, 1966, was designated Commander of the Defense Fuel Supply Center. Prior to his assignment, Admiral Martin was Deputy Commander for Planning and Policy, Navy Supply Systems Command. He succeeded in his present position, Admiral Winston H. Schleef.

Admiral Martin is a native of Seattle, Washington, and a graduate of the University of Washington. He has served with the Navy since 1938.

We are very happy to welcome you, Admiral Martin.

ADMIRAL MARTIN: Chairman Donnell, Governor Johnson, Secretary Moore, Gentlemen. It is a real pleasure to be here today. When I first took my assignment I was briefed rather thoroughly by Admiral Lattu and others, regarding the activities of the National Petroleum Council.

I was seeking some guidance about how to make this speech and one chap I thought gave me some pretty good advice. He said it is kind of like drilling a well. He said, if you don't strik oil soon, stop boring.

(Laughter)

I plan to make just a few brief remarks this morning.

Partially because as you know, I am quite new at this job. Perhaps one of my qualifications is the fact that there is no conflict of interest involved, I didn't own any stock in any oil companies. Although some people look upon this as a lack of confidence on my part in the industry, I assure you that is not the case, it was just a lack of money.

One of the things I want to avoid when I am new at the job is using terms that are strange to me, getting mixed up. This sort of reminds me ofthe new service bride who had her first exposure to military medicine. Quite a few of you that are in the military, I think realize that the cure for almost anything is to take a couple of APC's and go to bed. So she was explaining to a friend of hers that she found out something that was good for a cold. She said, "Take two Pfc's and go to bed."

(Laughter)

My purpose this morning is to update you a little bit on some of the things that General Center mentioned to you at one of your recent meetings. Specifically, I would like to cover three topics, one is the support of our forces in Southeast Asia, the second is the international balance of payments program, and then finally, the realignment of the petroleum distribution in Europe.

First, Southeast Asia. As you know, the requirements there have been growing at a rapid rate. As a matter of fact,

for the second half of this current fiscal year, from January through July, our requirements are roughly double what they were in the same period last year. We are fortunate, however, in that we have these requirements about 90 percent covered at the moment, and don't anticipate any severe difficulties in obtaining complete coverage.

One thing that has changed rather dramatically in Southeast Asia, is the fact that whereas up until recently, we depended almost entirely upon commercial distribution system to meet our requirements. We have now had to supplement this intensively with government facilities ashore and with MSTS deliveries.

Dixon Howell mentioned to me yesterday that he thought our prior system was sort of a credit card supply system. It wasn't quite that way, but I think it was almost unprecedented in military history to have as much dependence upon a purely commercial system. And believe me, they did a good job but we have reached the point now where we have to supplement that.

We have been getting excellent support from MSTS in obtaining the necessary tankers for delivery to Southeast Asia.

Now, in regard to the international balance of payments, I think General Center mentioned to you that we were being asked to assist to a considerable degree, in the gold flow program because, of course, petroleum is one of the major

products that is bought overseas. This year it appears that we will be bringing back about 110 million in product that we in past years have bought overseas. Our success in this program depends really on three factors. One is to insure that it is logistically feasible, it won't do anything to disturb our support with the forces, particularly, in Southeast Asia.

Secondly, we have to insure that we have the necessary transportation available to us and finally, that there is an availability of product in the United States.

In the latter regard, we recently went out and made a solicitation for aviation gasoline. At the moment, we are about a million and a half to 1.8 million barrels short of meeting our requirement for the six months' period starting the first of April.

Now, I don't mean to imply that there is a shortage of aviation gasoline in the country, but I do want to emphasize the fact, that if we bring back these products we have to be assured of an adequate response. We will make another solicitation.

Finally, in regard to the situation in Europe, as you all know, the U. S. forces and our facilities have to be evacuated from France by the first of April. You also know that we have extensive petroleum facilities in France, pipelines and facilities. We are working hard to achieve a new distribution system. I am sure we will be successful. We

have a group coming over from the European Command to meet with us this week. We will be starting our meeting tomorrow.

I am sorry I can't give you more details on this, most of it is fairly highly classified at the moment, until the actual arrangements are completed.

Finally, I would like to reiterate that it is a real pleasure to be here. I have found in my short time as the Commander of the Defense Fuel Supply Center, that probably more than any other segment of the defense supply system, we are very dependent on cooperation and working closely with industry. And to date, I have certainly been pleased with the kind of cooperation that I have gotten. I know we are dependant to a great extent on the efforts of this Council and from you gentlemen. And I will look forward to having close associations and help from you in the future.

Thank you.

(Applause)

CHAIRMAN DONNELL: Thank you, Admiral Martin. We will look forward to hearing from you at our next meeting, and I am sure you can count on the continued cooperation from this industry and the Council.

We now have the report of the Agenda Committee, Mr. Follis, Chairman.

MR. FOLLIS: Mr. Chairman, Gentlemen, the Agenda Committee met yesterday morning, considered one proposal,

which came in the form of a letter, from the Honorable J. Cordell Moore, to Mr. Donnell. I would like to read the letter.

"Dear Mr. Donnell:

"The National Petroleum Council has conducted several studies of the industry's manpower needs in the past, the most recent being the 1963 report 'Petroleum and Gas Industries Manpower Requirements.' We believe that the latest report should be updated and at the same time expanded to cover other phases of the manpower picture which have not been treated in previous studies.

"The study should be extended to include Americans in foreign operations. Since World War II the large increase in the number of American petroleum companies engaged in foreign activities has continued to draw professional and skilled manpower from the U. S. manpower pool despite increased employment of indigenous manpower as required by local regulations. As a minimum this facet of the study should cover (1) the total number of U.S. nationals in assignments at home or abroad by broad geographical areas, and (2) a breakdown of this total by profession (such as geologists, engineers, lawyers, etc.) and by types of skilled crafts (such as drillers, refinery operators, maintenance crafts, etc.).

"We also feel that the manpower balance in the petroleum industry might be reviewed with considerable benefit

to all concerned. Our objective in this facet of the study is to elicit guidance for young people contemplating careers as engineers or scientists in the petroleum industry and to the educational institutions which must equip them for their chosen professions. This could be in the form of industry employment projections for these professions laid out in broad terms over several years. Inasmuch as the industry's capability to find and develop oil and gas resources in the future depends on its earth scientists and engineers, shortages in these long-lead-time skill categories have important implications for national security over the long term.

"The study should also include the inventory of and future requirement for skilled personnel, including drillers, refinery operators, maintenance crafts, and other specialized skills.

"The study should take into account long-term trends toward the use of automated data, the increasing efficiency of geophysical and geological methods, greater emphasis on increased recovery. The effect of long-term changes which are occurring in the industry should be related to the outlook for future needs for scientific and engineering skills.

"Therefore, it is requested that the National Petroleum Council update the 1963 'Report on Petroleum and Gas Industries Manpower Requirements,' and expand it to cover Americans in foreign operations here and abroad and future

requirements for earth scientists and engineers."

Signed, J. Cordell Moore, Assistant Secretary of the Interior.

Gentlemen, the Agenda Committee recommends approval of this assignment and I so move.

(Motion seconded)

CHAIRMAN DONNELL: You have heard the report of the Agenda Committee and the motion to approve the study that has been requested by Secretary Moore. As many as favor, please say "Aye."

(Chorus of "Ayes.")

CHAIRMAN DONNELL: Opposed, "No."

(No response)

CHAIRMAN DONNELL: Thank you, Mr. Follis.

We now come to the Final or Progress Reports of the Committees which are considering the studies that have been previously approved. The first is, I believe, a final report from the Committee on Emergency Preparedness for the Petroleum Industry--Mr. Nickerson, Chairman.

MR. NICKERSON: Mr. Chairman, Gentlemen, nearly four years ago, in the late Spring of 1963, at the request of the Secretary of the Interior, the then Chairman of the National Petroleum Council, Mr. R. G. Follis, appointed the Committee on Emergency Preparedness. This committee was charged with the responsibility first to prepare a prototype plan for emergency

preparedness and civil defense for use by the petroleum and natural gas industry, for company planning. And, second, to review and analyze the adequacy of Government planning in these same areas.

Two subcommittees were formed with W. E. Ingram and C. F. Scott, respectively, as chairmen, to carry on this work. Their reports were subsequently submitted and accepted by the Council and by the Department of the Interior, in July of 1964.

The Scott report contained 31 recommendations, all of which were accepted by the Secretary of the Interior. Approximately one year later, in 1965, the Government requested the Council to reactivate the subcommittee on manuals, that is, the former Scott Subcommittee, now chaired by Ted Nelson, and asked this committee to develop a general information handbook and 20 operating manuals describing in detail how the petroleum and natural gas industries would operate in the state of national emergency.

This tremendous work hasbeen completed. And I will ask Ted Nelson to make his final report to you.

MR. NELSON: Thank you, Mr. Nickerson. Members and guests of the National Petroleum Council, this is the third and final, repeat, final, report of the NPC Subcommittee for the preparation of EPGA operating manuals. The two earlier reports were progress reports that were made in March and July of 1966.

As Mr. Nickerson said, this subcommittee was formed 18 months ago, to carry out detailed studies related to the organization and operation of the Emergency Petroleum and Gas Administration. Specifically, the committee was asked to do three things; first, to prepare a general information handbook about EPGA that could be distributed widely to the petroleum and other industries and to the public, second, to review and edit two EPGA instructional manuals that were to be prepared by the Office of Oil and Gas. One of these was to cover the organizational structure of EPGA, and the other was to be an administration manual.

And third, to prepare detailed operating manuals for individual line divisions and staff officers of EPGA.

The first assignment, the one relating to the preparation of the general information handbook about EPGA, was completed in January of 1966, with the publication of the booklet "What is the Emergency Petroleum and Gas Administration," which I have in my hand here and which you have all received.

This booklet has been well received by industry and Government, and the Office of Civil Defense has printed 75,000 copies of it for widespread distribution. The National Petroleum Council and the Office of Oil and Gas are participating in the distribution of the booklet to make certain it reaches all important points in the oil and gas industry.

The second assignment, the one relating to the

review and editing of EPGA organizational and administration manual was completed last fall. These manuals will be issued soon by the Office of Oil and Gas, for use as necessary by EPGA executive reservists in training exercises.

The third assignment, the one relating to the preparation of detailed operating manuals for the basic organizational units of EPGA, has been by far the most important aspect of the subcommittee work program. Specifically, this involved the preparation of operating manuals for the following:

In Domestic Petroleum Operations; the Division of Production and Natural Gas Processing, the Refining and Manufacturing Division, the Supply and Transportation Division, the Distribution and Marketing Division.

For Domestic Gas Operations; the Gas Transmission Division and the Gas Distribution Division.

For Foreign Petroleum Operations; the Production Division, the Refining Division, and the Supply and Transportation Division.

For the Support Services Operations; the Materiels Division, the Manpower Division, the Communications Division, and the Facility Security Division.

And for the EPGA Staff Officers; the Office of Program Coordination of Information, of Administrative Services, of General Counsel, of Finance Counselor, of the Secretariat,

and of Statistical Services.

I would like to mention particularly at this point that the Gas Transmission and Distribution Manuals were prepared in conjunction with the Emergency Advisory Committee for Natural Gas and approved by this group in November of 1966.

I would also like to point out that the original subcommittee assignment included the preparation of operating manuals for both the national and the regional organization units. However, when the subcommittee got into the detailed preparation of the manuals, it became apparent that there would be a considerable duplication of information in the national and regional manuals. We decided, therefore, to prepare only one set of manuals, based primarily on the duties of the National EPGA organization, but with sufficient reference to regional considdrations that the manuals could be used for both organizations.

Another important subcommittee decision in the course of this study was to consolidate several operating manuals into a single volume whenever it was logical and feasible to do so. This has resulted in a very considerable reduction in the number of volumes in publication. Specifically, a reduction from as many as 20, if each operating manual were to be published separately, to the final number of 10, which represents a maximum amount of consolidation that the committee felt was desirable.

All ten operating manual volumes have been completed and we are proud to have them here on display for you, in the center of the front desk, today.

Six have been approved by the entire NPC and the remaining four are now in the process of being so approved. Approval of each volume has been obtained by mail as soon as it was published. This procedure was agreed to at the meetings of all concerned last July. Each member has received or will soon receive a complete set of these manuals and has the opportunity to order additional copies of any of the manuals at the very modest cost of about five dollars per volume.

The Government is also being furnished sufficient copies of all of the manuals for distribution to key EPGA personnel and for consolidation in loose-leaf binders for special purposes.

For the manual covers, the subcommittee selected a vinyl plastic that is durable and economical. The color of this plastic was chosen to match the so-called EPGA red, that the ALG has been using to designate all of the EPGA documents. The physical form of the manual has been modeled after the resource engineering report used widely in the petroleum industry. This form places all of the text on one side and the charts, tables, and grafts and exhibits on the other side. Experience has proved this is a very complete report form for detailed study use.

Each of these operating manual volumes has a common introductory section. This section provides for background information for understanding and use of the detailed operating procedures that are outlined in other sections of the manuals.

For example, this section discusses the role of the Office of Defense Resources and identifies the Federal claimant agencies that will represent various oil and gas consuming groups in contact with EPGA. It also discusses the three basic time phases--survival, recovery, and central programming, that have been developed as a framework for oil emergency planning and operations.

And perhaps most important of all, it describes finally how general supply program matching demand against capability is put together, where the responsibility lies for various aspects of the planning process and what the time frames are for the short intermedial and long-range supply programs and what these programs might look like.

Since one of the principal objectives of EPGA is planning to assure continuity of adequate supply to meet essential requirements, we have provided for strong emphasis on the mechanics of the planning process in each of the operating manual volumes. Section 2 in each of the manuals is relatively brief and covers the functions, relationships, and duties of the assistant administrator in charge of the operations involved. There is also included a brief

description of the functions of all organizational units that are under the jurisdiction of the supervisor involved.

Section 3 is the most important part of each operating manual. It covers the functions, relationships, and duties and procedures for each organizational unit of the division involved. This starts with the director and his office and takes in turn each branch of each division, each section of each branch and each unit of each section.

Specific forms are suggested for a number of reporting and soliciting activities that will be involved such as reporting attack damage to an area, making application to construct petroleum projects, reporting inventories of unused materials, and making application for needed material and supplies.

Also included are exhibits which show how and where these statistical data are obtained, how project applications flow through EPGA and how responsibility and authority are distributed for each area of EPGA activity concerned with the operating function involved.

In sum, these manuals endeavor to describe the what, who, where, when and why, and more importantly, the how of each important operation involved in providing oil and gas supplies to meet essential military and civilian requirements in a national emergency as best we have been able to visualize such a situation at the present time. The functions, relationships, and duties and procedures have been written in quite a

bit of detail so as to be of maximum usefulness for the executive reservists who are in those units or who deal directly with those units.

Admittedly, the circumstances of actual emergency are very difficult, if not impossible, to predict. But the Subcommittee philosophy has been that EPGA would benefit very greatly from an available, detailed set of operating instructions, regardless of how much revision may be made later in these instructions.

The Subcommittee felt further that detailed operating manuals of this type would be very useful in training exercises for executive reservists and that such training exercises would be a valuable source of suggestions for improvements of manuals.

In other words, the Subcommittee has viewed the preparation of EPGA operating manuals as a continuing process from the time that NPC presents these basic operating manuals to the Government at the present time and until they are actually brought into use in an emergency.

For this reason, the manuals have been prepared so that it will be relatively easy to remove outdated sheets and insert new ones as changes are approved. The Office of Oil and Gas will have the responsibility for making all future revisions and distributing them to the executive reservists. The NPC will have the responsibility for distributing these revisions to its members.

Throughout the writing of these operating manuals, the Subcommittee has tried to keep in mind that the primary function of EPGA is to assist and coordinate the efforts of industry in achieving certain national goals and that there should be an absolute minimum of direction of industry by EPGA. In order to facilitate the functioning of EPGA in such a manner, the manuals provide the framework for a series of industry advisory committees at the national regional, and local levels.

Several side items that came up during the preparation of the operating manuals deserve special mention. In each case the Office of Oil and Gas has either taken action on these items or will be taking action along the lines represented by the Subcommittee as Admiral Lattu mentioned earlier.

The first such item is that new definitions for primary and secondary inventories and facilities as developed by the Subcommittee should be formally adopted and written into the national planning at the earliest practical date.

Second, cross delegation of regional responsibility in the manufacturing, transportation, and marketing functions, should be carried out following the same principles used in the Subcommittee's cost delegation and regional producing responsibilities.

Third, the delegation which gives Interior authority over production and distribution of certain industrial

chemicals, such as cracking catalysts, et cetera, that are used principally by the petroleum industry, should be broadened to adequately cover present industry practice.

And fourth, the Office of Oil and Gas should exert all possible influence to see that industry statistics are gathered on a statewide basis and consolidated and reported on an EPGA regional basis rather than by PAD distribution whenever it is possible and practical to do so.

In conclusion, the Subcommittee wishes to make two formal recommendations with respect to the operating manuals that have been developed in the course of this assignment.

First, it is recommended that these operating manuals prepared by the NPC, which have already had the review of Interior officials, prior to publication by the Council, be adopted by the Secretary of the Interior as the official EPGA Manuals for use by executive reservists in the operation of EPGA, and, second, it is recommended that these manuals be tested regularly by executive reservists in EPGA training exercises with the objective of continually improving the content and the utility of these manuals.

Finally, I would like to say this has been a sizeable and difficult assignment. The Subcommittee completes it with a feeling of considerable accomplishments and hopes that EPGA will benefit considerably from the effort.

The Subcommittee now requests that this final report

of the work accomplished be accepted and that the Subcommittee be discharged. And I will turn this part of the meeting back to Mr. Nickerson.

(Applause)

MR. NICKERSON: I would like to present Mr. Nelson's recommendation for a motion, but before doing so, I do want to thank the Subcommittee and its chairman for this large and difficult assignment. Particularly, I want to thank the editorial task force headed by Jim ~~Winfree~~ J. W. Winfrey, who did such an outstanding job in organizing the presentations and manuals and putting them all in uniform style.

I want to especially thank the companies involved for the willingness in giving so many outstanding men to this effort, and in particular, to give them their freedom to spend as much time as was necessary on this assignment in order to complete it.

And, of course, I want to thank the main committee, the one of Emergency Preparedness, for its continued interest, for the review of this massive amount of material, and for the large number of very helpful suggestions that we have received from them.

And, of course, I want to thank Vince Brown, and the staff of the National Petroleum Council, and those who handled the mechanics of binding and printing these manuals.

Now, to repeat Ted's recommendations in the form of

a motion, that these operating manuals be adopted by the Secretary of the Interior as the official EPGA manuals for use of executive reservists in EPGA, that they be tested regularly by executive reservists in training exercises with the objective of improving their content and their utility, and finally, that this final report of the work be officially accepted and that the committee and the subcommittee be discharged.

CHAIRMAN DONNELL: This is truly an impressive task that has been accomplished. The volumes before you speak for themselves. This will not only be of value to the industry and the Interior, but hopefully will set a pattern and a guide for other industries to follow in making similar preparations.

As you might guess, the publication of these manuals has been a sizeable item in the budget of this current year. But it has been very worthwhile.

You heard the motion to accept the recommendations and to discharge the committee. As many as favor, please say "Aye."

(Chorus of "Ayes.")

CHAIRMAN DONNELL: Opposed, "No."

(No response)

CHAIRMAN DONNELL: On behalf of the Council, I want to thank Mr. Nickerson, Mr. Nelson, and all of the others who have been involved for such a long time in this monumental task.

The next report is that of the Committee on Factors Affecting U. S. Exploration, Development and Production, 1945 to 1965. -- Richard Gonzalez, Chairman.

MR. GONZALEZ: Mr. Chairman, Secretary Moore, Members and Guests of the National Petroleum Council, I am pleased to present the summary of the report that was requested and authorized at the meeting of the Council last July.

The target date for this report was January 1, 1967, in order that it might be used by the Office of Oil and Gas in its studies. At a meeting on January 10, the committee completed its report, this was later sent to you on January 20. So you have had some opportunity to review it.

There were some typographical errors that we noted and the copy that was handed to you this morning has corrections of those errors.

In our studies, we found as those of you who have followed the operations of the industry for the past 20 years would appreciate, that there were a number of diverse factors affecting operations of the U. S. industry in the period under review. These we have classified as Geological Factors, Technological Factors, Economic Factors, and Policy Factors. I will touch on these very briefly.

First, as to the Geological Factors.

Point 1. Decrease in geological opportunities in well explored areas due to the fact that the number of wells drilled

in the eight states which accounted for most of the drilling in the postwar period was almost as great in the 20-year period 1946-1965 as their total prior completions from 1859 through 1945.

2. A change in the nature of geological opportunity, with areas of deep, expensive wells, such as the Delaware Basin of West Texas, Alaska, and the Continental Shelf, becoming more attractive relative to areas with shallow, and less expensive wells, as indicated by the rise in proportion of drilling expenditures on wells more than 10,000 feet deep from 21.2 per cent in 1953 to 36.4 per cent in 1963.

I would like to call your attention in this connection to a table in the report of the number of wells of different depths and their costs as shown by the joint association survey for 1963. In the category up to five thousand feet deep, this was 28,524 wells. The average depth of these wells was 2503 feet. The average cost of these wells was $21,444. The total expenditures were $611 million.

Then if we turn to the wells that were 10,000 feet deep and greater, we had only 2,987 such wells, not much more than ten percent of the number under five thousand. But the average depth of these wells was 12,133 feet. Not quite five times as deep as the others. The average cost was $281,000, 13 times the cost of the shallow wells. And the total expenditures for these 2,987 wells was $839 million, or substantially

more than the cost of the 28,524 wells under five thousand feet deep.

This is one of the problems that we have to keep in mind when we talk about number of wells drilled, because a well is a well but it is not necessarily a well.

Shifting now to the Technological Factors.

Point 3. Techniques for stimulating production in new and old wells by fracturing made available a one-time crop of shallow oil by encouraging a sharp rise in drilling to shallow formations in North Central Texas, Arkansas, Illinois and Oklahoma between 1950 and 1957.

Some of that continued beyond but the amount of it tapered off very sharply.

Point 4. Development of additional supplies by fluid injection added 2,000,000 barrels daily to crude oil production between 1946 and 1965, thereby supplying a substantial part of the market and thereby having its effect on the number of new wells that had to be drilled in order to keep pace.

Turning now from the Technological Factors to the Economic Factors.

Point 5. The change in rate of growth in crude oil demand from more than 5 per cent annually from 1945 to 1955 to less than 3 per cent annually in 1955-1965 contributed to the initial rise and later decline in the rate of drilling, and the later decline. In fact, the change was so marked that

the rate of growth and demand in the latter ten years, was practically half of what it was in the first postwar decade.

Point 6. The rapid growth in sales of natural gas captured markets that would otherwise have been served by oil, thereby affecting the growth in oil demand and the number of wells drilled because gas wells are drilled on much wider spacing than oil wells.

As you know, many gas wells are drilled on 640 acre spacing which would be perhaps 16 times as much acres as most oil well developments.

Point 7. The growth in unused crude oil productive capacity caused heavy restrictions on the output of prorated wells in the period 1955-1965 which reduced incentives to make new investments.

Point 8. Greater competition from foreign petroleum resulted in a rise in net imports from 881,000 barrels daily in 1955 to 2,281,000 in 1965, and contributed to the much slower rate of growth in domestic crude oil output in the period 1955-1965.

Point 9. The rise in prices of crude oil and natural gas at a faster rate than for other commodities until 1957, and the subsequent decline in crude oil prices both actually and relative to other commodities worked first to stimulate and later to discourage exploration and drilling.

Point 10. Changing conditions of demand, price,

and profit outlook combined to encourage a rise in the relation of expenditures for exploration and development to gross revenue from 50 per cent in 1948 up to about 65 per cent in 1955-1956 and back down to 50 per cent by 1961-1963, which is the last period for which we have joint association survey figures.

Point 11. Favorable opportunities to invest encouraged smaller operators to step up drilling sharply until about 1956, often by the use of borrowed funds and outside equity capital, whereas the less favorable outlook after 1957 led to a large number of mergers and sellouts of companies and properties, with the result that the position of independent operators as a group in U. S. petroleum producing operations declined.

Turn now to the Policy Factors.

Point 12. Wider spacing of wells was a factor tending to reduce the number of wells drilled, particularly after 1955.

We don't have quantitative statistics on this, but the studies of the Interstate Oil Compact Commission show a distinct shift in the number of spacing orders, towards wider spacing about this time.

Point 13. The leasing of Federal lands, particularly the Continental Shelf, attracted large sums into expensive ventures and may have affected activity in other areas adversely.

Point 14. Federal regulation of gas prices which

has reduced realization by producers on some sales and has created an additional risk because even approved prices can be cut subsequently, affected profit prospects for drilling of new gas wells.

Point 15. Federal limitations on oil imports have held non-residual imports into Districts I-IV to a relatively stable relation with domestic production in that area since 1959, thereby limiting the extent of economic pressures of foreign oil on domestic markets.

The way in which the preceding factors worked throughout the postwar period explains the sharp rise in drilling up to 1956 and the subsequent decline in drilling and the leveling off in rate of development of new resources.

In the first postwar decade, the growth in demand, rising prices for oil and gas, and improved fracturing technology encouraged a rapid development of new resources which added materially to proved reserves and overshot the requirements of the market. In the period 1955-1965, a slower growth in demand, less favorable price behavior and outlook, and the application of technology to expand productive capacity faster than reserves combined to cause development of new resources to turn down for crude oil and to level off for natural gas. As a result, the rate of growth in proved reserves was less than in demand for oil and gas in the five-year period 1961-1965.

In the twenty-year period 1946-1965, production of oil and gas and the development of new resources in the United States exceeded corresponding figures for the entire preceding history of eighty-six years through 1945. The accomplishments of the period were remarkable, particularly because at the end of World War II there were some people who thought that the United States was running out of oil and could not hope to expand output much above the records already attained.

I think it is interesting that if we go back in history, in 1926, we were also worried about running out of oil. So we were worried in 1926 and 1946, and some people perhaps in 1966, and possibly in 1986, you may have another committee studying Factors Affecting Exploration, Development and Production.

At the end of 1965, the domestic petroleum industry was in position to meet all demands on it and to expand output by substantial amounts, as already demonstrated by developments since then. Also, new development was still offsetting production and adding slightly to known reserves. The substantial outlays being made for exploration and development by many companies and operators indicate confidence that additional resources remain to be found and brought into production. The rate at which this happens will depend on the relation of rewards to risks in the future under conditions of keen competition among the principal fuels, which have

already been touched on in the remarks earlier by Secretary Udall.

I would like to express my thanks to all the members of the committee, for their contribution to this report, particularly to Allen Calvert, Jim Finley, John Hammond, and their staffs, who really made this report possible.

I submit this report and move that it be approved, Mr. Chairman.

(Applause)

CHAIRMAN DONNELL: Is there a second to the motion to approve?

(Motion seconded)

CHAIRMAN DONNELL: Are there questions or comments about this report?

(No response)

CHAIRMAN DONNELL: As many as favor the adoption will please say "Aye."

(Chorus of "Ayes.")

CHAIRMAN DONNELL: Oppose "No."

(No response)

CHAIRMAN DONNELL: I would like to add on behalf of the Council, our thanks to you, Dick, and to the members of your committee, and subcommittee, who in quite a short time, has produced this very fine report. It was only at the meeting last summer that the request was made, and I believe

it was September before the committee really started to function, and to have a final report in our hands a week before the Council meeting, I think is an indication of the fine job that Dick and his associates have done.

Our next report is that of the Committee on Effects of New Technology on the Petroleum Industry. Mr. McCurdy.

MR. McCURDY: Mr. Chairman, Secretary Moore, Gentlemen, I can make a brief report here to you on our progress.

The first part of our study, that having to do with exploration, production, and bulk transportation, is essentially complete. And it had been hoped that we could lay it before this meeting. However, there are a few points that are still under discussion amongs the committee members and so we have had to defer that until next time.

The second part of our study, having to do with refining and final distribution, is in draft, and probably will come along at the same time.

Thank you, very much.

(Applause)

CHAIRMAN DONNELL: As you heard Secretary Moore say, the work done by this committee was helpful in preparing the report which we have just adopted.

The next committee is that of Committee on Oil and Gas Transportation Facilities. Mr. Swearingen.

MR. SWEARINGEN: Mr. Chairman, Mr. Moore, and

Gentlemen. I believe my report is going to be even briefer than that of Mr. McCurdy.

(Laughter)

Our committee was given the assignment on July 19, to make a study to determine the current capacity of petroleum and gas transportation facilities. I was appointed chairman of the committee in October, and Mr. Lattu acts as the co-chairman of this committee.

The subcommittees have been appointed, the work has commenced, and we will make a report to you in due course.

(Applause)

CHAIRMAN DONNELL: Thank you, Mr. Swearingen.

We will now have the report of the Secretary-Treasurer, Mr. Brown.

MR. BROWN: At the beginning of our fiscal year, July 1, 1966, we had a cash balance of $9,396, in the general operating account. During the six-month period ending December 31, 1966, our receipts totaled $152,154. $151,500 of this came from contributions by you members of the Council. The remaining $629 were receipts for interest on savings and sales of NPC publications to date.

In the same six-month period, July 1 to December 31, a total of $115,000 was expended for our operations, which in addition to the usual staff functions involved expenditures in connection with four special committee assignments, and the

special authorization of publication of the EPGA manuals.

The balance in the general operating fund at the end of December stood at $47,656. The value of certificates of deposit in the contingency reserve fund remains unchanged since my last report to you, of $50,000.

CHAIRMAN DONNELL: Thank you.

Are there any questions about this report?

(No response)

Normally, the Council holds two meetings a year, one shortly after its appointment in July, and one during the winter. Therefore, the next meeting of the Council will likely be in July, and it will be necessary at that time to elect officers and members of the two standing committees.

In anticipation of that, I would like to appoint now a nominating committee, which could be prepared at the next meeting of the Council, to make recommendations for these offices.

Mr. J. Ed Warren, Chairman; Mr. F. Allen Calvert, Mr. W. W. Keeler, Mr. J. Howard Marshall, Mr. Charles H. Murphy, Jr., Mr. Ed Parkes, Mr. Foree, Mr. Shumway, Mr. Charles E. Spahr, Mr. H. A. True, Jr., and Mr. M. A. Wright.

Admiral Lattu, is there any other business that you want to refer to this Council?

ADMIRAL LATTU: No.

CHAIRMAN DONNELL: As you know, there are members of

the press waiting outside, and they will be here following the adjournment of the meeting. And I would like to ask the gentlemen that made reports, participated in the meeting, to stay here and be prepared to answer questions.

Is there any member of the Council that has any business to come before the meeting?

(No response)

If not, I wish to thank you for the fine attendance, and the fact that essentially everybody stayed to the conclusion of the meeting. We hope that in the future, we will be able to adhere to about a twelve o'clock closing.

The meeting is adjourned.

(Applause)

Whereupon, at 11:50 o'clock a.m., the council meeting was adjourned.)