OFFICIAL PUBLICATION OF THE
ASSOCIATION OF PROFESSIONAL
GEOLOGICAL SCIENTISTS

PROFESSIONAL
GEOLOGICAL SCIENTIST

VOLUME 15, No. 4
December, 1978

16th Annual Meeting September 20, 21, 22, 1979
Lafayette, Louisiana

APGS ANNUAL MEETING 1978

As in 1977, the December issue of the Professional Geological Scientist is dedicated mostly to the proceedings of the Annual Meeting of the APGS. The meeting was held at the Sheraton Old Town Inn, Albuquerque, New Mexico, November 30 - December 2, 1978. The New Mexico Section is to be congratulated for getting together a timely, meaningful and provocative meeting for the 100 plus members attending.

Responsible directly for the mechanics of the meeting were: John W. Shomaker, General Chairman; Clay T. Smith, Publicity; John W. Shomaker, Ben Donegan and William R. Speer, Program; W. C. Riese, Registration; and Vincent C. Kelley, Field Trip.

Herein, the proceedings of the meeting are arranged essentially in the order in which they occurred with the business part of the meeting first, followed by a few customary headings, and then the papers of the technical sessions grouped together at the end.

Advisory Board Meeting

The meeting of the Advisory Board was held on November 30th. Chairman Edward E. Rue called the meeting to order at 8:30 A.M. Official Delegates for 1978 representing seventeen Sections were present, as well as Official Delegates for 1979 representing thirteen Sections.

The first order of business was the election of four representatives from the 1979 Advisory Board to the APGS Executive Committee for 1979. The Delegates elected were: Edward C. Dapples, Illinois; William L. Fisher, Texas; Joseph F. Fritz, Mississippi; and John D. Pruitt, Colorado.

Chairman Rue reported the tabulated results of the Plans and Programs Committee September 1978 questionnaire sent to all members of the Association. He noted that 900 of the 1725 members answering the questionnaire preferred the name American Institute of Professional Geologists for the Association. Of those members answering, 64.1% accepted the suggested definition of geology, and 59.9% favored registration.

It was moved and seconded that the Advisory board recommend to the Executive Committee that an amendment to the Constitution to change the name of the Association to American Institute of Professional Geologists be presented to the membership for vote. The motion carried unanimously.

There was considerable discussion of the matter of legal registration, with many Sections reporting the status of current registration laws or the status of proposed laws. Chairman Rue noted that he intends to appoint a Committee on Registration to prepare and circulate a more definitive questionnaire to the membership. Alabama and Tennessee reported serious work being done in those two States on registration bills.

Wyoming reported that the Bureau of Land Management has instituted new regulations requiring surface inspections of all new drilling and mining sites by an archeologist approved by the Smithsonian Institute. The new regulations are causing serious delays and cost increases because of a lack of approved persons to perform the inspections.

It was moved and seconded that the Advisory Board recommend to the Executive Committee that the matter of archeological inspections be referred to the Legislative and Regulatory Committee for investigation and possible action. The motion carried.

It was moved and seconded that the Advisory Board recommend to the Executive Committee the appointment of a committee to review existing State and National rules and regulations for the purpose of having geological scientists declared qualified to perform certain required work. The motion carried.

It was moved and seconded that the Advisory Board go on record as commending the Legislative and Regulatory Committee for outstanding service to APGS and to the profession. The motion carried unanimously.

It was moved and seconded that the Advisory Board recommend to the Executive Committee that the names of applicants for membership and the names of approved new members be published no less often than bimonthly. The motion carried.

Chairman Rue adjourned the meeting at 12:30 P.M., November 30, 1978.

EXECUTIVE COMMITTEE MEETING

The meeting of the Executive Committee was held on November 30th. President Grover E. Murray called the meeting to order at 1:45 P.M., and declared a quorum to be present. The Executive Committee took the following actions:

Approved the Minutes of the Executive Committee Meeting of August 11, 1978 as circulated.

Accepted the report and recommendations of the Hearing Board and voted to expel Robert W. McDowell, Jr., from membership in the Association. In view of this action, it was noted that all members of the Association should review ARTICLE III., Section 4, Paragraph 5 of the Constitution.

Instructed the Executive Director to obtain a number of bids for the printing of the 1979 Membership Directory.

Accepted as official the election of James R. Dunn, President elect; Frederick L. Stead, Vice-President;
and John S. Fryberger, Secretary-Treasurer. Russell R. Dutsch was introduced as the member President elect Rue will appoint as Editor for 1978. Referred to the 1979 Executive Committee any decision on a "sunset rule" for committees. Approved the revised bylaws of the Colorado Section.

Instructed President Murray to advise President Robert Heller of AGI that APGS supports the concept of a Congressional Science Fellow, but that no decision is possible at this time regarding the type or amount of support to come from APGS. Established a policy that no member of a screening board may serve as a sponsor for an applicant for membership. In the event that a member of a screening board has sponsored an applicant prior to being appointed to the screening board, that individual shall be disqualified from consideration of the application of the sponsored applicant.

Resolved to conduct an election of the membership on a proposed constitutional amendment to change the name of the Association to "American Institute of Professional Geologists". Referred the problem of archeological surface inspections to the Legislative and Regulatory Committee, and recommended that the 1979 Executive Committee appoint a committee to review existing national and local rules and regulations, in accordance with the recommendations made by the Advisory Board.

Accepted the resignation of Brunton from the position of Executive Director, and appointed Mankin, Takken, Stead and Fryberger a committee to prepare a chart of the duties and responsibilities of the position as an aid in securing a replacement.

Approved the appointment of A. J. Gaudin as General Chairman of the 1979 Annual Meeting to be held in Lafayette, Louisiana on September 20, 21, 22, 1979. Approved the sitting of the 1980 Annual Meeting in Mobile, Alabama.

Accepted and approved year-end reports submitted by the various standing and ad hoc committees of the Association.

President Murray adjourned the meeting at 6:15 P.M., November 30, 1978.

ANNUAL BUSINESS MEETING

The 1978 Annual Business Meeting of APGS was held on December 2, 1978. President Murray called the meeting to order at 8:45 A.M., and discussed the activities of the Association during the past year. It was moved and seconded that the Bylaws of the Association be amended as follows:

Amend ARTICLE I. Membership, Section 3-Qualifications, Paragraph c: Personal Integrity, subparagraph 1) to read as follows:

"A sustained record of adherence to highest professional and ethical standards attested by at least five (5) professional geological scientists, at least three (3) of whom are members of the Association, having present knowledge of the applicant's qualifications, integrity and conduct, and;".

The motion carried unanimously.

President Murray noted that the Executive Committee had resolved to present a constitutional amendment to the membership for vote that would change the name of the Association to "American Institute of Professional Geologists". It was moved and seconded that the members at this Annual Meeting endorse the proposed amendment to the Constitution. The motion carried with one nay.

Secretary-Treasurer Takken reported that the Association is financially solvent, and that the year 1978 will end with a balanced budget. It was moved and seconded that the Association adopt the following resolution:

RESOLVED THAT, in order to achieve the goal of the President of the United States to increase coal production by 1980, this Association urge President Carter and the Congress to direct appropriate agencies of the Federal government to take all actions necessary to ensure the swift development of the nation's coal reserves, and specifically to remove or modify those regulations that unreasonably inhibit such development. The Association of Professional Geological Scientists offer their services to achieve these aims at the earliest possible date.

The motion carried unanimously.

The foregoing resolution will be sent to President Carter over the signatures of President Murray and President-elect Rue.

President Murray expressed his sincere appreciation for the services rendered by other members of the Executive Committee, and those members who served unselfishly on the standing and ad hoc committees of the Association. He noted that the activities of the Legal Affairs Committee have heretofore been limited to the State of Colorado, but have now been expanded to all States.


REPORTS TO THE EXECUTIVE COMMITTEE

(The report of the Legal Affairs Committee is printed below in full. The Committee is composed of Frederick L. Stead, Chairman, Kenneth F. Cummings, Al Saterdal, and Arthur F. Brunton).

The founders of the AIPG, who met in Golden, Colorado in November, 1963, visualized an organization that would do what none of the then existing scientific organizations were able to do - take whatever professional, political, or legal actions were deemed necessary to protect the public welfare and the profession. It was the stated policy of this new organization that it would not indulge in any scientific activity whatsoever. While the organization is tax exempt under Section 501(c)(6) of the Internal Revenue Code, it has also been the stated policy of all Executive Committees that the tax exempt status of this organization would be willingly forfeited should the tax status conflict in any way with the professional, political, or legal activities of this organization.

The past few years have seen numerous laws, rules and regulations formulated by various Federal and State agencies ostensibly to protect the environment - which, in certain instances, are detrimental to both the public welfare and to the profession. The geological scientific community, being conservation minded, initially lauded and supported the early conservation and environmental laws and regulations. However, the gross inequities and capricious nature of the more recent environmental rules and regulations make it difficult, if not impossible, for our profession to condone these actions and still maintain our commitment to the public welfare.

Recent Public Land withdrawals have made it almost impossible for geological scientists to explore for and/or develop those energy and mineral resources located on Public Lands. The U.S. Forest Service and the Bureau of Land Management are currently con-
ducting investigations to determine what additional withdrawals of Public Lands should yet be made - thus removing more lands from future exploration. Pending the actual withdrawal of these additional lands, Federal agencies have promulgated many arbitrary rules and regulations (the legality of which are in question) that are denying public access for purposes of exploration. According to existing law, these agencies must determine that an area has no mineral potential before it can be withdrawn from entry. It is a fact, however, that these agencies have neither the manpower nor the integrity to conduct impartial mineral resource potential surveys. It would seem that any individual geologist or company willing to expend substantial amounts of time and money to explore any given area would be sufficient evidence that that area held some mineral potential. Contrary to this basic concept of mineral exploration, many of our members (or corporations employing our members) have been denied access to Public Lands pending Federal agency action (including the investigation of mining claims) during this period of increased demand for the development of our domestic energy and mineral resources, these arbitrary actions are deemed detrimental to the future public welfare.

The energy and mineral resources underlying the Public Lands of our Western States will become the cornerstone of this country's future energy supply. These resources will be developed. The question is when? Will it follow orderly patterns, carefully planned with proper environmental safeguards? Or will it be spontaneously developed at some future date, prompted by some political-economic crisis - bringing serious injury and irreparable damage to our western environment? The winter of 1977 was the coldest winter of modern times. Temperatures in the East averaged 30 degrees colder than normal. There were insufficient supplies of natural gas to heat homes, schools, or public buildings or to keep industry moving. Congress passed emergency legislation and the FPC took the necessary actions. Some of these actions represented a considerable deviation from accepted procedures and would not be tolerated under normal conditions. However, the FPC knew that no group would dare to risk the public attacks if their acts were challenged. On one hand, it is nice to know that the bureaucracy can meet crises when necessary. On the other hand, it is frightening because it aptly demonstrates the ability of your government, in a time of crisis, to rationalize any action they want to take. To most politicians, the end justifies the means. There is a very real fear among Westerners that when energy economics start strangeling the Eastern States - their political leadership will come after the West's Resources in a panic. In the minds of affected jobholders, no price will be too great (including the destruction of the Western ecology) to pay for the necessary energy resources to keep the Eastern homes heated and the jobs secure.

In January, 1978, the Executive Committee approved the formation of the APGS Legal Action Committee. The purpose was to seek out those instances in which any professional geological scientist had been damaged economically or professionally by the arbitrary and frivolous actions taken by governmental agencies or emotional environmental groups. Initially, the activities of the LAC were confined to the State of Colorado with the requirement that all funding be from private sources. To date, the LAC has received the amount of $2,340.00 from private donations. The LAC activities have now been expanded to include any Section of the APGS that requests assistance. Very soon, the Mountain States Legal Foundation in Denver will be filing a suit against the U.S. Forest Service on behalf of one of our members. This individual has been economically damaged by the Forest Service's arbitrary and illegal actions. It was through the activity of the LAC that this case came to light. It is expected the LAC will file an amicus curiae action in Federal Court in this matter.

For the record, it should be made clear to all that the APGS has volunteered its services to various governmental agencies and major environmental groups in the belief that some rapport would benefit all parties and the public welfare. Naturally, no response has been received. It has become very obvious that the APGS is the only party interested in proper geologic input into environmental matters.

As Professionals, we of the APGS recognize more readily than any other profession or public group the necessity for a strong national economy based on the developmexep of our own natural resources. We also recognize that these resources can be developed and produced in a manner compatible with environmental concerns. It is imperative, therefore, that we, as professionals, through our only professional organization, take whatever actions are necessary to combat this creeping socialism.

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(The following is the summary of the results of the questionnaire circulated to the membership by the ad hoc Committee on Plans and Programs of the Future. The Committee consists of Edward E. Rue, Chairman, Allen F. Agnew, Adolf U. Honkala, Henry A. Neel, and William A. Newton.)

A total of 1833 questionnaires were received back from the membership, a return of 50%.

I. DEFINITION OF GEOLOGY: The science of the earth and its constituent rocks, minerals, fluids and gases, processes and history by which scientists can predict, locate and evaluate the occurrence of materials, sources of energy and naturally occurring phenomena and apply that knowledge to the benefit of mankind.

Accept - 1175 Reject - 492 No opinion - 166

II. REGISTRATION:
A. It has been suggested by the Executive Committee that a section be inserted in the "Professional Guides Manual" stating our minimum standards for Registration of Geologists. Should these standards include: 
1. Academic requirements? Yes - 1715 No - 40 No opinion - 78
2. Experience requirements? Yes - 1742 No - 21 No opinion - 70
3. Extent of board control by other than professional geologists? Yes - 725 No - 845 No opinion - 263
4. Extent of inclusion of other allied professional fields? Yes - 883 No - 657 No opinion - 293

B. Do you favor registration in your State? Yes - 900 No - 602 No opinion - 331

C. Should we as a national group:
1. Promote registration in each State? Yes - 582
2. Leave it up to the Section? Yes - 651
3. Oppose registration in general? Yes - 351

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4. Oppose registration not meeting minimum standards?
   Yes - 919

5. Oppose existing registration where less than minimum standards changes made?
   Yes - 830

III. NAME:
A. Many of our active and prominent members have expressed a desire to change our name to something more descriptive of our sphere of influence and objectives. Which of the following do you prefer (number first, second and third choice):
   1. American Institute of Professional Geologists
      1st - 900 2nd - 268 3rd - 92
   2. Association of Professional Geological Scientists
      1st - 519 2nd - 354 3rd - 175
   3. American Institute of Certified Geologists
      1st - 260 2nd - 261 3rd - 402
   4. American Institute of Certified Public Geologists
      1st - 45 2nd - 40 3rd - 106

B. If 1, 3 or 4 above were used, would you favor the state section using the "State" Institute.
   (i.e. Alabama Institute of Professional Geologists).
   Yes - 620 No - 950 No opinion - 263

IV. COOPERATIVE EVALUATION:
Which of the following do you favor?
A. Continuing Cooperative Evaluation program as in the past - 607
B. Discontinuing the present program - 46
C. Determine what is involved to evaluate Geological Departments by studying evaluation procedures used by other professions, determine the cost involved, and then determine whether this can be accomplished - 556
D. Drop all efforts to evaluate departments - 148
E. No opinion - 415

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CONCERNING LEGISLATION
(The following is an open letter to Oil and Gas Operators in Montana, North Dakota and South Dakota from Edwin Zaidicz, State Director, Bureau of Land Management, U.S. Department of the Interior, Billings, Montana, dated October 10, 1978).
All Bureau of Land Management field offices in Montana, North Dakota and South Dakota have recently been given instructions regarding required cultural resource clearance prior to our approval of surface disturbing activities tied to Federally-owned oil and gas. The instructions given our field offices follow. We wish to inform you of these instructions as more advance planning on your part may be necessary to carry out your desired exploration, drilling and production programs.
No oil and gas drilling operations will be conducted without cultural resource clearance prior to surface disturbing activities. Oil and gas exploration scheduled to occur during winter months must receive inventory before snow obscures the ground. In those situations where industry preplanning for winter operations was inadequate because of unusual weather conditions, cultural resource inventory on snow-covered ground may only be obtained by following the procedures below. It should be noted that clearance procedures for previously plowed ground will be identical to those for undisturbed ground.
The Bureau of Land Management District Manager will determine the exact inventory process on a case-by-case basis in conjunction with representatives of the oil and gas company, the U.S. Geological Survey, the district staff archeologist, the staff surface protection specialist, and other resource specialists needed. At a minimum, the inventory process will require that a cultural resource specialist or professional:
Monitor all snow removal and surface disturbing activities at the drilling location and access.
OR
Examine not less than 60 percent of the drilling location and access ground areas by melting snow with flamethrowers or hot water/steam from burner trucks, or other appropriate melting techniques.
OR
Monitor and examine the drilling location and access areas by a combination of the two previous methods.

AND
At the earliest date following natural snowmelt, return to the drilling location and access to reexamine all affected areas for missed prehistoric or historic remains.
The inventory report shall carefully delineate all inventory procedures used, and problems or limitations affecting the accuracy or quality of the inventory, and the results of the initial inventory as well as the reexamination. Any necessary recommended mitigation of cultural resources located after natural snowmelt will be at the operator's expense (Section 28 as amended in 1973 of Mineral Leasing Act of 1920, PL 93-153, 30 USC 181).

It should be clearly understood that any uninvetoried area determined to have high cultural resource values will not be cleared for operations until the area can be inventoried during bare ground conditions.
All oil and gas leases and operators in Montana, North Dakota and South Dakota are being notified of these requirements.

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MEETINGS AND CONFERENCES

URANIUM GEOLOGY AND EXPLORATION COURSE
A three-day short course in URANIUM GEOLOGY AND EXPLORATION is to be offered twice, March 14-16, and July 11-13, 1979, by Dr. Richard H. De Voto of the Colorado School of Mines. The course covers:
- The geochemistry and geology of uranium,
- The mechanisms important in the generation of anomolous uranium concentrations,
- The many geologic environments favorable for the formation of economic and sub-economic uranium deposits, and
- Exploration techniques and programs.
Registration fee: $300.00
For information regarding the course, contact the office of Continuing Education, Colorado School of Mines, Golden, Colorado 80401; Telephone (303) 279-0300 extension 2321.

THIRTEENTH INTERNATIONAL SYMPOSIUM ON REMOTE SENSING OF ENVIRONMENT
This symposium to be held in Ann Arbor, Michigan April 23-27, 1979 is probably the most comprehensive meeting dealing with remote sensing anywhere, treating on the technology, applications development and future operational utilization including among other topics engineering applications, geology and mineral resources, hydrology and water resources, land use and urban studies, oceanic and coastal processes and water pollution and water quality. Registration is $60.00 if before April 6, 1979. For a comprehensive brochure
APGS ANNUAL TECHNICAL SESSION
"GOVERNMENT REGULATION—bane or blessing"
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REGULATORY OUTLOOK FOR MINING
BY
J. Allen Overton, Jr.
President, American Mining Congress

I am delighted by the chance to escape Washington for a day and visit with the Association of Professional Geological Scientists. Thank you very much for inviting me.

I have been asked to talk with you today about the regulatory outlook for mining and I certainly welcome the opportunity to do so. It is a subject of critical importance to our entire industry and confronts it with difficulties that are growing in both scope and intensity. In the course of my remarks, however, I will have to go beyond the question of Federal regulations, for these are only the manifestation of more challenging and threatening developments that have come to affect the entire citizenry of these United States. The fundamental cause of the regulatory rampage in Washington is not a bureaucracy run riot, although that tendency contributes to the problem. Rather, the basic fault lies in the laws as they are written and passed in the Congress of the United States. It is these laws - all too often vague where they should be precise, rigid where they should be flexible - that give power to the regulatory agencies to run roughshod over common sense and to distort our national priorities.

If we are to gain relief from those who hold power in Congress and the Administration, there are only two ways to do it: Change their minds or change the men. Now that the off-year elections are over, we know the people with whom we must deal for the next two years. In dealing with them, the fundamental question we must address and which we must persuade them to understand is simply this: Will the mining industry be allowed to continue in business or not? To gain an affirmative answer to that question, we must learn to compete as effectively in the marketplace of ideas as we now do in the areas of technology, finance and operations. Policies are not born in a vacuum and actions are not started without purpose. In the beginning there is the word. It is in the realm of ideas and the rhetoric that transmits them that the future first takes shape. If we are to influence that future more forcefully, we have to appreciate the social context within which we live and openly address the issues upon which our interests and the public interests converge. If we are silent, the only voices heard by Congress will be those of the regulators, the single-issue advocacy groups and the often miserably misinformed media.

We in the American Mining Congress will be carrying the case to Capitol Hill and elsewhere in Washington's corridors of power, but only you and others like you throughout the country can carry the case to the people. And this is vital, because if we cannot change minds in the Congress, we must stimulate the electorate to change men. Senator Lloyd Bentsen of Texas is fond of relating an incident that happened in his State back at the turn of the century, which I think might be instructive for us today. It seems that one day, a small border-town bank was robbed, and the bandit escaped across the Rio Grande into Mexico. A Texas Ranger picked up the trail and, the law being somewhat loose in those days, followed
the bandit across the border and caught him in a Mexican village. Upon catching the bandit, the Ranger discovered he couldn't speak English, so he got a villager named Carlos to act as interpreter. "Ask him his name," the Ranger said to Carlos. Carlos translated and answered, "He said his name is Jose." "Ask him if he admits robbing that bank up in Texas." Carlos relayed the question and said, "Yes, he admits it." The the Ranger took out his pistol, put the barrel to Jose's temple, and fired. "Okay, tell him he's got one minute to reveal where the loot is hidden, or I blow his brains out." Again Carlos translated and Jose blurted out in Spanish, "It's in the well in the village square... behind some loose bricks... about six feet down the side facing the cathedral". "What did he say?" the Ranger demanded. And Carlos replied, "Jose says he is not afraid to die." According to Senator Bentzen, the moral of this story is that it's dangerous to let citizens do your communicating for you. I agree, and I believe it is particularly vital that the mining industry do a better job of getting its story across to the American People and to their governmental leaders at every level. To do this, it is imperative that people in our industry -- people like you -- sharpen their communications skills and carry the case for mining to the American public and its elected leaders with more vigor than ever.

I must tell you this strongly as I can that this is an undertaking of extraordinary importance; because all too often the media, the environmentalists and the politicians show either an abyssal ignorance of what mining means to Americans or a ready willingness to distort the truth. It is your job and mine to set the record straight and get the facts across. Let me tell you briefly some of the problems we're up against.

The function of mining -- at least as I've always understood it -- is to extract wealth from the ground and turn it to the beneficial use of mankind. But today, many mining executives can give only limited thought to the work of digging minerals from the ground. They're too busy trying to shovel paperwork off their desks. Often it's like scooping the ocean with a thimble.

There is a Niagara of paperwork that not only inundates offices and swamps executive, but threatens to sap the vitality and the private enterprise system of America. I say this because a tremendous amount of it has to do with governmental regulations, and they are pouring out of Washington like the Mississippi in flood, heedless of what is in their way and what they might wipe out. These regulations have become so enormous in volume, so baffling in complexity, and so pernicious in their effects that we now have to characterize them as a major menace to the nation. Let me cite just a few examples: The Federal Register -- in which new regulations are proposed and promulgated -- ran to over 65,000 pages last year. That's more than twice as long as it was only five years ago. The federal government now produces enough documents each year to fill 51 major league baseball stadiums. As one observer put it, "Washington is the source of so much red tape that you think it was working on a landforms map like the Grand Canyon!" The steel industry has to comply with 5,600 regulations... administered by 27 separate agencies. An oil company has reported that it needs 636 miles of computer tape to store the data required by a single federal agency. Recently I started to compile a list of the new and proposed regulations with which the American Mining Congress is now actively engaged. It took me nine pages just to list them. Any one of these regulations can be horrendous by itself. For example, the draft proposal for permanent surface mining and reclamation regulations alone is over 450 pages long. With the United States desperate for development of its own energy resources -- with our President calling this task "the moral equivalent of war" -- such bureaucratic hindrance is more than ironic. It is tragedy. You and I know that America is the Saudi Arabia of coal, and the mines we can extract, the less we'll have to keep bowing to Mecca for oil. Perhaps in the long run, nuclear fusion or solar power or some other esoteric form of energy will ride to our rescue. But -- between then and now -- we need a resource that will bridge the gap. And the name of it is: Coal. But here and elsewhere, it is becoming increasingly difficult to unearth the wealth of the country. And the reason is clear. We are having to dig through an awesome overburden of governmental regulation. I submit to you that our government is on a regulatory rampage. It has become a bureaucratic rogue elephant that is trampling the economic growth of the nation. Expanding regulation siphons off money for generally non-productive uses... dries up capital investment... and feeds the fires of inflation. The direct costs include 41 regulatory agencies in the federal government alone, with over 126,000 employees, who will spend nearly $5 billion in this fiscal year. Yet this is only the tip of the proverbial iceberg. For every dollar the government spends, its regulations compel private industry to spend $20. And what does this mean? It means that the total regulatory bill is now in the neighborhood of $100 billion a year and rising. These billions of dollars might otherwise have gone into capital investment for productive uses we can build more efficient plants and equipment... to create jobs for the unemployed... to revitalize our decaying urban centers... to support research and development in health care, housing and mass transit... and for scores of other worthwhile pursuits. But it is only capital investment that suffers. The $100 billion that industry has to pay for regulation is reflected on the price tags of goods sold to the American consumer, because it adds to the cost of the bill, and the government pays only because most of it gets passed along.

So what have we in this country today are two priorities of economic concern -- high inflation and high unemployment -- and a government hellbent on following policies that make both of them worse.

The mining industry is hit particularly hard by federal regulations because it -- unlike many other industries -- often cannot pass along higher costs to the consumer. Many of our mining companies have to compete with foreign producers who have the benefit of governmental favors, instead of having to labor under governmental folly. Also, these foreign producers are frequently exempt from the type of environmental and occupational regulations that push up the cost of mining in our own country -- and this adds to their competitive edge. As a result of all this, the mining industry is on the defensive in a state of mass siege. A number of companies and some entire segments of the industry are literally in danger of going under. And our government is reacting with the view that when you see a drowning man, you should throw him an anchor. I'm not going to go into the details with you today, but I can say without reservation that the demands being placed on the mining industry by escalating regulations are just becoming too burdensome to carry. In some instances we are being required to use technologies that don't even exist, but we can't seem to make federal agencies understand this.
We say we're miners, and they insist we become magicians.

In other cases, regulations overlap or contradict one another in such a way that to comply with one is to neglect the other. Irrationality is being raised to the level of an art. In addition, regulations are being proposed for which there is no demonstrable need whatsoever . . . or where the need is so problematical, that to regard it as urgent is like worrying about running out of toothpicks in the middle of a famine. Time and again we see no attempts to consider trade-offs or weigh the costs of regulations against their supposed benefits. This is the work of zealots, and the only guidance they now is their own self-proclaimed virtue. The repeated failure -- I should call it the obstinate refusal -- to take account of the economic consequences means that some regulations can have ruinous impact. Already massive public land withdrawals have severely impeded our ability to look for new mineral deposits, and now the costs of regulation threaten to keep the industry from working the holes it does have in the ground. It's getting harder and harder to keep miners alive. They pay taxes and keep miners in proper operating condition. Finally, there is a wilderment and foreboding about the sheer mass of regulations . . . their frightening complexity . . . the paralyzing uncertainty about what the bureaucrats will propose tomorrow and how the rules will be changed in the middle of the game. Government by regulation has created a paradise for lawyers and a banquet for accountants, but it is pure hell for the sensible businessman. Decentralization is profound and, in my judgment, it is ominous. But we are not ready to accept defeat. Nor to surrender to defeatism. I and many others -- from mining and from the whole spectrum of private industry all across the country -- are raising our voices and making our case wherever we can get a hearing.

My colleagues in the American Mining Congress and I have been to the White House numerous times . . . to Congress almost daily . . . to meetings with Cabinet secretaries and undersecretaries . . . to sessions with the regulatory chieftains . . . to conferences with leaders of other industries . . . to interviews with the media . . . and a few times to court. We've gone wherever we could get our foot in the door. If our pleadings on all these occasions could be summed up in one word, it would be Balance. It would be what the ancient Greeks called "the Golden Mean" and which was defined as "the way of wisdom and reasonableness between extremes." You and I know that the mining industry had sins of omission and commission in the past which must be rectified in the future. The same is true of some other industries. We know that the environment must be nurtured, for we and our posterity will live in it like all others. We know that the health and safety of the work place merit heightened attention because human life and well-being are precious. We know that the increasingly complicated times in which we live may require a measure of increasingly complicated regulation. We are not insensitive to any of these facts. At the same time, we know that modern society is absolutely dependent on minerals. As I've often said, our horn of plenty begins with a hole in the ground. Any actions or regulations that could significantly affect the adequacy and security of our minerals base must be contemplated with this possibility foremost in mind. In short, a sense of balance ought to prevail. So far, the regulators do not agree. But I say this: If they have not gained the ability to anticipate the future, they have surely lost the capacity to appreciate the past. The United States of America, which recently celebrated its bicentennial as the oldest democracy on the face of this earth, was founded with the hope of restoring "the Golden Mean." The men who wrote the Constitution were men of scholarship, as well as men of experience and affairs, and they knew the ideals of ancient Athens as well as they knew the Greek architecture that was soon to be replicated in the public buildings of our infant democracy. The War of Independence having been won, the authors of the Constitution were determined to create a legal bedrock of a free society. The key was a governmental of checks and balances. Neither a tyranny of a king nor the despotism of an all-powerful parliament. Neither the privileges of aristocracy nor the license of anarchy. Neither the fragmentation of European principalities nor the centralism of Czart Russia. The watchword was "balance." A "balance." "Balance." The keystone in our edifice of liberty. The state would be represented equally in the Senate but the House would reflect population. A strong Executive could veto but a determined Congress could override him. The President would make foreign policy but only the Congress could raise armies or declare war. The judiciary would be independent but the Constitution would be supreme. Checks and balances, checks and balances -- this was the theme and threadwork of our national foundation. Even then that the Constitution was ratified only on the promise that ten amendments would quickly be adopted. These ten, called the Bill of Rights, were designed to strengthen the rights of the people. Each one of them specifically limits the powers of the government. What a dismal contrast to these noble beginnings is the emergence of a Fourth Branch of government, the regulatory agencies never elected . . . firmly entrenched . . . so often inflexible. Our government was intended to compartmentalize differences and to accommodate the pluralism of our society, not to ride roughshod over "the way of wisdom and reasonableness between extremes." Some people see these enforcers of a new morality as a bunch of revolutionaries, but I don't. I see them as counter-revolutionaries, as the guerrillas in government and the renegades of regulation because America has its revolution 200 years ago. And if the Declaration of Independence was its manifesto, its best expression was in a book by Thomas Paine called Common Sense. This is what underlies the strength of the Constitution -- not abstract theories, but common sense. And common sense is what is so appallingly absent from the current edicts of regulation. So this morning I must tell you this: Not only are mining and other industries in desperate straits, but the basic freedoms of the American people are at bay. We have a self-interest at stake, of course, but it is in full confluence with the national interest . . . and the time to do battle for both is now. Let the summer soldier and the sunshine patriot take their leave . . . and let the rest of us go forth to fight. I can assure you that my colleagues and I at the American Mining Congress are enlisted for this battle. But I can also assure you that no army of lobbyists will come to the day in Washington. I do not regret that. I rejoice in it. I glory in it. I see it as redeeming the faith of the Founding Fathers. No special interest group -- whether it be the mining industry or the environmentalist movement -- should be able to determine national policy because of its power and pressure. In a government of the people, politicians should respond to the people. And seldom before do I
believe the politicians in our nation's capitol have felt more strongly compelled to do so. Party loyalties have eroded among the voters of the country...party discipline has broken down in Congress...traditional centers of leadership have been weakened. Power is with the people, if only they will seize it. Scores of Senators and Representatives are fairly new in Washington...many of them were elected as mavericks...they took their campaigns directly to the voters...and they know full well that they will stay in office only for as long as they give the voters what they want. But, how is anyone to tell the will of the people, if the people do not make it known? This is the major tragedy of our time: the minority makes itself heard. The people must be galvanized to action, and the place to begin is by giving them the facts. In my judgment, if the electorate were better informed, it would set up a chorus of new demands. The people would say that it's time for their government to put a check on regulation run riot. The people would say that ruinous inflation and tragic unemployment were at hand. The people would pay for the whimsy of our bureaucrats and the appetites of the extremists. The people would say that America must preserve the minerals base that is the very taproot of our national security and material well-being. The people would say that our government once more has to be the citadel of Constitutional fidelity...and our leaders should embody the balance of common sense. These are the messages that should be sent to Washington, but first we must carry the facts to the country. This is your job and mine. It is a task for each of us as surely as it is our task to bring forth resources from the ground and turn them to productive use. For, if we do not shore up our position in Washington, the time may come when we will be caved-in everywhere else.

Now we must look to you and others like you throughout the mining industry to sharpen to a keen edge the skills of communication...to teach your colleagues what you have learned yourselves...to muster your resources in full array for the battle for public opinion...to create not only the techniques, but stir the spirits for communication in your own organizations. Go home from here and sound this message: Let us take our case to the people. Let us take it to the governor, the legislators and our local officials. Let us speak it to our friends and neighbors and our community leaders. Put it across to our employees, our stockholders, our suppliers and customers. Corner our elected representatives when we go to Washington and corral them when they come home. Let us not curse the media but try to educate them. Wherever we go...with whomever we talk...whenever the chance presents itself...let us pound forth our message with the hammer of truth and the avil of reason. Stand fast now in the fight...stand as patriots of America stood two centuries ago...hold firm to the admonition of Thomas Paine that "Those who expect to reap the blessings of freedom must...endure the fatigue of supporting it".

**ISSUES AFFECTING WESTERN COAL DEVELOPMENT**

by Charles W. Mahaffie
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Will Rogers said there was at least one thing all Americans could be thankful for and was "we don't get all the government we are paying for". Will Rogers made that observation way back in the days when the federal budget was under $100 billion. The trouble with Will Roger's thought today is that even though all Americans can still be thankful we are not getting all the government we are paying for, the federal budget is now at $500 billion and we are most certainly getting far more government than we can afford.

An Indiana Congressman recently determined that there are 84,700 people on the federal payroll for the purpose of writing regulations. Jenkin Lloyd Jones, the syndicated columnist, has calculated that if each of them produced just one regulation in each 40-hour work week, we would have 4,394,400 new regulations in one year's time.

I was glad to get that statistic about the 84,700 people hired to write federal regulations because it may explain a news article I clipped from *The Denver Post* about a year ago. The headline was: "Walt Disney Productions Discontinues Mickey Mouse Club."

Obviously, you can hardly develop a wide National following for Mickey Mouse Club when the potential membership is concentrated in Washington. To illustrate that point, the U.S. EPA contacted the State of Iowa to find out why it had no criteria for the discharge of pollutants into the ocean. (Apparently, EPA's regulations require each state to establish such criteria and, not having heard from Iowa, EPA followed up.) The reply EPA received was: "Iowa has not established ocean discharge criteria since the last area of ocean receded from the states about two million years ago."

Along that line, I'm sure this audience all read the news articles when the Senate recently passed that portion of President Carter's Energy Package relating to "Deregulation of Natural Gas." I've been told the Senate Bill includes positions for 300 new regulators and the Federal Energy Regulatory Commission (FERC) has advised they will need approval for 500 more regulators than the Senate Bill provides. That adds up to 800 new regulators to deregulate natural gas. Like Will Rogers said: "It's really no big deal being a humorist - not when you have the whole government working for you."

Our Nation, today, does not need government planners - we need builders. That thought is based on Weinberg's Second Law: if builders built buildings the way planers write programs, the first woodpecker that came along would have destroyed civilization. Our Nation has too many more regulators and more regulations to plan, manage, and control our Nation's economy and our private lives. On the contrary, the American people need to get the federal government to overcome its FEAR OF FREEDOM and restore a Climate of Freedom in which the initiative, the ingenuity, the imagination, the independence and the creative genius of the American people can manifest itself and flourish once again.

While many people do not seem to be aware of it, our Nation has had a National Energy Program for several decades. The major policies involved in that Program are: 1) Encourage the use of oil and gas; our Nation's premium fossil fuels which already supply about 75% of our energy fuels but which are the fossil fuels in least plentiful supply, representing perhaps 10% to 20% of our Nation's fossil fuel resources; 2) Encourage these premium fuels to be used in wasteful and inefficient applications; 3) Discourage domestic exploration for, and domestic production of these premium fuels; 4) Encourage increased importation of these premium fuels, thereby increasing the exportation of dollars which increases our Nation's balance of payments, trade deficit, weakens the dollar's strength abroad, increases infla-
tion and unemployment at home, jeopardizes our National security, and weakens our economic strength; and 5) Pay foreign producers of these premium fuels much more than is paid to domestic producers, while making domestic production more costly by increasing the number of government regulators and government regulations.

This month marks the 5th Anniversary of the Arab Oil Embargo. Considering that fact in the context of the National Energy Program I have just described reminds me of a bit of homespun philosophy that seems applicable to the situation. With apologies to the ladies present for my "French", the bit of philosophy is: "When you are up to your a in alligators, it is hard to remember that your original purpose was to drain the swamp."

As we mark the 5th Anniversary of the Arab Oil Embargo, let me reflect a moment on how "successful" the National Energy Program our Nation has been pursuing for several decades has been working.

During the past five years, the National Energy Program I have just described has "succeeded" in significantly increasing our imports of oil. (Imports are approaching 50%.) We have "succeeded" in significantly increasing our exportation of dollars, which is fast approaching $50 billion annually. (Our Nation's gold reserve, if sold at $200 an ounce, would now buy only about 13 months of oil imports. Perhaps not even a year's supply when OPEC increases the price of oil this December.) Our National Energy Program has "succeeded" in setting new records for balance of trade deficits, and achieved record lows for the dollar abroad. We have "succeeded" in increasing the number and size of the federal agencies. Each year we set new records for the number of regulators, regulations and the number of reports and forms needed to satisfy them.

The National Energy Program we have been following for decades has obviously been "successful". In fact, it has been so "successful" that no one can be found who wants to take credit for it. It has been said, "You can't quarrel with success". Well, it's time we started quarrelling with "success" like this, and quarrelling as if our Freedom depended upon it, because it does! And, because if we do not, it won't take many more months of such "success" and then there will be little left to quarrel about, at least so far as our political and economic freedom is concerned.

Project Energy Independence is now about five years old. We are more dependent on foreign oil today than we were five years ago. Oil is the "lifeblood" of our economy, and our economy is being kept "alive" by receiving nearly a 50% "blood" transfusion and we who are most concerned about the continuing economic health of the patient control neither the "blood" supply nor its price.

The Arab Oil Embargo started five years ago. Project Energy Independence is about five years old. It took our Nation less than five years to pick itself up from the depths of Pearl Harbor and achieve the goal of unconditional surrender of its attackers.

Three Presidents in the past five years have stated that the Nation's goal for the coal industry. That goal, as you know, is to achieve an annual production rate of 1.2 billion tons by 1985. Since that goal was first announced, nearly half of the time allowed to achieve that goal has already passed. Yet, the coal industry is still producing about what it produced in the 1940's. With about 7 years left it would seem appropriate to inquire about the Nation's Program for achieving its goal for coal.

Before doing so, let me put coal in some perspective. This Nation has hundreds of billions of tons of coal recoverable with present technology. Significantly more than half of the Nation's surface recoverable reserves lie west of the Mississippi River. The industry, today, is producing about 670-690 million tons per year and more than half of that production now comes from surface mines. About 75% of the coal produced today is used as boiler fuel by the electric utility industry to generate electricity. Coal can be used to displace oil and natural gas now being used as boiler fuel by industries as well as electric utilities. Depending upon the heat content (BTU's) of the coal, 4-5 barrels of oil can be saved per ton of coal used in place of oil. Significantly more than half of the low-sulfur recoverable coal reserves lie west of the Mississippi River. About 60% of the western coal reserves are owned by the Federal government and, because of the complex surface and mineral ownership situation in the west, the Government actually controls coal mining on at least 80% of the western coal reserves. With that background, I suggest the "issues affecting western coal development" can be summarized in one word: "Government".

In the time available, I will touch on perhaps 6 issues affecting coal development in the context of the Nation's Coal Program:

The Nation's Coal Program is reflected in the National Policies affecting coal. Let me review some of these National Policies. First, we want to increase coal production. To that end a moratorium was imposed in 1971 on new leasing of the largest reserves of surface mineable coal that is environmentally acceptable to mine and to burn, and the moratorium will be kept on until at least 1980, thereby assuring that no coal will be produced by 1985 from new leases that might be made available beginning in the 1980's. Second, we want clean air. To that end, air emission standards were established in 1970 for coal used a boiler fuel. The largest reserves of "compliance" coal meeting those 1970 standards are located west of the Mississippi, and the coal mining industry and its potential customers for this "compliance" coal were planning to mine it and use it. Therefore, in 1977 the Clean Air Act of 1970 was amended to require all new plants to spend the money to install Best Available Control Technology (BACT); regardless of whether an incremental amount of the coal burned. Thus, the Clear Air Act Amendments of 1977 changed the market conditions and the plans of both the mining companies and the electric utility industry. (I regret I cannot tell you how this change will significantly reduce air pollution since applying BACT to a high sulfur coal can nevertheless produce a greater amount of SO2 in the "cleaned" emission than would have been the case without BACT if low sulfur coal had been used as the boiler fuel.) Of course, the cost to install and operate BACT will result in higher electricity bills. (I also regret I cannot tell you how this result helps achieve another one of the National Policies which is to hold down the cost of energy.) Thirdly, the continuing moratorium and the Clear Air Act Amendments of 1977 will encourage production of coal in the eastern coal provinces. Much of the mineable coal reserves in the East are both high sulfur and deep and we are, of course, concerned about mine health and safety. We also recognize that productivity per man day shift from underground mining has been going down steadily since 1969. (It is now about half what it was then.) Decreasing productivity does add to the cost of producing coal from deep mines. Therefore, the Mine
Safety and Health Act was recently amended to "strength" it and, by encouraging the production of eastern coal, more miners (if we can find them and train them) will be exposed to the hazards of underground mining. (I regret I cannot explain to you how we reduce accidents and improve health by increasing the number of miners working underground. Nor can I explain how we keep the cost of deep mined coal from rising through the no increase in wages and regulations and regulations which further decrease productivity and increase the cost of mining in order to comply. But, as I mentioned earlier, one of the National Policies is to hold down the cost of energy.) Fourth, being concerned about competition in the coal industry, we want to do all we can to increase competition and prevent concentration. (I regret I cannot explain to you how the Policy of encouraging competition is furthered by keeping the moratorium in effect so that companies who do not now have leases cannot get leases to get into business and compete. This is especially puzzling since many of the presently existing leases are held by companies being looked at as candidates for "horizontal divestiture" by reason of concentration.) Fifth, we also want to help small operators stay in business. That is why, in passing all the laws and establishing all the rules and regulations, provision was made for financial assistance to small operators so they can comply. Considering the cost of complying with all the federal laws, rules and regulations, and the costs and uncertainties of the long delays attendant to the federal permit process, it is certainly puzzling to find small operators being forced out of business. Or, forced to seek out large companies having the financial resources to undertake the environmental studies and the monitoring programs, and "wait out" the long delays and uncertainties involved in getting all the permits needed to mine. This is especially puzzling because the companies with the necessary financial resources are often the very companies we are concerned about regarding "horizontal divestiture" by reason of concentration and/or competition. Of course, all of these costs add to the cost of mining, whether the operator is in or out of business. Increasing the price of coal. Since the customers of the electric utilities will ultimately pay these higher costs, I regret I cannot explain how this helps keep down the cost of electricity.) Sixth, in achieving the Nation's goal of doubling coal production, we, of course, want the mining to be done in an "environmentally acceptable" way. To be certain this is done we have enacted: The National Environmental Policy Act of 1969; The Clean Air Act of 1970; The Clean Air Act Amendments of 1977; The Clean Water Act; The Clean Water Act Amendments; The Coal Leasing Act Amendments of 1975; The Surface Mining Control and Reclamation Act of 1977; The Critical and Endangered Species Act; The Safe Water Drinking Act of 1974; The Historic Preservation Act; The Solid Waste Disposal Act of 1971; The Toxic Substances Control Act; The Water Pollution Control Act; The Water Pollution Control Amendments of 1972; The Resource Conservation and Recovery Act; The Mine Safety and Health Act; The Mine Safety and Health Act Amendments of 1977 and the Federal Land Policy Management Act not to mention other federal and state laws, and a flood of rules and regulations of numerous agencies such as the BLM, USGS, CEG, EPA, MSHA, the Corps of Engineers, and others. In fact, new rules and regulations are coming out almost daily and new agencies, such as the Office of Surface Mining are just getting into business. (In the language of Washington, the Office of Surface Mining is a three syllable word "O-S-M". To the coal industry now reviewing the 487 page of Draft Regulations, it is a two syllable word, pronounced "awe-some".) We have provided for Prevention of Significant Deterioration of air quality, as well as New Source Performance Standards. We have also made provision for states to impose stricter requirements if they wish to do so. Even though we do not know all the areas of the Nation that will be affected, where no federal mining can take place and no plant can be built, there is no need to worry about having enough coal available. There are over 500 existing federal leases right now and nearly 200 more Preference Right Lease Applications pending. (Indeed, some have now been pending for six years or longer.) While not many of these existing leases are actually in production, we know the existing leases have at least 16 billion tons of "recoverable" coal. Obviously, plenty coal is already under lease. It is a fact that 491 of the existing leases (about 95% of the total), covering 90% (717,000 acres) of the total acreage under lease, are leases issued before all the laws I mentioned were enacted, and all the rules and regulations were published, the only certainty anyone can have that they can mine coal today occurs only when all the necessary permits have been issued and are in effect. (Even then, the right to mine is still not 100% certain. It may merely mean that some individual or organization was too busy on other matters to challenge in court the "adequacy" of the "site-specific" Environmental Impact Statement.) In the real world of today, recoverable reserves can only be determined after the fact. That is to say, a mining company today can really determine recoverable reserves only after it has in hand all the necessary permits authorizing it to mine. Of course, if we made determinations of recoverable reserves after the fact, we could not make all the projections we are now making to guide us in our planning. (I regret I cannot tell you how we know the hundreds of existing leases that are not in production and which were issued before all these laws, rules and regulations existed, and nevertheless are legally available to mine, legally mineable, and the "most environmentally acceptable" to mine.) This brings me to the final National Policy affecting coal that I will talk about which is "public participation". This is most important. Indeed, the Secretary of the Interior recently issued a call for "Public Participation in Planning More Public Participation". Why is this important, given the Department of the Interior's announced schedule for lifting the moratorium and resuming federal coal leasing by mid-1980? I can say to you with total confidence, and without fear of successful contradiction, that, under present law, the resumption of leasing is beyond the control of the Department of the Interior, the Department of Energy or any other agency. In fact, the resumption of leasing is beyond the control of the entire executive branch of the federal government including the President. Let me explain: Federal coal leasing is a "major Federal Action Significantly Affecting the Human Environment". Therefore, under NEPA, a Section 102(2)(c) Environmental Impact Statement is mandatory! Thus, unless you can guarantee that the Interior Department's new Programmatic Environmental Impact Statement on its new leasing program will be found acceptable to every single adult citizen and every single organization in the United States, the Programmatic EIS now in preparation can be challenged in court as to its "adequacy". Granted, since former leaders of the Environ-
longer afford. Lou Holtz, coach of the Arkansas Razorbacks, said it best: "Be careful. That light at the end of the tunnel may be an oncoming train."

The evidence is mounting that the National Policies affecting coal will, if continued, be just as "successful", in their way, as the National Energy Program has been.

"COAL" as the National Coal Association says, may be "America's Ace In The Hole" - but - we are not in a friendly poker game. The "stakes" are not less than Freedom itself.

Eighteen months ago, President Carter elevated the energy "game" to "the moral equivalent of war". Just four months ago, the President said that in that "war", "coal is the most formidable weapon in our arsenal."

Given the massive coal reserves of our Nation, there is no question our Nation's arsenal is indeed formidable. But, no arsenal, however, formidable is worth much if our Nation's leaders lack the resolve to use the weapons in our arsenal, and use them to their fullest.

What a majority of the Congress does not seem to yet realize is that you do not win "wars" by appointing "pacifists" to the Joint Chiefs of Staff - and by selecting "anti-war demonstrators" as your squadron commanders and platoon leaders. Our National will seems paralyzed. The only decisions we seem to come to are "no decisions". A "no decision" society cannot win this "war" - or any other.

THE SCIENTIST IN THE POLITICS OF ENERGY

by Richard G. Bulgin, Executive Director
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You have every right to know why a layman like myself accepts the honor, challenge and risk of talking to such a distinguished group of scientists about your role in the politics of energy. Basically, I am not sure you are being heard in the political arena where decisions are being made, or whether enough of you are even engaged in that arena. That concerns me because society has the most to gain from your progress during formulation of national energy policies and the most to lose if your advice goes unheeded or is not rendered at all. Also, I am disappointed in the performance that achieves only "conservation" as the centerpiece of a national energy policy at a time when more noble objectives could have been attempted. Moreover, I remain convinced that sound scientific advice is the vital linkage between the Congress and rational policies that guide the direction of energy developments. But I am equally convinced that the modes now used to input such guidance must be drastically altered. Therefore, I have a strong desire to share some thoughts with you concerning the nature of the subject.

The thought I wish to develop is that we have a credibility gap between the politician and the scientists that is not likely to narrow unless an organized effort is brought to bear upon its source, which is public beliefs and opinions.

Let me give you examples of what I mean. As one, let me ask what happened to the scientific evidence that should have guided the formulation and debate of a national energy policy? Even if the energy industry was over-zealous in lobbying its interest, why was the public convinced it was being "ripped-off" by tales of shortages if ample evidence was available to the contrary; evidence that should have led to the
energy policy that exploratory and other scientists have deemed so necessary for so long? I suggest that we have a credibility gap that led to what is now called something other than energy policy; terms like "energy program", "energy plan", even "energy bill"! These titles are a significant departure from the criteria of policy which by some definitions would require incorporation of specific guidance relative to the future sources of energy supply. However, let's be fair about reviewing the energy legislation in light of other criteria. The natural gas compromise approved by the Senate was done so contrary to the advice of 100 scientists. Yet, almost on the day of passage, an industry spokesman announced a natural gas surplus and a shortage of customers. Incidentally, the November issue of National Geographic contained an article on natural gas opening with the statement: "We could have it running out our ears." There is no way that statement could be made credible to the citizens who experienced two winters of gas shortages.

Better examples can be found in the credibility gaps between scientific evidence and the Clean Air Act of 1970 and its impact on the automobile. In 1977 the EPA still insists on unleaded gasoline despite the fact that there is no evidence of a death or even an illness from lead in the air coming from burning gasoline. Thus, engine knock prevails. The real reason for removing lead from gasoline was a suspicion that it was poisoning the catalyst in the emission control unit. Scientists suspected ethylene bromide, a component of anti-knock gasoline, as the poisoner. Nevertheless, we continue to use 20% more crude oil to manufacture unleaded fuel and require its use in late model automobiles. Worse still is a seeming disregard of scientific evidence concerning carbon monoxide from the exhaust of automobiles. Environmentalists will measure emissions at the curb-side or near the highest expected levels and extrapolate those measurements as applicable to the air being breathed by the general public. Scientists have found that in the broad expanse of our natural air, CO levels are totally safe for human beings. In 1971, scientists at the Stanford Research Institute identified the organisms responsible for CO removal from the air to be the fungi of the bread mold and penicillin types, using for their own metabolism the 270 million tons of man-made CO each year. Therefore, carbon monoxide will not build up to dangerous levels in ambient air except on a localized basis and these areas can be managed for public safety. However, watch for mandatory public emission inspections to develop based upon fears of carbon monoxide rather than the more important requirements of road safety.

These are examples of situations where political decisions have been derived based on forces at work more influential than those of science and technology. As a layman, I accept the criticism of looking to science more as a collection of facts leading to practical acts rather than as study of concepts and methods leading to the understanding of natural processes. But in these instances, I think my view is justified, as would be my question to the scientist, "What's happened?"

I submit that the answer rests in public beliefs and opinions which causes every politico to question the political feasibility of a motive at any given time. Once convinced of a measure to support, he proceeds within a political framework which has no ground rules relative to rationality.

If we were to cast about for cases in point to use in developing a discussion of this situation, we might elect to expand on those just mentioned. Or we could discuss the needless and costly march on Seabrook. No doubt, someone would like to take on the plight of the lonely small darter. But I think we may find more useful information in a discussion of the current status of radioactive or nuclear wastes. This subject is complex, somewhat confused and potentially has so significant impacts upon society, depending upon how politics and science ultimately interact.

In this case, we have the politician, soon to face legislative proposals concerning the disposal and management of nuclear wastes, but confronted with the memory of the storage site failure at Lyons, Kansas, a constituency truly confused by a media blitz on the subject, conflicts developing among scientists over geological repositories and numerous federal agencies drafting regulatory policies.

There are several facts to keep in mind as the scenario is developed: Nuclear wastes is a very timely subject, a daily headline with the media, locally at least. Its storage anywhere is strongly opposed by anti-organizations having scientists and intellectuals among their membership. It is the most explosive of all the energy issues and surrounded by the most questions. The public looks upon nuclear waste proposals as "tricky tactics" and propaganda. They are approaching the point of demanding absolute proof of no danger in its management; a prerequisite not found in any other technological achievement that I am aware. Perhaps the most important fact of all is that we cannot benefit from nuclear energy without producing nuclear wastes, and once produced, these wastes must be neutralized or disposed of in some suitable manner. If there are to be any benefits -- electrical power, agricultural and industrial tracing, treatment of sewage, curative medicine or national security -- there must be a feasible means to dispose of nuclear wastes. There are no exceptions.

Period. No nuclear wastes means no nuclear energy.

Those facts are among several other forces at work which confront the legislators in their dealings with nuclear wastes. The Environmental Protection Agency (EPA) is developing numerical standards applicable to waste classes, environmental criteria applicable to site selections, public health and safety. The Department of Transportation (DOT) is developing risk assessments, packaging and movement criteria and evaluating transportation adequacy. The Nuclear Regulatory Commission (NRC) is developing licensing criteria that will govern and regulate site selection and operation. This criteria is supposed to become the means for conducting consultations with and gaining concurrence from the States involved as well as the general public. The Department of Energy (DOE) is developing the technical criteria dealing with every aspect of site selection, waste management and operation. A 14 member Interagency Review Group (IRG) appointed by the President last March, has been reviewing nuclear waste problems in order to develop the Administration's policy and programs for the long term management of these wastes. Their Draft Report to the President was published October 1, 1978. All of the foregoing events are scheduled to form some comprehensive package, a part of which will be draft legislation for Congressional consideration beginning next January.

Looking at some of the provisions of the IRG report leaves, for me, more questions than it does answers to the problems noted. It describes nuclear waste management as inadequate over the past three decades due in part to inadequate perceptions of technological and scientific capabilities needed to develop
an acceptable disposal capability and in part to low funding since salt was the only geologic repository medium considered for high level wastes and focus was on few sites. One can gain an impression from such descriptions that we face an entirely new problem in the field of nuclear waste management. Considering that we have expended $951 million on nuclear waste management through 1977, and have estimates of $374 million projected for 1978 and $449 million for 1979, adds little evidence to the problems as being new or that interim measures at those costs would not have caused some consideration towards more permanent solutions. However, the report contains the following statement concerning research and development that would have led to those solutions:

Previously, very few earth scientists have been involved in either program management or scientific R&D for what is now recognized as a problem whose resolution will clearly require an unprecedented extension of capabilities in rock mechanics, geology, hydraulics, hydrology, and long term predictions of seismicity, volcanism, and climate. Important groups of scientists from disciplines such as materials research and risk assessment modeling have until recently also not been incorporated into the program.

Those views are inconsistent with those that can be found through minimum research. As early as 1955, the National Academy of Science gathered 63 scientists in Princeton, NJ to consider geological, biological, physical and chemical aspects of waste containment. There is a report published by the Oak Ridge Laboratory in 1962, titled: "Engineering Geology of Radioactive Waste Disposal", using over 30 references dated during the period 1957-1959, and which treats every conceivable aspect of managing nuclear wastes. More recent articles dated in 1976 and 1977 leave no doubt about the depth in which this subject has been explored.

Regarding risk assessment modeling, it is not known why the IRG omitted from its list of nine other studies considered, a most comprehensive, four volume study conducted by the University of New Mexico titled: "Development and Application of a Risk Assessment Method for Radioactive Waste Management".

This work contains an environmental and economic model and even includes a Users Computer Code Manual. The study is dated July 1978 and was sponsored by the Office of Radiation Programs, U.S. Environmental Protection Agency. Therefore, I suggest the scientists and technologists have expended to date an unprecedented extension of their capabilities into the field of nuclear waste program management, contrary to the views of the IRG just quoted. One is led to wonder, in a manner of speaking, if the wheel needs re-inventing. There is other evidence to suggest it.

Most if not all of you are familiar with the Waste Isolation Pilot Project, or WIPP, near Carlsbad, NM. This site has been under investigation for a number of years and all the information that we are going to know about that site is known, short of what will be gained through the actual emplacement and instrumentation of nuclear wastes into the basinal salt at about the 600 meter level. Yet, the IRG report has this to say about the WIPP:

The site evaluation report and the Environmental Impact Statement relevant to this site have not yet been completed, but publication for public review and comment is expected shortly. In the absence of these documents, neither the DOE nor the IRG are yet in a position to form a judgment about the adequacy of this site. This judgment will be made through the NEPA process at a later date.

If such lack of judgments are real, they must not be supported by the IRG Chairman, who is also the Director of Energy Research in the DOE. In a statement made on November 14, 1978 at the winter meeting of the American Nuclear Society, he said:

We hope to submit a license application by 1981, defend it and then submit the license to environmental review and defend that. I'm optimistic that we can bury our first nuclear wastes in New Mexico by 1985 or 1986.

That statement from such a credible source should remove all elements of doubt concerning scientific evidence, scientific perceptions and technical capabilities to safely handle the long term storage of nuclear wastes. "The wheel is formed."

However, removing scientific doubt does not automatically deal with the problem of social consensus. Public information and education about the true nature of nuclear wastes will require considerable effort and the IRG recognized this fact. They recommended to the President that the widest dissemination be made of fundamental scientific information and that he be informed of the nature and intensity of public views on the issues. But in another section of the report they recommend that there be no focus in the storage program on the near term options, principally salt repositories, since that approach risks prejudicing the NEPA review by tending to foreclose options prematurely.

In my judgment, nothing could prejudice more the weighty issues the politician must already face than to remove the one solution in the program that is supported by unmistakable scientific evidence; storage in bedded basinal rock salt; probably the best repository, certainly the most forgiving. Then too, what possible information can the EPA have forthcoming on the effects of radioactivity on the human body, or about the geologic formations and mediums or about the environmental expectations at 600 meters below the surface that science has not already developed and published for them? Once again we identify the credibility gap.

While all these policy matters are being correlated at the national level, at least 11 state have banned nuclear repositories within their boundaries and 15 more have such a ban under consideration. Our senior Senator from New Mexico, concerned over whatever contingency might develop, has proposed legislation to provide each state a veto over site selection. Right now, proposals for storage of nuclear wastes in New Mexico would not stand a chance of a passing vote in the State Legislature.

In Congress, Representative Udall from Arizona has this to say:

The resolution of this thorny nuclear waste issue will largely depend on the ability of politicians, elected for just a few years, to make judgments whose effects stretch thousands of years into the future. This is unlike other public-policy problems. The damn thing may be impossible.

One cannot have but sense a lack of direction caused essentially by the forces at work keeping this problem of nuclear wastes a problem so that solutions are slow in coming . . . if they come at all.

So, let me add a finishing touch to this aspect of the political scenario. The IRG was asked to formulate recommendations for the establishment of an Administration policy with respect to long term man-
agement of nuclear wastes and supporting programs to implement the policy. Confronted with strong opponents of anything nuclear, the IRG apparently opted for neutral language in their report what would accomodate such views including those most willing to study the problem to death. These same forces at work must have influenced the DOE before they announced on November 16, 1978 the eight areas of technology most promising for commercial use in the near future; a phase two that will emphasize production. Nuclear energy was not listed.

In my judgment, we have a clear signal that nuclear energy and the management of nuclear wastes therefrom will come about only through a well informed public and not from decisions made at the national level.

Looking at the prospects of an informed public are not encouraging. We are a long way from achieving a public understanding of nuclear wastes and nuclear energy. Many antiorganizations are at work undermining all attempts to communicate scientific facts and evidence. Probably no useful purpose would be served here by developing in detail this important aspect of the over-all problem. Suffice it to say that the politician must face some very real and strong public beliefs and fears. As Josh Billings said: "It is not that the public is ignorant. The problem is that we know so much about what isn't true". Also, public knowledge is not being helped by recent discussions which question salt as a repository for nuclear wastes, particularly in New Mexico and Carlsbad.

It seems that bedded salt, the leading contender as the repository for nuclear wastes, has come under renewed debate. Last July, the President's Office of Science and Technology gave it a poor review. The IRG reached consensus but was short of total agreement concerning salt as a medium. Decrepitation, heat expansion rupturing overlying rock, water vapor locked in crystals bursting paths to the biosphere, and so on, are listed as reasons for a shift away from deep bedded salt. The alternatives being tested at considerable cost are basalt, shale and granite. My opinions on these alternatives would be overshadowed by your better judgments, so I will leave it at that. However, I would like you to know what Sandia Laboratory has included in one of their reports:

For many years, geologic scientists have been studying various kinds of formations in the earth's crust to test their assumptions that some formations indeed remain unchanged and undisturbed for millions of years. Their studies have provided the proof. Large underground salt deposits are examples of this type of geologic formation. Scientists reason that if radioactive wastes were placed within these formations, they would be, for all intents and purposes, gone forever, or at least isolated long enough for the radioactivity to have been dissipated.

If that is the case, what is the hold-up, why all the confusion, conflicts of opinion, a bewildered public and public uncertainty? The answer leads us full circle to my opening remark. We have a credibility gap between the scientists, the politician and his supporting public.

We are faced with two related problems in this situation. One is communications and the other is the lack of mutual confidence between the public, the energy industry and those in government concerned with energy development. I mentioned briefly the "rip off" view the public has of industry and indicated the befuddled communications existing in the nuclear waste area. Gaining mutual confidence, in my view, will require an organized effort from scientists and technologists, who are also capable speakers as well as writers, pounding away at the problem of letting people know; letting them know the sources of future energy and the cost/benefit approaches to alternatives from which they may select and exert influence. We are a long way from this realization and probably most scientists want nothing to do with it. However, one of your members writing a few years ago about the consumer and the producer proposed that if the bureaucrats would just get out of the way and let them negotiate, the two might find workable energy solutions. He then continued with the observation: "Before this can be done we shall have to develop mutual confidence that does not now exist. This and not discovery may well prove to be our biggest problem."

There were the words of Dr. Frank Conselman back in 1972 and which I support for 1978. It should also be recognized in the energy industry that no one in government is going to lift the weights of controls from their shoulders. Energy cuts across the entire spectrum of our society and no politician will let that vote potential escape the reviews of rates and cost controls. But what the scientists should be asking the public is: "What do you want, issues, or achievements?" The politician gives you issues, only industry can give you achievements. Maybe if we could get the two together, mutual confidence among all interested parties might result.

Let's look at the possibilities based on three basic principles. These are my personal beliefs: The public has fundamental right to know what is happening in the field of energy and be advised concerning what they can expect as energy resources in the future. The scientist has a fundamental responsibility to communicate scientific facts in a language that can be understood by those who want to understand. Science must become an independent element of national power. Today, it is recognized and widely accepted as a supporter of all the other elements; political, economical, industrial, psychological, and military. Science today must take its place alongside other others, not just serve a supporting role. Its inputs to the achievements of national objectives should be direct and must be weighed alongside all the others in the formulation of both foreign and domestic policy. Only the scientists can bring these beliefs to reality by direct entry into civic and governmental affairs just as those atomic scientists did in 1945. To do otherwise is to accept the growing situation as described by Dr. Goldberger, President of CalTech and Dr. Wiener, President of M.I.T. when they refer to government regulation, increased public mistrust of science and underfunding as dulling the sharp cutting edge of research which helped bring the nation to world pre-eminence in science and technology.

If you accept these basic tenets, there is one other simple acceptance required in order to proceed. When a scientist speaks publicly to a layman like me in terms that fully reflects his vision, he does not come across as simple-minded. On the other hand, if he satisfies his peers, he puts the public through a Ph.D. course which they are not prepared to undertake. The problem is removed by recognizing the real need to communicate.

I realize that such responsibility to communicate with society cannot be placed upon the scientists and
There are no means to do so. The responsibility must be accepted. As I see it, three things are necessary to gain this acceptance: organization, access and money. Agreed, with these three things everything is possible.

Organizations we already have. We have it here today, in this room, and in every field of science and nationwide. Some organizations, as you know, are worldwide. Members of my corporation, ANCA, Ltd. belong to over 70 separate organizations. In my judgment, there is no better way for the scientists and technologists to approach the political and civic elements than through his professional organization. I know you make many individual contacts, but I am speaking of an organized effort. Your organizations are a mark of credibility. There is nothing else like them or any substitute for them.

Access really amounts to a determination of targets. Who do we need to reach. The elite character of your professional organizations guarantees access. The problem is one of selection. Each of you probably has in mind an audience where influence is needed.

Obviously, the members of Congress are important. But often overlooked is the Congressional staff. These are the people who need a course in the natural resources of energy. They are the ones most in contact with the public. They answer the mail, in the practical sense. They form answers. They see the boss every day. They prepare him for committee meetings. They hold meetings in preparation for committee meetings. They write his speeches, draft mailings, etc. A Congressman might very well appreciate having his staff informed about the facts on energy in some manner not now being conducted.

Then, there are thousands of civic organizations engaged in public affairs who would welcome a credible response to the many questions today concerned with energy. Many of these are politically oriented and make themselves heard in the political arena. Perhaps the Senator or Representative might like to sponsor scientific exposure for his constituents. Extend your thoughts along these lines to State Officials and we will have widened our scope considerably.

Concerning money, my ideas are no more novel than yours and probably not as effective. However, we at ANCA make public representation a part of every contract if the client so desires. Many growing industries would rather take their developments before the public rather than have some environmentalist do it for them. You might also find this adjunct in your own contracting. This is done through community organizations who have genuine interest. We will not engage in public confrontations such as those called by DOE or IRG and the like, where anti-groups precede the schedule and assure a hostile audience. Another potential source of funds in energy industries. It would be interesting to know the sums of money spent this year by the energy industries in lobbying their interests in Congress. Given that figure we could measure cost effectiveness. What did they really gain or keep from losing per dollar? Then the question could be addressed whether in the long run we could do a better job, at less cost, if the public got behind the industry. Such approach might have saved the Public Service Company of New Hampshire part of the $419 million cost for the Seabrook delays or the $1,300 each residential consumer will now pay. We can also look to the DOE as a potential source of funding for truly scientific education of the public. They cannot run their own public information program for obvious reasons. But, they do fund now some organizational efforts related to utility rate hearings. In fact, the utility organization in Albuquerque through the State Attorney General's Office pursuant to the Energy Conservation and Production Act. The amount is around $22,000 this year. Oddly enough, this same organization is the most out-spoken group against nuclear wastes anywhere that we have, but I am not aware of the source of funds for the task. My real point is that I think there are ways to overcome the dollar obstacle to the role of the scientist in the politics of energy.

Organizations like yours joined with the many and other similar professional groups can become a viable, trusted and certainly a qualified force at work in the politics of energy. Such a need is overdue and vital. You can bring a truly joint image to the efforts of science and your fields do overlap and should not have artificial boundaries.

Some of you might be thinking that this approach is too idealistic to be practical. All I can say is that there is nothing else on the street today to alter the public beliefs and opinions in support of realistic energy developments over the next 20 years. Any other ideas are welcome because the situation is as serious as I have painted it with the nuclear waste example. The political scientist, Robert S. Gilmore, paints it this way:

The present pattern of energy and environmental policy-making fragmented as it is by specialized centers of decision-making power, appears quite unlikely to change until the preceptions of policy-makers and their supporting publics are drastically altered.

I will close with the observation that facts have a way of conflicting with beliefs and thus becoming irritating. However, facts are like a burr under the saddle blanket - concealed but not ignored for long. If the fact is that an energy shortage, like the burr, is concealed, then we need to warn the rider once again. If we are approaching a crisis, we should recall the Chinese Maxim: "Crisis is Opportunity" and join together in the politics of energy where the measures can surely be taken to avert disaster.

REFERENCES
4. Discussions with John W. McKiernan, Nuclear Waste Program, Division 4542, Sandia Laboratories; Mr. D. T. Schueler, Department of Energy, Albuquerque Operations Office, WIPP Project Office; Dr. David C. Williams (listed above), and attendance at the Governors' briefing on the Interagency Review Group Draft Report, presented by John O'Leary, Deputy Secretary of Energy.

EXIST AND COEXIST

by Robert D. Gunn, President
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Two forces shape much in contemporary American society - the federal government and American industry. These two forces are going to have to exist and coexist one way or another. The American Constitution was established 200 years ago to give the federal government the power to deal with problems of interstate trade, finances, and foreign trade.

Now, American corporate industry is, by and large, a child of 19th century technology. The original Constitution did not deal with corporate problems because they were not problems to the people who wrote the Constitution. We, the people in American industry must remember that American government is older than American industry. American government will endure, it is stable.

Much in 20th century America and its society, as we know it, is due to the productivity and inventiveness of American industry. Corporate capitalism produces cars, builds buildings and makes the investments necessary for society. A business can mobilize the resources to build a better car, but the resources of society are required to build a better road. Business and social challenges are complimentary and not competitive. The United States continues to need both better cars and better roads, therefore, American government and American industry are going to exist and coexist. It needs to be pointed out, though, that we do have problems -- but these problems can be dealt with.

Since the energy problems of 1973, strident, raucous and loud voices have been raised with people trying to put the blame on one another. But to solve problems - to place blame - is not too productive. Now is the time to lower voices and raise issues. It must be pointed out that the energy crisis is a long standing one. It is not going to be solved overnight the American people can deal with it, and will work with the results.

What are the dangers we face if we do not deal with our energy problems? I recently heard Saudi Arabia's Sheik Yamani state that the world will proceed through three periods. The first period - 1978 and 1979 - supply will exceed demand. The second period will last from 1979 to 1981 and will be a time of stability when the world supply of oil will equal world demand. The third period, beginning in 1981 and lasting for an indefinite period will be a time when the world demand for oil exceeds world supply. The Sheik points that the price of oil should now start rising - very gradually - so that by 1981 when the demand exceeds the supply, there will be no precipitous rise in price that would cause economic disruption for the world economy. Here we see never-ending vistas of inflation and economic instability.

The Congressional Office of Technology Assessment said in a recent study, that if we are not able to get the oil and gas we need in this country, we must be willing to accept a radical change in our lifestyles, together with a major recession with all the attendant personal tragedies and excessive unemployment. Here we can see the seeds of serious depression and possibly even revolution.

The Europeans generally are concerned that by 1985, the United States' voracious consumption of oil will be so great that the remainder of the industrialized world will be forced into a "no growth" economy and the underdeveloped nations will face economic and social disaster. Here we see worldwide cataclysm.

A recent article by Felipe deSignes, the Director of the United Nations Institute of Training and Research, stated that the problem of energy has moved very close to the center of a debate to structure the world economy into a new international economic order.

Will we live in a drastically altered American lifestyle? In a new world economic order? In slowing but steadily rising prices and inflation? There is no question that the future of the world economically, politically, socially and even philosophically may well depend on the abundance of energy resources - geology! In the United States today, we are facing our problems with pessimism. The static mentality, resulting from the no growth philosophy and from over regulation, perceives that our technology is running out -- that our technology is perverse -- that we are living with entropy and decay. You and I must be heard to dispel such negativism, so that scientifically logical conclusions can be reached.

Our regulators are mostly compassionate, public spirited people. They are people who want to do good - who see poverty, discrimination and excesses and who are determined to end them. Truly, it is difficult to criticize regulators trying to assure safer products or a cleaner environment. Admittedly, no two people can live together without some ground rules - and the larger the social group the more complex and detailed set of rules and regulations are necessary. It is not the inevitable need for regulation that so disturbs the business community in the country, it is the fact that regulation sometimes gets out of control. Regulation must be viewed as a potent and expensive medicine - the medicine must be administered very carefully, in limited doses and with full regard for all the adverse side effects - inflation, unemploy-
The Wyoming Geological Association Earth Science Bulletin
Vol. 11, No. 2 (June, 1978)

OBLIGATION, PROVIDES AN OPPORTUNITY FOR PUBLIC PARTICIPATION. EXPERTISE IS NOT REQUIRED, AND ABOUT THE ONLY RESTRICTION PLACED ON THE TESTIMONY IS A TIME LIMIT. THE HEARING BODY MAY OR MAY NOT RESPOND WITH QUESTIONS. THOSE INTERESTED IN PRESENTING STATEMENTS SHOULD ARRANGE TO HAVE THEIR NAME PLACED ON THE AGENDA BEYOND THE HEARING OFFICER WELL IN ADVANCE OF THE HEARING DATE. TO BE EFFECTIVE, ORAL STATEMENTS SHOULD BE ACCOMPANIED BY WRITTEN STATEMENTS THAT CAN BE DISTRIBUTED TO THE MEMBERS OF THE HEARING BODY, PREVIOUSLY TO THE TESTIMONY.

STATEMENTS SHOULD BEGIN WITH AN IDENTIFICATION OF THE AUTHOR, PLACE OF RESIDENCE, AND TITLE, POSITION, AND QUALIFICATIONS, IF THAT SEEMS APPROPRIATE. THE PARTICIPANT SHOULD THEN MAKE IT CLEAR THAT HE OR SHE SPEAKS AS A CONCERNED CITIZEN OR AS A SPOKESMAN REPRESENTATIVE OF A GROUP, ORGANIZATION, COMPANY, CORPORATION, OR AGENCY. THE THIRD PART OF THE STATEMENT IS A SECTION DESCRIBING THE BASIS FOR THE TESTIMONY AND THE DEGREE OF DIRECT INVOLVEMENT IN THE SUBJECT UNDER DISCUSSION.

OBVIOUSLY, THE GEOLOGICAL ASPECTS OF THE STATEMENT SHOULD BE WELL ORGANIZED, AND IN CLEAR, CONCISE TERMS THAT EMPHASIZE CAUSE AND EFFECT RELATIONSHIPS IN A MANNER EASILY UNDERSTOOD BY THE HEARING BODY. VOLUNTARY COMMENTS SUCH AS ADVICE, ATTEMPTS TO "EDUCATE" THE HEARING BODY, OR Hearsay EVIDENCE, ARE SELDOM EFFECTIVE. SIMILARLY, THERE IS LITTLE TO BE GAINED FROM ARGUING WITH STATEMENTS MADE BY OTHER PARTICIPANTS OR WITH MEMBERS OF THE HEARING BODY. STATE YOUR POSITION — STATE THE FACTS — DRAW YOUR CONCLUSIONS WITH OBJECTIVITY IN MIND, AND BE SEATED. IF THE HEARING BODY WANTS TO KNOW MORE, THEY WILL LET YOU KNOW.

ROLE OF THE PROFESSIONAL OR EXPERT WITNESS

UNDER OTHER CIRCUMSTANCES, GEOLOGISTS ARE OFTEN CALLED UPON TO PARTICIPATE AS KNOWLEDGABLE PROFESSIONALS OR AS EXPERT WITNESSES. THE PLANNING AND PRESENTATION OF THIS TYPE OF GEOLOGICAL TESTIMONY REQUIRE CONSIDERABLY MORE EFFORT AND PREPARATION.

ALL TOO OFTEN THE ROLE OF EXPERT IS MISINTERPRETED BY GEOLOGISTS WHO APPROACH THE EXERCISE IN A MORE INDEPENDENT MANNER WITH THE IDEA THAT THEY ARE SIMPLY BEING ASKED TO EXPLAIN DATA, RELATIONSHIPS, OR PHENOMENA FROM A GEOLOGIC POINT OF VIEW. THEY FAIL TO DISCUSS THE SUBJECT ADEQUATELY WITH THEIR ATTORNEY, AND TEND TO ASSUME THAT THEIR TESTIMONY WILL BE ACCEPTED WITHOUT QUESTION. THEY FAIL TO REALIZE THAT OTHER EXPERTS MAY ALSO BE INVOLVED WITH OTHER KINDS OF DATA, AND ENTIRELY DIFFERENT CONCEPTS. WITNESSES SHOULD ALSO RECOGNIZE THAT THE DECISIONS RENDERED AT THE CONCLUSION OF HEARINGS OR COURT SUITS ARE BASED ON CAUSE AND EFFECT RELATIONSHIPS THAT ARE MORE CLOSELY ALLIED WITH INTERPRETATIONS OF LAWS UNDER THE INFLUENCE OF SOUND ENGINEERING, ECONOMIC, SOCIAL, OR EVEN POLITICAL SUPPOSITIONS. IN MOST CASES GEOLOGICAL TESTIMONY PLAYS ONLY AN INDIRECT ROLE, I.E., GEOLOGY IS USED TO CORROBORATE OTHER MORE CRITICAL ASPECTS OF THE PROBLEM.

THERE IS NO COMPLETELY ACCEPTABLE DEFINITION FOR THE WORD "EXPERT." RATHER, THAN ARGUE THE POINT OF WHO IS, OR WHO IS NOT AN ACCEPTABLE EXPERT, HEARING BODIES TEND TO ACCEPT TESTIMONY FROM PERSONS WITH MINIMAL QUALIFICATIONS RATHER THAN TAKE THE CHANCE OF BEING ACCUSED LATER OF DENYING ADMISSION OF CERTAIN INFORMATION SIMPLY BECAUSE THEY REFUSED TO ACCEPT THE QUALIFICATIONS OF A PURPORTED EXPERT WITNESS. IN OTHER WORDS, THE HEARING BODY PROTECTS ITSELF AGAINST POSSIBLE ADMONISHMENT FROM THE COURTS BY LISTENING TO ALL OF THE EVIDENCE THAT MIGHT BE OFFERED.

THE LEGAL CONNOTATION OF AN EXPERT IS "EXPERTO CREDITE"; BELIEVE IN THE EXPERT, OR TRUST THE ONE WHO HAS HAD EXPERIENCE. IF THE WITNESS' QUALIFICATIONS AS AN EXPERT ARE ACCEPTED BY THE HEARING BODY, THEN THAT PERSON IS PRIVILEGED TO PRESENT WHATEVER INFORMATION HE OR SHE DEEMS PERTINENT WITH OR WITHOUT DOCUMENTATION. THE HEARING BODY ON THE OTHER HAND IS EXPECTED TO AT LEAST TAKE NOTE OF THE TESTIMONY.

GEOLOGISTS CAN LEARN A GREAT DEAL FROM EXPERT WITNESSES IN OTHER PROFESSIONS. ENGINEERS, FOR EXAMPLE, TEND TO TESTIFY IN A PRECISE AND FACTUAL MANNER WITH LITTLE OR NO INTERPRETATION. MEDICAL PRACTITIONERS PLACE EMPHASIS ON WHY ANALYSES WERE CONDUCTED THAT INFLUENCED THEIR FINAL DIAGNOSES. ENVIRONMENTAL EXPERTS STRESS METHODOLOGY — HOW

1 STATE GEOLOGIST AND EXECUTIVE DIRECTOR, GEOLOGICAL SURVEY OF WYOMING.

PRINCIPLES AND PRACTICE OF GEOLOGICAL TESTIMONY

by

Daniel N. Miller, Jr.*

INTRODUCTION

During the past twenty years the writer has worked in various capacities that involved industrial operations, academic institutions, public service, and government. Perhaps most noteworthy in this experience has been the realization that geologists could be much more effective than they are in dealing with non-geologic administrators, members of boards and commissions, and with assorted decision makers at the local, state, and federal levels. More often than not our effectiveness relates back to our individual personalities and the nature of our educational background and experiences, and to the types of employment or positions that we have had. Perhaps our greatest oversight is that we fail to give adequate consideration to these same factors in our listening audience, and to the procedural and administrative rules under which they function.

There are a number of different ways in which practicing geologists become involved with non-geologists; at the request of an employer, in support of a client, as a representative of a group or organization, or as an individual participating in public affairs. Whether you expect to become involved in these activities or not, you should at least understand the mechanisms that can make your professional participation more effective. Here are some additional comments on the principles and practices of geological testimony before non-geologic groups, and a few suggestions that can prove useful.

First, come to grips with the idea that geologists are subjectively, rather than objectively, oriented. We tend to home-in on one or two special types of data and attempt to explain our reasoning based on these limited sources. All too often we fail to mention other more conspicuous kinds of evidence that would help support our concepts. When dealing with non-geologic groups, always strive for maximum objectivity: be sure the facts are clear but place the emphasis on "why" specific data or relationships are important. By all means present concluding remarks in objective terms that anyone can relate to the particular problem at hand. Second, use simplified visual aids to supplement more complex word descriptions whenever practical; and third, stay on the subject, use appropriate terminology to suit the audience, and employ clear analogies when they can be helpful. These items are fundamental to all geologic presentations.

As you probably know, there have been many changes in recent years in state and federal laws that affect the activities of legislative and congressional committees, and the operating rules of boards and commissions. Many of these changes provide geologists with the opportunity to be heard. Perhaps the most suitable place to gain experience in these matters is in our own local communities, working with city and county administrators and planning groups. The experience gained will be of an informal nature but you will be among friends and have a chance to see how other kinds of reasoning and influence are brought to bear on problems of common interest. Whenever possible, attend formal hearings to become familiar with matters of procedure and the conditions under which testimony is given. If you can, determine why some presentations are so much more effective than others.

Public Hearings

It is important to recognize that there are several different kinds of hearing bodies, designed for different purposes, where geological input may be required. Perhaps the most straightforward of these are public hearings wherein a local, state, or federal agency, acting under a legal
samples were taken, who labeled and handled them, calculations regarding the final results of analyses, and extrapolations of the findings into more meaningful terms. Geologists can benefit by considering these techniques when planning testimony.

**Legislative or Congressional Committee Hearings**

Some governmental committees call upon geological witnesses frequently, and on short notice. Hearings of this type differ from other types of hearings in that the subject for discussion is usually poorly defined. The witness is normally called on to answer questions or to present expert opinion. There may or may not be time to prepare or present exhibits. It is not uncommon for a witness to leave the hearing room perplexed and in doubt about the need for expert testimony because he or she has no knowledge of what transpired before, or after, the presentation. When sufficient time and notice is given, about all the witness can do is review the available material and attempt to anticipate the type of information and exhibits that might be useful.

Procedures employed for hearing expert testimony at government committee hearings are similar to those described under public hearings except that they tend to be more structured and formal, and the questions asked by the legislators or congressmen are more specific. In addition, legislators and congressmen are prone to ask questions that go far beyond the witness' expertise. If at all possible avoid answering these questions by respectfully declining. The other committee members will ordinarily understand your reluctance and respect your judgment.

**Agency Board and Commission Hearings**

State agency board and commission hearings vary considerably both in terms of structure and procedure. In general, matters (dockets) under discussion are quite specific, and the hearing body includes persons that are knowledgeable on the subject.

Witnesses testifying before hearing bodies of this kind will ordinarily fall back on basic data for support; field measurements, drill hole data, porosity and permeability analyses, photography, test and production records, etc. It is customary for witnesses to develop the critical parts of their testimony in proper chronological order, discuss any transactions that took place, offer the best geological interpretation based on the facts as they are now, and end up with maps and cross-sections that are in effect the geological conclusions of the "expert." All the maps and other exhibits that an expert presents during the course of testimony should stand on their own documented merit in concert with the oral testimony that was given. If they don't a hearing body can only surmise that there are probably alternative interpretations from which other conclusions might be drawn. When there are expert geological witnesses appearing for the opposition you can be sure that other data and alternative conclusions will be called to the attention of the hearing body. More often than not, when the conclusions of experts differ, the attorneys will return to the points of controversy during cross-examination in an effort to clarify the testimony.

**Court Hearings**

In less controversial matters that eventually find their way into the courts, geological witnesses are sometimes used to explain the scientific or technical aspects of data. Although court cases do not ordinarily hinge on geological evidence, witnesses can offer testimony that helps to clarify matters for the benefit of the court. In most instances the witness is simply sworn in and questioned by the attorney who is attempting to establish findings of fact that are beneficial to the client.

Expert testimony involving engineering geology, and the legal aspects of geology as applied to engineering practice are quite another matter. More comprehensive treatment of this subject can be found in a variety of separate articles published by the Association of Professional Geological Scientists and in Engineering Geology Case Histories, No. 7, published by the Geological Society of America. (See Additional References list).

**PLANNING AND DEVELOPING TESTIMONY**

In the preliminary planning of your role as an expert witness, it is always best to consult with the legal representatives in charge of the hearing to determine the following:

a. The intended ultimate purpose of the hearing and the role that you are expected to play, either alone or in concert with other witnesses.

b. The proper procedures or rules with regard to testimony, exhibits or displays.

c. The conditions under which you will be expected to testify including the size of the hearing body and audience, and the facilities and equipment that will be available.

In principle, at least, the professional geologist is expected to testify as to the facts relating to any given situation, and to offer definitive conclusions derived from his or her interpretation of those facts. Witnesses should understand at the outset that other expert geologists will more than likely be present to offer opposing points of view. Anticipate that some of your facts and most of your conclusions will be challenged.

**Prior to Hearing**

As previously mentioned the type and nature of hearings vary widely; some are structured and formal with fixed procedures, others are not. Some hearings are designed to simply acquire statements, others are specifically designed to handle controversial issues. From the beginning, attempt to design documented testimony that will eventually appear in the record of the hearing and be completely acceptable in a court of law if the need should arise at some later date. Plan the testimony and exhibits with the help of a qualified attorney familiar with the practices of the examining body. Attempt to answer all of the attorney's specific questions to the best of your ability in order for counsel to develop as many findings of fact and conclusions of law as possible during the hearing. There is a fine line of distinction between offering too much data, and not enough data, a subject that should be thoroughly reviewed by both the geological witness and the attorney prior to the preparation of the exhibits.

All exhibits should be complete; carefully edited for accuracy, annotated for convenience, provided with a self-explanatory legend or caption, and identified with an author and date. Be sure that the exhibits are designed in an acceptable format, and that there are enough copies of key maps and exhibits for the hearing body, court reporter, and other interested parties.

**During the Hearing**

The circumstances under which witnesses are expected to present testimony differ markedly. With the many different kinds of boards, commissions, legislative and congressional committees, and courts, the witness should anticipate conditions and facilities that are less than adequate. Such fundamental facilities as table space, exhibit boards, and electrical outlets, or supplies like thumb tacks and tape are seldom available. The witness should anticipate these and other routine mechanical problems well in advance of hearing time and take whatever action is necessary to improve the situation.

A witness must accept the fact that an attorney, or some other form of legal representative, directs the presentation of expert testimony. The witness' qualifications are ordinarily presented to the hearing board, and a sworn oath may or may not be required at that time. The attorney will ordinarily make an opening statement explaining the nature of the client's involvement, distribute copies of exhibits to the hearing board for future reference, and then call the witnesses in whatever order seems most appropriate. Witnesses should then direct their full attention to the attorney. When responding to questions or offering testimony, the witness should take advantage of a public address system if available, and speak clearly and coherently while facing the hearing body. When offering key statements, or when supporting data is being discussed, the witness should refer to the documentation.
on the exhibits and be as specific as possible. Refrain from using non-descriptive expressions like, "this section, and across here." The attorney will advise the hearing body when direct testimony is concluded and then the hearing body may ask for further elaboration on certain points; and they may have specific questions. At this time the witness must guard against over-simplification for the sake of clarity, and must refrain from answering beyond the realm of his or her expertise. When the hearing body is satisfied, they will dismiss the witness and the attorney will move ahead to repeat the process with the next witness.

After the attorney has brought forth all direct testimony from the witnesses, the hearing board will turn its attention to the other attorneys who have also arranged to present testimony. The process is repeated normally until everyone has had an equal opportunity to present his case. Conflicting points of view are handled through cross-examination wherein an attorney may wish to question the testimony of a witness for the opposition. Equal opportunity is afforded to all, with cross-examination from both sides. An attorney may also request a second appearance of a witness for redirect in an effort to expand on the original testimony or to clarify a witness' response under cross-examination.

In controversial matters it is essential that expert witnesses retain their composure and coach their attorney when necessary during the cross-examination. As an expert you understand the subject and the opposition's testimony far better than the attorney. If necessary, ask for a brief recess to confer with the attorney. Whenever practical, a witness may ask the attorney to call for further redirect testimony; but in most cases you will find that the attorney is aware of the need and is about one and a half steps ahead of you.

**Following the Hearing**

In general, hearing bodies do not render decisions without further deliberation in their executive sessions, and even though some sort of decision is rendered it does not mean that this is the end of the matter.

In some cases involving contested decisions rendered by a hearing body there may be recourse through the courts based on a variety of legal mechanisms. If action of this type is taken, it is important that the witness obtain copies of the record, minutes, or other documents that pertain to his or her testimony and exhibits. From a practical standpoint witnesses should consult the attorney to determine whether or not they will be required to testify again. It is not uncommon for long periods of time to elapse between rescheduled hearings, or hearings and court action. When this occurs, and a second hearing is necessary, the witness must be careful to distinguish between the facts and conclusions as they were at the time of the original hearing and new facts or conclusions that have evolved since then.

**PRECAUTIONARY PROCEDURES**

After hearings have been completed and decisions reached, witnesses often develop the "what if" syndrome. Would the outcome have been different or more favorable if...? Well, the time to consider such matters is in the initial planning stages, not at the conclusion of the hearing. Here are a few precautionary steps that may help you avoid the more obvious busts:

1. Never agree to act as an expert witness unless you feel completely competent to act in this capacity and are comfortable with the circumstances involved. When testifying for an employer, or a client, the highest levels of professional and ethical conduct must be maintained at all times. If you have a monetary interest that can be influenced by the outcome of the hearing, make this fact known to the attorney at the outset.

2. No matter how elementary some information or data may seem, check it for absolute completeness and accuracy, and then check it again. Inaccuracies in base maps, boundary lines, well spots, and other data points, or even minor errors in arithmetic or calculations create confusion in the testimony. If specific measurements are critical, emphasize them clearly on the exhibits.

3. When assembling geological data and other information for presentation, check all possible sources. Few experiences are more embarrassing than to have an opposition witness come forth with information that is unknown to you. For example, if the angle of dip or faulting are important to the interpretation, check out all previously published data, file reports prepared by you or by others, aerial photography, and subsurface well log and engineering or geophysical data. If appropriate, examine the site personally. The use of up-to-date annotated photographs can be especially effective. In other words, explore and use every conceivable source of information that can prove helpful.

4. Attempt to maintain a neutral attitude throughout the hearing. Refrain from "pleading" the case because this tends to intimidate the opposition; and, during cross-examination offer only the information that is required to answer the specific questions.

5. And lastly, protect your credibility as an expert witness. Attorneys are expected to protect and defend their clients. They can, and do take either side of an argument depending on the circumstances. Expert witnesses on the other hand must develop lines of reasoning and reach conclusions based on the data at hand. If at a later date, on a separate matter, but utilizing essentially the same data, they reach different conclusions hearing bodies will question the witnesses' credibility.

In addition, go beyond the point of presenting testimony that can be just "understood"; design your statements and exhibits so that they cannot possibly be misunderstood. In the end it is the findings of fact and conclusions of law that determine the decisions rendered. Your job is to provide counsel with the kinds of information that make this possible.

**ADDITIONAL REFERENCES**

Various articles by Martin Van Couvering, and others, in the Newsletters of the Association of Professional Geological Scientists (previously AIPG).


Guidelines for Presentation of Technical Testimony, before the Wyoming Oil and Gas Conservation Commission, State Oil and Gas Supervisor, P.O. Box 2640, Casper, Wyoming.
ment and loss of productivity.

In a democracy of diffused powers such as we have, no regulations can be executed until the rele-
vant public and private leaders become involved. I
sincerely feel that this is finally happening on an ever
increasing scale. Our regulators are now seeking our
help. They know that our industry's motivation is not
pervasive, and they do actively seek our input. It is
not necessary for us to deal with these people in fear,
but I think it is important to deal with them with re-
spect.

You and I must offer our scientific expertise and
business knowledge. It is essential! Our input
should be offered discreetly and not emotionally.

Today there are three very important issues
which we have a responsibility to express. First,
we must assure the public that except for political
constraints, there is no reason why the world should
not have abundant supplies of hydrocarbon energy,
affordable, available for the future - the long
range future.

Second, we must encourage the reduction of oil
impacts. We can reduce the imbalance of payments
deficit and inflationary pressures by encouraging
conservation and increased domestic production.

Nearly all importing countries in the world have
promoted conservation by dramatically raising their prices,
whereas we have encouraged waste by keeping our
domestic crude at unrealistically low levels. Stern
conservation measures with effective teeth must be
thoroughly discussed and quickly implemented.

Our industry must spend an additional 50% more
on exploration and production if we are to maintain our
present producing levels. The OIL & GAS JOURNAL
forecasts that we will spend approximately $20 billion
this year - but nearly $30 billion is required to stop
the decline in producing capacity. Our industry's
cash flow is restricted because of rising costs and
punitive tax rulings, it is essential that cash flow
be increased by the elimination of the category of
"old" oil. This option is now being seriously con-
sidered by the Administration. Such financial stimula-
tion should be sufficient to actually increase domestic
producing capacity as well as aid in conservation by
discouraging excessive consumption. Constructive
dialogue with the Administration, in the next six
months, prior to the scheduled expiration of controls
on oil could be quite worthwhile.

The third issue deals with federal land with-
drawals. In the next few months it will be of para-
mount importance that we advise the public and
Congress that most of the oil that will be found in
our country's future will be found on Federal lands.
We must encourage expeditious availability of Federal
acreage - onshore and offshore. We must become
involved in the classification of acreage under the
Wilderness Lands Act of 1964. This Act dictated
that the RARE I Study take place. The acronym
RARE refers to Roadless Area Review and Evaluation.
Every roadless tract of Federal land of 5,000 acres or
more was to be classified for future use. In RARE I,
approximately nine million acres were classified as
wilderness but nearly two years ago the environmen-
talist groups established that this study was not
comprehensive enough, and thereby forced the
Forest Service to undertake the RARE II Study.
Approximately 62 million additional acres are now
under the process of evaluation. These recommenda-
tions will be submitted to Congress on January 28, 1979.
Of course, most of this acreage is in the western part
of the United States and most of its exists along the
Disturbed Belt where the most significant discoveries
in the United States in the last 20 years have been
found. The difficult thing about all this suddenly
urgent classification procedure is that our industry is
calmed in a dilemma. We are being asked to provide
data that we are forbidden to collect and the Forest
Service is being forced to analyze a resource trade-
off without knowing what resource with which it is
actually dealing. I can proudly report to you that
AAPG's Environmental Geology Committee and the
Rocky Mountain Association of Geologists have worked
long and hard and have provided significant volumes
in this land assessment. The industry and the country
as a whole will someday be very grateful to these
groups of people.

I have recently returned from Alaska where I met
the friendliest and most professionally frustrated geolo-
gists in the world. I couldn't help but feel that each
of them were very optimistic about their oil, gas and
mineral prospects -- prospects which may never be
explored. I came away with the feeling that Alaska is
potentially the most juicy piece of real estate in the
whole world.

Under Section 17 d (2) of the Alaska Native Claims
Settlement Act of 1971, the Federal government was
authorized to classify up to 80 million acres of wilder-
ness lands to be selected by December 18, 1978. In
May of this year under the sponsorship of Congressman
Morris Udall, 123 million acres were classified in H.R.
39. I find it unimaginable that such a valuable oil, gas &
mineral province could be withdrawn from exploration
at a time when the country needs it the most. How
frustrating! Why do the players in this game -- the
Alaska Coalition which is made up of the Sierra Club,
The Friends of the Earth and the United Auto Workers
attempt to prevent judicious development of these hydro-
carbon and mineral reserves when the very future of
our country hangs in the balance. I wish I could
understand.

Many environmentalists have stated that if our
mineral and energy situation becomes really serious,
these lands could be opened up for exploration. Our
point to these people is simply this: there is a long
time lag between exploration and actual production and
these people do not seem to appreciate this fact. On
land, from the time of discovery to on-line production,
over 5 years may be consumed and offshore this
period can include over 10 years.

H.R. 39 was rushed through the House of Represen-
tatives but the Senate version of this Bill is re-
ceiving serious and responsible consideration. Impor-
tant and realistic input is being offered by the Office
of Technology Assessment, the Department of Energy,
our Alaskan geological friends and the AAPG. The
Bill has been set aside and hopefully will be taken up
in the next session. Hopefully, the Bill that passes
the Senate will be realistic.

You and I as geologists are natural environmen-
talists. We know how land forms came to be and we
know that they can be preserved, in fact, be enhanced
with judicious efforts. We must make it known that we
are sufficiently sophisticated with our environment.
We must adhere to the multiple-use concept;
that is, where lands will be made available for
grazing, timber, hard mineral production, transporta-
tion and recreation, as well as the development of
petroleum production.

We can play a significant role in our country's
future by accepting our social responsibility of reciting
credible facts to the public, to the regulators and to
Congressmen.
THE ECONOMIC COSTS OF REGULATION
BY Richard W. Everett
Vice-President, Chase Manhattan Bank

It is a privilege to be asked to join you today to talk about government regulation. The subject is obviously important to you, or you would not devote an entire conference to it. As a business economist, it is important to me, too.

A persistently high rate of inflation is the dominating fact in our economy these days — and regulation contributes directly to inflation.

Viewed in a longer-range perspective, an inadequate rate of investment in efficient new plant and equipment constitutes a major flaw in our economic performance — and regulation often discourages investment or diverts it to unproductive uses.

Uncertainty is the enemy of sound decision-making in both business and government. There are few greater sources of uncertainty in the United States today than those associated with the regulatory process. It is usually slow, often unreasonable, sometimes inconsistent, frequently unpredictable, and almost always expensive.

I can't help noting that these remarks are beginning to take on a mildly intertemperate tone. Please accept this as an expression of sympathy for the unfortunate souls among you who actually become ensnared in the regulatory process. The sympathy is sincere. But my assignment today is not to commiserate with you, but rather to put your particular concerns in a broader context. To begin with, I do not intend to find fault with the mere fact of regulation.

* There are monopoly situations that exist for valid economic reasons, and these require regulation. The electric utilities, some aspects of gas utilities, and provision of telephone services are obvious examples.

* There are natural monopolies that must be regulated. Radio wave lengths and television channels have to be licensed in order to be useful.

* There are situations involving public safety that have to be regulated. You may well be among those who applaud the dismantling of the restrictive rules presided over by the Civil Aeronautics Board. But as one who flew into Albuquerque yesterday and is flying out tomorrow, I assure you that I, at least, want the process of flying to be very well regulated indeed.

* The world is so complex today that it is sometimes impossible for ordinary citizens to make informed choices without help. We may change their names and (I would like to believe) reorder their priorities and ways of doing business, but I suspect that we will always have such agencies as the FDA, the SEC, the Consumer Product Safety Board — and even OSHA.

* There can be no doubt that we have drastically degraded certain public goods -- air and water -- to the point where correction is necessary.

So, the question is not, in the broad sense, "do we need government regulation?" There is a series of questions: "When should we regulate?" "How should we go about regulating?" "How can we balance the good that regulation does against the harm that it does?" The importance of these questions, in turn, can be summed up in the answer to another question: "How much does regulation cost?" My colleagues in the Economics Group at the Chase spent a considerable amount of time this year trying to answer that question. And the answer, ladies and gentlemen, is that the cost is enormous.

We at Chase do not claim to have done any original research on the subject. What we did do was to draw very heavily on research done by others, pull the pieces together and bring them up to date. Fortunately, there is a large and growing body of material on this subject. We leaned especially heavily on work by Murray Weidenbaum, Director of the Center for Study of American Business of Washington University, his associate Robert Defina, and Edward Denison of the Brookings Institution. Some of Weidenbaum's material has been published by the American Enterprise Institute. It is worth noting the involvement of people from both the American Enterprise Institute and the Brookings Institution. Both sponsored the work of distinguished scholars -- with thoroughly different economic and social viewpoints. If they are both into this, it's got to be important.

And it is. We found that the American people paid slightly over $100 billion for the benefits conferred on us by government regulation in 1977. Perhaps I should not say "slightly" over $100 billion. As you may have noticed, economists like to deal in large numbers: the money in question, after all, is really their own. An old boss of mine used to say, "remember, Dick, every billion dollars counts." The exact figure we came up with was $103.1 billion.

The most obvious part of this expenditure of ours is actually the least. The regulators themselves come cheap, by modern standards. Public administration costs -- federal, state and local -- amounted to only $5 billion. Considering the admitted benefits of regulation, that's not an awful lot. It amounts to well under 1% of government spending. It may be a sleeper, though, it has grown by 100% in just the past five years.

By far the largest part of the $100 billion-plus cost of regulation is hidden within the operation of the private economy. Compliance costs came to $55 billion. Paperwork alone cost an estimated $25 billion, including the salaries paid for an estimated 143 million man-hours of work. Pollution control and abatement was the most expensive of the objectives of this spending, at $32 billion. Auto safety and pollution equipment cost an additional $72 billion, equal to $666 for each new car. That is a cost, by the way, that will surely go on rising. My friends in the machine tool business who supply the automobile industry tell me that their own prosperity is assured through 1985 because of the constant retooling required of Detroit to meet legislated mileage standards.

The final piece of the cost of regulation is entirely invisible, except to economists. It is what we call "opportunity cost." Opportunity costs represent the loss of output due to investing in non-productive rather than productive plant and equipment. These came to $13 billion in 1977. But the fact that you can't see these costs doesn't mean they can't hurt you. If the investment had been put to productive use, it would have raised our national productivity by about half of 1%. Largely for that reason, it would have cut about three-quarters of 1% from the rate of inflation.

One of my friends used to say that money may not be the most important thing in the world, but it certainly ranks far ahead of whatever it is that comes in third. Some of the costs of regulation simply cannot be measured in financial terms. How do you weigh erosion of your freedom to work as you wish, run your own business as you wish or buy what you wish? How does one take into account the potential loss to the people who would have been beneficiaries of the 13,000 pending pension plans that were terminated because of costs associated with the Pension Reform Act when it became law four years ago? How can we measure the
economic loss when capital investment projects are delayed or been prevented simply because the regulatory process is so slow and cumbersome? Our $100 billion-plus estimate makes no allowance for any of these costs. Earlier in these remarks I posed a series of questions. I would like to discuss these, briefly, and then close with some observations about the future.

When should we regulate? In principle, at least, the answer is obvious: only when there is no practical alternative. Regulation in almost any form puts sand in the gears of an economic mechanism that tends in its absence to perform admirably. Try exhortation -- try almost anything before direct regulation. The recently enacted gasguzzler tax is an example of one alternative. It is a fact that every large automobile sold in the United States imposes costs on all of us through the effect on demand for imported petroleum. That being so, we have a right to demand restitution in some form. In this case, we have elected to impose a direct, measurable cost on the car-buyer instead of the usually-hidden cost of direct regulation. And we have left the market place free to determine -- within severe limits, to be sure -- what automobiles we actually buy. Not perfect, but preferable.

If we must regulate, how should we go about it? I have two suggestions. First, whenever possible, establish goals but leave the economic system free to find the most appropriate route to achieving these goals. The usual approach, in Washington and elsewhere, is quite the opposite. The President's energy proposal in its original form -- you remember the moral equivalent of war -- was a grievous example. It was as if a few people, acting in haste, could foresee exactly how energy in each of its forms should be used for the next ten years. Enactment of that program would have imposed a nightmarish burden of cost on the public and a straitjacket on the economy. No one knows enough about the future to lay it out in such detail -- not even a good business economist. In other words, tell us what you want done Washington, and penalize us if we fail. But don't tell us how to do it.

Second, speed up the regulatory process. This is a free country, and every citizen has a right to be heard on just about anything, either directly or through representatives. But the regulatory process tends to be slow, at best. When it becomes subject to interpretation and delay at every step, the economic cost can become unconscionable. Who really gains, in an economic sense, when plans for a needed chemical plant are cancelled because the company involved, after years of effort, still can see no way out of the regulatory maze? You may be on either side of the nuclear power controversy. But when nuclear plants are built far later than they would have been, given orderly and prudently expeditious regulatory process, the cost has escalated. And you and I pay for it. I can see no reason why time schedules could not be established, including time limits on third party intervention. They would, of course, vary according to the complexity of the subject matter.

Finally, how can we balance the good that regulation does against the harm that it does? There are no doubt almost as many answers to that question as there are regulatory decisions. The trouble is that, with rare exceptions, we don't even try. We need to require an economic impact statement for every government regulation. Those who seek to direct our activities should be compelled to recognize the costs that they make the public pay. This is not a new idea. Resistance to it has been ferocious, for reasons it is not difficult to divine. Nevertheless, I thing that this approach has a better prospect than any other, if only because it can be embarrassingly difficult to argue against it in public. Furthermore, we now have an important friend in court. Listen to Alfred Kahn, Chairman of the Council on Wage and Price Stability. He was testifying to the House Banking Subcommittee on Economic Stabilization on November 22 of this year.

"The benefits of environmental protection and clean up and improved occupational and consumer products safety are real, so are the costs they impose on the economy. ... These regulations must be subjected to economic tests -- to a weighing of the costs against the benefits -- if they are to be rational." "There is absolutely no way in which rational decisions can be made about each proposed regulation that does not ask two questions: first, does it represent the lowest-cost possible means of achieving the desired result? And, second, do the benefits justify the sacrifices?"

That such standards can ever be imposed on the 100,000 men and women who staff the 41 Federal regulations agencies remains very much in doubt. Some of my colleagues believe that regulatory reform is resisted because too many of the regulators are people who simply don't believe in our economic system -- people who believe that important economic decisions should never be left at the marketplace. I suspect myself that the problem may be less maliogn, although no less difficult to solve. If you are a regulator, and you think your assignment is important because Congress says it is, and you work hard at it, you are likely to believe -- in all sincerity -- that you decisions are correct and in the public's interest. It follows that any new mechanism that might overturn those decisions is not in the nation's interest. So you resist. And, as one President after another has sorrowfully discovered, the bureaucracy can resist change with consummate skill.

Nonetheless, I do take some hope from Mr. Kahn's presence. His job is to moderate inflation. He understands how regulation contributes to inflation. He actually has a record of accomplishing deregulation -- an all-time peace time record, I imagine. And his boss understands a good deal about these matters, too. If we can get the decisions to the right people, we can, I believe, effect a change. We can't expect, of course, that regulations under control, we may never do so. I doubt that he would thank me for this, but I suggest that those of you who deal with regulators and regulations should make Mr. Kahn a focal point of your resistance when you think they are economically unreasonable. Mr. Kahn wants rational regulation. You, and others like you, are in a position to show him where he has it and where he does not. For reasons I have tried to make clear in my talk today, I hope you will try. If regulations were indeed made rational, our economy would soon be healthier and our nation more prosperous.

THE COERCIVE UTOPIANS: THEIR HIDDEN AGENDA
by H. Peter Metzger, Ph.D.
Public Service Company of Colorado

We are experiencing today what might be a truly unique development in all of human history. It has to do with the capture of the wealth-generating machine of society -- what we call the economy today -- by people who want to turn it off. The "spills system", that device which has been operating since before written history began, is just another way of saying who gets control of the wealth-
generating machine of any particular society. Whether it was one stone-age family killing off another for control of the primary wealth-generating machine in those days, which could have been the local flint mill, or one Pharaoh knocking off another to control the wealth-generating machine of ancient Egypt; the army and agriculture -- or today, when one American political party takes over the Presidency after years of domination by the other --, in all cases it was never a matter of destroying the wealth-generating machine of society, or even slowing it down, but rather just a question of gaining control of it in order to serve the new masters of power. Indeed, with the rare exception of the capture of a society by religious fanatics dedicated to myth and superstition, no changes in power structures throughout history have advocated the destruction, or indeed even the slowing down, of the wealth-generating machine of society. No one, after all, wants to kill the goose that lays the golden eggs. Not until now, anyway.

But today, however, everything is different. There are many people around today who want to slow down the wealth-generating machine of our society -- the economy -- for reasons based no less on myth and superstition than the religious fanatics of another time. These people have been around in great numbers since the 1960's, but only last year the "spoil system" operated to bring them to the seat of power.

There is great unease in Washington. Gone is the respect between rivals, and even the idea of "the loyal opposition" has disappeared. Carter's promise of a populist, egalitarian, informal, and open government has turned into a government of intolerant zealots, almost religious in the intensity of their beliefs.

As my friend Llewellyn King, publisher of "The Energy Daily" writes: "It came about because President Carter has introduced into public service a new kind of individual not formerly part of the Washington scene. They are the environmentalists, the consumer-advocates and others from what is loosely called the counter-culture. The strength of the new men and women who dot the Carter Administration and who came out of a gaggle of activist organizations is that they feel in possession of moral legitimacy..."

"The result is that those of us who earn our livings in Washington find that we are dealing now with government in which the servants who have matured in existing institutions and feel some responsibility, even a sense of apology, for the way in which these institutions are regarded; then there are the new activists who are unblighted by any sense of personal guilt or responsibility for the imperfections of the world in which they live. As a result they speak with firm voices and conduct themselves with a brashness that often offends."

Where They Are In Government

Well, I've told you what they are like. I'm going to tell you what they want and how they might get it, but first let me tell you where they are in government.

One campaign promise that Carter made good on was that, he "hoped to challenge (Ralph Nader) in the future for the role of top consumer advocate in the country." And that's just what happened. Accordingly, a great many unelected posts have been given to former public-interest lawyers, consumerists, civil-rights workers and especially environmental advocates. Though their numbers are less than 100 in all, the jobs they hold are very powerful: fourteen key White House assistants -- including the President's chief speechwriter -- come out of the public-interest movement. If the anti-energy activists had captured only White House posts it would have been serious enough but former anti-energy activists are now four Assistant Attorney Generals in the Department of Justice and are Assistant Secretaries in the Departments of Health, Education, and Welfare, Commerce, Interior, Agriculture and Housing and Urban Development. Public-interest advocates, or those who share their concerns, have been appointed to chair the Equal Employment Opportunity Commission, the National Highway Traffic Safety Administration, the Occupational Safety and Health Administration, ACTION and the Federal Trade Commission.

The environmentalists, as I've mentioned, have had the biggest victories; ranking jobs in the Environmental Protection Agency and the Department of the Interior have gone to men and women who have sued in the courts and lobbied on the Hill for conservation, protection of wildlife, and clean air and water. All three members of the Council on Environmental Quality come from their ranks. And a half a dozen of the most active critics of the Nixon-Ford policy on the exploration of the continental shelf are now Carter bureaucrats in various agencies.

Well, it might occur to you to think: "So what?" I mean, isn't this just the same old "spoil system" in operation, -- just another new old-boy network coming in with a new president? Well, the answer to that is Yes and No. Yes, that's how they got their jobs, and No, they haven't captured the wealth-generating machine just to use it for themselves. No -- for the first time in history, those in power have decided that the goose has layed enough golden eggs, and she's going to be retired. You may think that might be an exaggerated goal for a mere 100 people, even if the President himself is among that number, but consider how easy it is to stop something. Hundreds of people can put together a plan only to have it rejected or sent back for further study by a single key individual... and then studied again and then re-studied, etc.

Well, that's where they are. I call these people "Coercive Utopians". That they are utopians is self-evident, but that's no crime. After all, many of us are or were, at least, ourselves utopians. But, the difference between classic Utopians and these is that it isn't two lines of thought that their vision of tomorrow is so attractive that we ought to move their way by normal democratic means and convinced by their good example, they are doing it covertly and, therefore, coercively.

Now that's a serious charge, I know, but before I justify it, that is, before I tell you just how they are moving all of us to where they want us to go, by what I call their "hidden agenda", let me tell you just what they want, that is, what their vision of Utopia really is.

What They Want

Now the "what they want" answer isn't going to be very satisfying for you, because the Coercive Utopians themselves are not precise in just what it is they really want. But that's quite typical. Most Utopian movements throughout history have much more at stake tearing down existing order rather than being bothered by the grimy details of how to replace what they've destroyed. Our present Utopians are extreme in this regard, even when compared to similar movements before in history.

But what they all seem to agree upon is that they want a reduction of our per-capita energy con-
sumption by half. They also want the end of central power generating plants (even including solar stations if they are very large) in favor of small neighborhood power stations under local control. And, lastly, they want a shift from all fossil and nuclear fuels to solar energy. Beyond this, their philosophy gets very murky, particularly when it comes to what form of economy their Utopia will have. But whatever it is, it isn't capitalism or private ownership, that's for sure.

Take Nader's economic plans for example. Most people believe that Nader's main interest is consumer protection. I guess that was once the case, but he's moved well past that modest goal in the past ten years. His real objective, curiously unknown to most of his supporters, is the establishment of a new form of government: a "consumer-owned economy," he calls it. In an interview Nader said, "The legislative process is bankrupt, the initiative is the last bastion of democracy and now is the time to make fundamental changes in society, changing it to a consumer-owned economy." That means, according to Nader, that the economic system will be broken down into smaller parts responsible to local control. In an interview with Rolling Stone magazine, Nader elaborated: "The workers should run the manufacturing and the consumers should run the retail and (or) consumer cooperatives should own the manufacturing." He includes banks as well. He has a high opinion of China. "Compared to China we can't get anything done. China eradicates VD, we can't even stop it from increasing," he said.

But, even Nader realizes the immensity of the social upheaval which would take place if we cut our energy use by half. So he acknowledges that we will have to be forced into it by hard times. He says we will reduce our energy consumption by half "but first there has to be an intermediate stage of liberalization, and of economic bad times without novocaine," (as told to the New York Village Voice).

I think you're seeing my contention now, and it is this. I contend that by stopping every energy development in sight -- using delaying tactics in the courts -- the Naderites will in fact be responsible themselves for producing the very energy shortages they want and need to put into effect their vision of the future. They, not the bad guys, will take over in the ensuing chaos.

Nader's world will be a place where, "We are going to rediscover smallness," he told Rolling Stone. "If people get back to earth, they can grow their own gardens, they can listen to the birds, they can feel the wind across their cheeks, and they can watch the sun come up." Barry Commoner, the eloquent and influential ecologist who started the phosphate-in-detergent scare (which as a fake by the way), considers how he has come out of his political closet. In his new book "The Poverty of Power", he analyzes the energy crisis as due to our inefficient use of fuels. More work could be gotten from fuels which produce "high grade heat" by generating electricity first and then using the waste heat from the process ("low grade heat") to warm homes.

Such unrealistic suggestions are not unusual among Utopian scientists, by the way. They somehow can't get it through their heads that people don't behave like the molecules they are used to studying. People are not perfect spheres randomly moving through space. Instead, they are ornery and perverse and each has his own personal idea of Utopia. But let Commoner speak in his own words. At the end of "The Poverty of Power" he says: "Economists and other students of capitalism will recognize that the basic ideas I have discussed are among those first put forward by Karl Marx. All this suggests that it may be time to view the faults of the United States capitalist economic system from a vantage point of alternative -- to debate the relative merits of capitalism and socialism."

Having thus scared the pants off of us and backed us into his Marxist solution, he ignores the fact that not only have the socialist countries done no better than ourselves in solving the energy-environment problem, but the Soviets, Yugoslavia, Czechoslovakia, Hungary and Bulgaria have all turned in a big way to nuclear power, one of Commoner's pet hatreds. I guess what bothers me so much is not that they have far out political views. That, I figure, ought to be their own concern. But what I don't like is that they are forcing me into their political corner by creating a situation of economic chaos by stopping every energy operation in sight -- they have created an economic time-bomb that is already ticking away irreversibly so, I'm afraid.

How They're Going To Get Their Way

And now I'm at the point where I'm going to tell you how they're going to get their way. As I just mentioned, they are going to strangle our society by stopping everything with which we need to grow, and that is: water, coal and nuclear power, land use, and new industry. In the acknowledged economic chaos which must follow such a course they hope we will wake up to the inherent good sense of their Utopia and simply climb aboard their bandwagon; we will have, they figure, no alternative. That's why I call them Coercive Utopians.

The plan, what I call their "hidden agenda", has been in operation for some time, and great harm has already been done. At first their agenda wasn't so hidden. In 1976 they attempted to ban nuclear power at the ballot-box. Masquerading as initiatives for "safe" nuclear power, seven states voted the proposed legislation down by two-to-one margins. But even though the Coercive Utopians were crushed at the polls, that hasn't stopped them. First by delays in courts and now by delays from their new positions within government (in the name of review and evaluation), they have stopped the future life-blood of our economy. I know you don't notice anything different today, but when you stop power plants, water projects, land exploitation or new industry -- STOP, I said, not control wisely, but STOP cold -- when you stop those things, it doesn't feel today, because you don't need it today. But five to fifteen years down the line an economic cataclysm is in store for us that will make the Great Depression look like a tea party.

Well, maybe you don't believe that all those important things are stopped already by the Coercive Utopians. I'll show you; let's consider them all, starting with what Carter calls our "nuclear option."

The Nuclear Option

A year ago nuclear licensing was suspended in order to streamline the process and shorten the twelve year long licensing period. About halfway through this period, the New York Times, a not-exactly-pro-nuclear newspaper, said in an editorial: "The Carter planners have operated in such a hasty and even slapdash way that their draft legislation is itself now
in need of study and thorough review." The Times went on: "Citizen efforts to point out potential problems would be subsidized, but the administration's proposals are so loosely worded that even skilled observer's can't predict whether they will strengthen or weaken present licensing safeguards." A half-year later, in February, an analysis produced by three law professors from Columbia, Washington and Cornell Universities called Carter's new nuclear licensing plan "at best, wasteful and at worst, one which makes rational planning for energy needs impossible."

The Department of Energy, which, by the way, is the only department in the administration which is not in control of Carter-appointed Naderites, the DOE submitted its Nuclear Licensing Reform Bill to Congress on March 17, 1978. But its future looks dim as anti-nuclear zealots both in and out of government zero in on legislation they call "unacceptable" (that's the opinion of Nader's Congress Watch) and "badly conceived, badly drafted, badly motivated and a sell-out" (the opinion of the Natural Resources Defense Council).

As if that wasn't enough, there are "public interest" lawsuits today, by the score, designed to stop nuclear power. They range all the way from overt efforts to shut down all nuclear reactors immediately to the sneaky kind which, wolf-in-sheep's-clothing style, merely attempt to cripple nuclear economics so badly that nuclear becomes an unattractive investment for a utility.

An example of the latter is the Natural Resources Defense Council's (NRDC) new effort to forbid Duke Power its practice of shipping its spent nuclear fuel between its own plants for storage, even though that has been and still is a perfectly normal practice under Federal regulations. Should NRDC succeed it will be another example of the impossibility of rational energy planning under Federal regulatory guidelines whose rules constantly change with each new "public interest" pressure.

The Coal Option

Well, you might be saying, nuclear is controversial. Surely, coal should be well on its way to pulling our energy chestnuts out of the fire, particularly considering all the jawboning on coal done by President Carter. So, let's look at what the Administration calls our "coal option." By the way, that's our last "option" after nuclear. There are only two, you know.

Most people are astonished to learn that no new coal leasing will be permitted until at least 1981 and probably much, much later. Those who do know, and approve of that, like some of my friends in the press, point out that it's only new coal leases that are held up by complicated environmental policymaking. Plenty of old leases exist, they say. Well, it's true that there are 519 existing and unworked federal coal leases in the seven western states. But an examination of these made by Charles Margol of W. R. Grace & Co. shows that only five percent of these can be considered mineable -- thus it's no accident that 95 percent of those coal leases in existence still remain unworked. They just can't be worked!

Why are they unmineable? Because that 95 percent, those 491 leases, were all issued prior to 1970, and that means before the passage of over a dozen environmental policy acts and amendments, not to mention other Federal and State legislation, and a host of rules and regulations of numerous agencies of the federal government such as BLM, USGS, EPA, CEQ, MESA, the Corps of Engineers, and others. Also, many new rules and regulations are coming, and new agencies, such as the Office of Surface Mining (OSM) are just getting into business.

Obviously, the laws, rules and regulations applicable to coal mining today are considerably different from those which existed prior to 1970 when 95 percent of the existing leases were issued. And, as Margol put it, is "are any of the 95 percent of presently available but unworked federal leases legally mineable in 1978?" So, there's a squeeze-play for you. Old leases are of very doubtful value, and new leases just don't exist.

Why don't they exist? Well, that's one of the many remarkable stories coming out of Carter's Washington these days -- the story of a house divided against itself and the surrendering of Federal power to "public interest" anti-energy activists. Here's why we won't have any federal coal leasing until around 1985 (and that's my latest best estimate): On September 27, 1977, U. S. District Court Judge John Pratt ruled in favor of the Natural Resources Defense Council (NRDC), a private environmental-activist lawyers group, and against the U. S. Department of Interior (NRDC vs. Hughes). Interior must rewrite and greatly expand its already prepared Environmental Impact Statement (EIS) on coal leasing, thus freezing any new coal leases on Federal lands until lengthy new EIS requirements are fulfilled (estimated even by Leshy, see below, as not until 1981.)

The thing to keep in mind at all times is that NRDC vs. Hughes was definitely not an adversary proceeding. It was rather a formalizing of plans for long-range national coal development made between individuals of identical and rather extremist philosophy, with the total exclusion of the views of industry. For example, Joh Leshy is at least one Department of Interior lawyer who is preparing defendant Interior's EIS as demanded by plaintiff NRDC, who was actually employed until last year as the NRDC lawyer who prepared plaintiff NRDC's case against defendant Interior. In other words, Leshy is "defending" against the very case he created.

Also, representing Interior in its so-called "defense" against NRDC's suit was U. S. Justice Department Assistant Attorney General James Moorman, who took that post after leaving his job as Executive Director of the Sierra Club's legal defense fund. To add to the non-adversary nature of NRDC vs. Hughes, a Sierra Club attorney, Bruce Terris, took over as NRDC's attorney when Leshy left NRDC to work for defendant Interior. Thus, in NRDC vs. Hughes, we see a plaintiff's attorney Terris arguing "against" defendant's attorney Moorman when just year before both men were Sierra Club lawyers.

With such a cozy relationship, it's no wonder that the following remarkable development took place. Using the excuse of the laws as duty which would have been caused by a lengthy appeal, and the fact that NRDC was willing to "compromise", the defendant U. S. Department of Interior signed away its right of appeal in the case in return for plaintiff NRDC agreeing that a certain very limited amount of coal leasing could commence. In an agreement signed on February 25, 1978, Interior lawyers actually gave their former associates in NRDC an absolute veto on all future coal leasing permitted by Interior.

Thus, under the pretense of an adversary proceeding, NRDC and Sierra Club attorneys, some
still employed by NRDC and some now in the Interior Department, actually tried to move the authority to make national coal leasing policy from the government to a private environmentalist pressure group in what is clearly a filch-fam operation.

When the federal judge was presented with this amazing proposal he disallowed the most flagrant abuse of public trust, which was NRDC's veto privilege, but kept most of the rest of the restrictions on federal coal leasing which was demanded by NRDC as the "winner" of the lawsuit.

Ex-NRDCer Leshy's ideological-conflict-of-interest in defending against the very case he created became so notorious that he had to exclude himself from the case publically, and so filed that intention in an affidavit in federal court. But when lawyer Robert Uram who represented the Department of Interior in the meetings which hammered out the negotiated settlement with NRDC was asked who his boss was in Interior, he replied, "John Leshy."

Furthermore, the negotiated settlement was reached in secret sessions between Interior and NRDC but excluding Utah Power and Light, the only non-environmentalist party to the case prior to the Judge's ruling to accept the settlement. In vain, Utah Power and Light petitioned the appeals court to bar District Judge Pratt from accepting the NRDC-Interior private agreement, but its request was denied.

The final result of the negotiated settlement between NRDC and Interior was accepted by the court on June 14, 1978. It "favors" deep mining rather than surface mining, looks with "disfavor" on operations that are "environmentally sensitive" like valley floors, and favors operations that don't require "additional transportation facilities, industrial development or water storage or supply systems."

Naturally, the national effort to double our coal production by 1985 is now a joke, hopelessly hamstrung by such vague restrictions, particularly since these key decisions will be made secretly, within the Department of Interior, by individuals whose motives regarding increasing coal production are suspect, to say the least, on the basis of the above evidence.

Not surprisingly, then, only seven federal leases have been released since June (after a long period of no leases at all).

Water

Okay, how about water development. Out here in the West, we're all familiar with Carter's eighteen dam "hit list". What you might not know is that it was prepared by Kathy Fletcher who, before she became one of Carter's fourteen White House environmentalists, was a professional environmentalist-activist out here in Colorado.

Carter took a lot of flak on that "hit list", so everybody went back to their drawing boards to create -- you guessed it -- a Water Policy Review. Well, only last March a suit barred Interior from sending any water policy recommendations to Carter until a long series of hearings and impact statements are prepared, adding at least another two years before any new water development policy is even announced.

Since the bottom of the barrel of legitimate environmental issues has long been scraped clean, the environmentalist industry has time to look ahead. So, even though Carter's water policies won't be issued for some time, the pressure continues. In an admittedly tactical maneuver, twenty-four environmental groups called a Washington press conference in March vowing political retribution if Carter's final water policy for the West is not to their liking.

Let me tell you two short stories of how the anti-growth Carterite appointees handle water in my area. Colorado's experience is typical of the entire nation. Each story features the sabotage, by a single man, of a giant water project already funded and voted on by the people. Each story even has its own "endangered species red-herring."

The first story is about the Fryingpan-Arkansas water diversion project which will supply supplemental water for one-half million people in southeastern Colorado. First on the drawing boards twenty-five years ago, the project has spent $325 million and is almost completed. In June of this year, like a bolt from the blue, came a "legal opinion" by Leo M. Krulitz, Solicitor of the U. S. Department of Interior. Krulitz alone, and, reportedly on the strength of the request of a single private citizen from Aspen, and without consultation with Colorado state officials, decided that the Fryingpan-Arkansas project will be shut down until specific new Congressional legislation is created. Naturally, the process could take many years. Not surprisingly, therefore, Krulitz's action was regarded by Fryingpan officials as "a complete distortion, wholly unsupportable, completely lacking in background," according to Fryingpan's legal adviser, attorney Charles Belse. "Incredible, unbelievable!"

said Felix Sparks, director of Colorado’s Water Conservation Board, who regards Krulitz more candidly as "that pip-squeak" according to Denver's morning papers.

Oh, yes, there's always that "endangered red-herring". In this case Interior's U. S. Fish and Wildlife Service found one, just like they always do. Here it's an endangered species of cutthroat trout which will predictably throw yet another Federal monkey wrench in the way of this almost completed massive project.

Now our other project is not so large and not as well along as Fryingpan-Arkansas. But the Federal obstructionist delays by another Carter appointee have caused the cost of the Foothills Water Treatment Plant for Denver to go from $73 million to $135 million.

Here's a case where all the funds were voted on or earned by the Denver Water Board already, the plant was approved by the voters in 1973, 95 percent of the land and all the water is already owned by the Water Board, and it was thought that all the necessary Environmental Impact Statements had been filed.

Again, out of the blue, there came a Carter appointee. He is a democrat whose only qualification for office seems to be that he and his policies were rejected by the voters when he made a try for Congress in 1972, and again in 1974 by his party when he finished last in a field of 5 contenders for the party's U. S. Senate nominee.

This man, like so many others who are, from the voter's point of view at least, "certified rejects", was appointed nonetheless as our regional EPA director. Right off, he proceeded to institute his very rejected policies anyway, a perfect example of why I call these people Coercive Utopians. They force upon us their vision of the future even though it, and they, have been rejected by the voters.

Merson announced publicly and often that he is anti-growth and claimed that since another water treatment plant would add to growth and, therefore, to more pollution in Denver, he was going to stop Foothills dead. He would do so in his new capacity as regional EPA director using the 30 acres of federal land involved in the 630 acre project as his lever.

The "endangered red-herring" was revived again.

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This time it was the "Montana Skipper", a butterfly which was said to be endangered by the construction of the new water treatment plant.

A kind of "conscious parallelism" then appeared. I just learned that the phrase "conscious parallelism" used by government anti-trust lawyers seems to mean conspiracy, but they don't want to use the word. Anyway, call it what you think it is, a "conscious parallelism" appeared between environmentalists in and out of government that we have seen more and more lately. While EPA was trying hard to kill the project in Denver, six large private environmental pressure groups filed suit against EPA in Washington attempting to force the government to do what it was doing anyway, stop Foothills, and using the identical arguments to boot.

The project now sits just where the Coercive Utopians want it to be. In limbo, at the beginning of a long and expensive court battle that seeks not to resolve the issue but to kill the project by delaying it to death.

Land Use

Well, water development looks like it's shut off for awhile; how about federal land use? How have they stopped federal land development? Enter the notorious RARE II.

Again, in the name of review, the Department of Interior has withdrawn 68 million acres of federal land from development of any kind until it can be decided whether to give it "wilderness" status or not, this despite the fact that this exact review has been going on for fifteen years already.

RARE II, by the way, stands for Roadless Area Review and Evaluation (second time around), and agricultural roads are not considered roads. That's why the U. S. Department of Interior just denied Sierra Pacific Power Company a right-of-way for a transmission line across northern Nevada. . . . It would go across federal land that is -- you guessed it -- "under study" for wilderness classification. The route picked for Sierra Pacific by Interior adds 74 miles of wires and towers to the original plan denied by the wilderness lobby in Interior. I'll explain what I mean by "wilderness lobby" later.

To add insult to injury, the land "under study" almost certainly will never be declared "Wilderness area." Since that particular "roadless area" is criss-crossed with agricultural roads which in many instances can be travelled at 50 miles per hour. What, then, could be the motive of the "wilderness lobby"?

As an almost aside, 40 percent of the land locked up by RARE II is considered by the Department of Energy as of "major interest" for energy development. Drilling for oil and gas is now -- and very suddenly -- prohibited on millions of acres of, for just one example, the Overthrust Belt estimated to contain four billion barrels of oil and fourteen trillion cubic feet of natural gas -- all that drilling is stopped until Interior decided what will and what won't be wilderness. And "deciding" can take all the time in the world.

Lumbermen are also just waking up to the fact that RARE II is going to put some of them out of business. It's not their fault though. Lumber, oil and gas and all other affected operators were deliberately not informed by Interior of the series of "workshops" the government held last summer to get "public" input about what lands should be included in RARE II. Evidently, business isn't "public". A spokesman for the Denver-based Federal Timber Purchasers Association said of the U. S. Forest Service, "I think they notified the Sierra Club and just about nobody else this time." That turned out to be exactly what happened, believe it or not.

No surprise then, that mills which depend upon natural forest timber like Kalibab in Eagle, Colorado are threatened with having to close down. The Forest Service estimates a potential 78 million board feet timber harvest in Kalibab's area but plans to limit the 1978 sale to 11 million and the 1979 sale to 10.8 million board feet. The reason given by the Forest Service for its suddenly lowered harvesting limits, according to Representative Jim Johnson, R-Colo., include withdrawal of the wilderness study area for another national study of future uses of the forests. The whole thing seems fantastic, doesn't it -- I mean how could any government be that dumb?

Well, the answer I put to you is that they're not dumb. We're the dumb ones. We haven't realized until now that Carter's people simply have something else in mind. It is to stop all development on federal lands by using endless studying as the excuse. How do I know? The same logic is evident everywhere but you decide for yourself. But you ought to know something about what I called the "wilderness lobby" in Washington.

The government's director for the RARE II inventory is Carter appointee George Davis of the U. S. Forest Service. Just before Davis entered the government, he was executive director of the Wilderness Society.

Furthermore, it's expected that Davis' job in getting wilderness-extremists' views cast into the concrete of the final RARE II report will be easy, considering that the final RARE II responsibility belongs to M. Rupert Culver, now Assistant Secretary of Agriculture, but before Carter appointed him to that job, he was, like Davis, also a high official in the Wilderness Society. Doesn't that remind you of the other example of "conscious parallelism"?

There is but one small hint of a return to reason. In response to the many millions of dollars spent yearly to stop growth by the so-called "public interest" law firms (like NRDC, the Environmental Defense Fund the Sierra Club Legal Defense Fund or the Center for Law and Social Policy), there has been, inevitably, a reaction. Even before the pendulum had reached the upper limit of its leftward arc, there are signs of a move in the opposite direction.

Seven regional litigating centers, all under an umbrella organization called the National Legal Center for the Public Interest, have been created, thus breaking the Coercive Utopians' monopoly on the "public interest" concept.

For example, our local center, the Mountain States Legal Foundation, (MSLF) is dedicated, in its own words, to:

1. Counterbalance those who use our judicial system to restrict economic growth.

2. Defend individuals and the private sector from illegal and excessive bureaucratic regulation.

Less than a month ago, the Mountain States Legal Foundation challenged the right of the federal bureaucracy in using the RARE II level to deny public use and access to federal lands and resources, without the approval of Congress, in a lawsuit filed in a Wyoming Federal District Court on September 11, 1978.

The MSLF complaint "challenges the authority of the Secretaries and their bureaucracies to set aside and
manage these lands or wildernesses without the approval of Congress "as required by the Federal Land Policy and Management Act of 1976," according to James G. Watt, MSLF President.

So far, it's a David and Goliath battle, but that's how they started too. Only they had it a little easier because when the other side was little David and we were Goliath, we were asleep.

Industry

Now, let's take a look at the last thing I mentioned that I say they've stopped and that's new industry. I can't resist commenting that with coal, nuclear, water and federal land development stopped, we won't have to worry about new industry, because there won't be any.

Consider this: John R. Quarles, Jr., was the deputy administrator of the Environmental Protection Agency in the Ford Administration. In criticizing the Carter EPA's need to achieve the air quality amendments to the Clean Air Act provide that in any area where the air quality standards have not been fully attained (that means Denver and most cities), no new industrial plant can be built after July 1, 1979, unless the state has adopted the Environmental Protection Agency has approved an air pollution control plan that will assure full compliance by the end of 1982."

Quarles says: "This provision, like a loose cannon on a pitching deck, threatens a path of destruction. The new law is likely to stop construction of new plants or plant expansions in heavy industries such as steel, rubber, cement, minerals processing or chemicals in many of the largest cities and most industrialized areas throughout the Great Lakes and Northeastern regions of the country. It probably will prevent any expansion after 1979 of the petroleum and petrochemical industries in Southern California, and it may have similar effects on the Gulf Coast in Texas and the East Coast from Virginia to Maine.

"The new law allows no leeway. If the plan is not finished and approved -- no matter why -- the sanctions apply automatically. If a state agency lacks adequate manpower; if a governor opposes one part of the program; if EPA rejects a plan for technical or procedural defects; if anyone ties up the new plan in litigation, or if for any other reason the deadline is missed, then federal law will prohibit construction of new plants with unforgiving finality. There is no discretion not to enforce the law. And any citizen can delay the plan by filing a lawsuit."

"The use of this radical sanction reflects a desperate gamble, hoping that the threat of economic calamity will bludgeon states and localities into adopting whatever measures EPA imposes against them to meet the air quality standards, even though the time to develop plans is inadequate and in a few instances such measures might be beyond all bounds of reason." End of Quarles' quote.

The first big casualty of the 1977 Amendments to the Clean Air Act found EPA's Coercive Utopian Alan Merson again in the act. He stopped construction of two 700 megawatt mine-mouth coal fired power plants in Colstrip, Montana. His reason? The Northern Cheyenne Indians live nearby and an extremely suspicious EPA computer-generated air model predicted that on some days each year EPA air standards would be violated.

Merson said that Congress wanted to guarantee the Indians "some self-determination over their lives and give them the right to clean air. Economics in a sense becomes irrelevant," Merson explained, according to the Denver Post.

Now, if Alan Merson were here he would probably say that EPA hasn't closed down industry at all; that there is a perfectly easy way for new industry to build new plants. It's called "offset", and it amounts to a pollution trade-off.

EPA's position is that industry is free to build new plants if industry can convince EPA that some existing facility, which pollutes though is in compliance with EPA standards, will voluntarily reduce its pollution by an amount such that the combined pollution of both plants together, the retrofit old plant and the new plant, will be less than the presently legal pollution produced by the existing plant as it is. I repeat, it's called "offset".

Now that kind of argument, the kind that appeals to Utopians who have no feeling whatever for how things actually work out in the real world, is what we are facing. Must emphasized is that what I will present to you now is a so-called "success" of the offset plan.

A dilemma was created when Alaskan crude oil could not get to the energy hungry East and couldn't be consumed in oil-rich California. So Standard Oil of Ohio (Sohio) came up with a brilliant solution in 1974; to buy 800 miles of an old pipeline that was used to carry natural gas from Texas to California and convert it to pump oil in the opposite direction to Midland, Texas and then to the refineries nearby. Sohio would then feed the converted pipeline from a new marine terminal which would offload Alaskan oil from tankers at Long Beach. The oil terminal operation would cost Sohio a half-billion dollars. Sound simple? Not so. Sohio could go ahead only if it could create, by negotiation with other industries that were polluting at legal levels, a situation whereby building their new terminal would more than offset the pollution that it would create.

Here's the deal: Sohio has to pay $78 million for the construction and fifteen-year maintenance of a new scrubber for a Southern California Edison smokestack, emissions from which are currently in full compliance with the law. Also, Sohio must pay another $5 million to thirteen local dry cleaners to help them clean their hydrocarbon emissions further, and they too are presently in compliance with California strict air pollution law.

In this "procedural nightmare", as it's been called, Sohio still needs more than 700 federal, state and local permits and a favorable outcome from a public referendum in November at Long Beach to permit the city to lease space to Sohio for its terminal. Even if all goes well, which is unlikely, it will have taken from 1974 until at least 1981 before Sohio's transported Alaskan oil will flow from California to Texas. But more importantly, consider that Sohio's offset deal has just about used up any real potential for future industrial growth in that area.

Environmental Zealots Gone Out Of Control

Well, Carter's zealots seemed to have finished off most of America... what's left? Why the rest of the world of course.

Now if you wanted to destroy America and you'd already stopped energy, water, natural resource development and new industry, what would you strike out at next? How about the U. S. dollar? And to increase our balance of payments deficit is the way. Our balance of payments, unfavorable by almost $30 billion annually, is supposed to be because we are
shameless gluttons for imported oil, so Carter says. But that's the kind of deliberate misrepresentation I'd expect from an ideologue who aspires to out-Nader Nader. You don't have to be President to realize that Germany and Japan are economically healthy as hell, but they both import far greater relative quantities of oil than we do. Then how come we're in such trouble, and they're not? It's because we don't export much and our export decline every year. You don't have to be President to realize that if our share of the world's export market remained exactly what it was in 1980, instead of declining since then, our balance of payments deficit would be changed to an even larger surplus (about $31 billion, in the black).

Some call it "environmental imperialism," and Harper's calls it "exporting pettifoggery." What you'd do is attack the same bureaucratic hobbles to our export business that you've stuck so successfully on to our domestic economy. You would demand that the requirements of the National Environmental Policy Act and all of its attendant Environmental Impact Statements, hearings and delays be applied to the foreign countries that want to buy from us. Sounds fantastic, doesn't it? Consider this: The deciding factor in a major foreign sale is often speed. Remember that America no longer has an exclusive advantage over foreign competition in manufacturing or technology. Required American Export-Import Bank financing is now usually arranged in a matter of weeks. But Environmental Impact Statements delay projects by 31 months, says the General Accounting Office.

So, a series of lawsuits have been filed by environmental organizations which seek to force all federal agencies dealing with foreign development to meet National Environmental Policy Act impact statement requirements. Here are some representative cases:

* A federal judge in Washington, DC has twice enjoined the Federal Highway Administration from further work on the 250-mile Darien Gap Highway through Panama and Columbia on grounds that its Environmental Impact Statement was greatly deficient. (FHA is financing two-thirds of the highway's cost.)
* The anti-growth, anti-business Natural Resources Defense Council (NRDC) is seeking a court order that the American Export-Import Bank must comply with the requirements of NEPA. The Bank is a U.S. agency which finances and insures exports of U.S. equipment and services. All suits complain about the impacts of equipment used for producing offshore oil, generating nuclear power, constructing railroads and highways, building industrial plants, clearing forests, and filling wetlands. Among the projects cited in some suits are a 400-mile railroad in central Gabon and a 650-mile transmission line in southern Zaire, both of which would disrupt tropical forest ecosystems, endanger scientifically valuable species and other wildlife, and induce damaging development.

My favorite for a new high in arrogance is this one: Environmentalists have stopped a loan to Indonesia for the purchase of 24 dredges for reclaiming 2.2 million acres of tidal wetlands and mangrove forest on the coasts of Sumatra and Killimanjar (location: Borneo). The purpose is to grow rice and other crops for human beings. The suit, however, points to the dangers of siltation, destruction to fisheries and the loss of wildlife.

Like the NRDC, the President's Council on Environmental Quality (CEQ) is also demanding the same control in broadening Environmental Impact Statements to cover the globe. Specifically, their proposed requirements would force all federal agencies to assess the environmental impact in all foreign countries of major federal actions abroad.

These rules would apply to nuclear export licenses, aid projects, and even American Export-Import Bank loans (especially for foreign nuclear projects). If an agency decided its action did not require an environmental impact statement, it could be taken to court just as with domestic environmental statements. Imagine the effects of this on foreign trade with the U.S. Once a sovereign state has decided it wanted a project in its country, it would have to comply with our National Environmental Policy Act as a condition for trading with us. So, by requiring of our customers an intolerable and downright offensive burden not demanded by other trading nations, we might as well say goodbye to most of our export business.

Why is CEQ anxious to establish these new rules? Interesting that you should ask. The following facts will remind you of that pseudo-adversary, ideological conflict-of-interest business, known as "NRDC vs. Hughes, of which I spoke earlier."

* Gus Speth, one of the three members of CEQ was a founder of the anti-growth, anti-business Natural Resources Defense Council (NRDC), the "public interest" law firm, and worked for it before joining CEQ.
* It was the NRDC and the Sierra Club Legal Defense Fund which sued the American Export-Import Bank for failure to comply with the National Environmental Policy Act (NEPA). The Export-Import Bank's sin, according to the suit, was granting loans to foreign countries for American nuclear power plants without first filing an Environmental Impact Statement for the foreign country.
* The Justice Department assigned Assistant Attorney General James W. Moorman to represent the Export-Import Bank in the suit. By a strange coincidence, Mr. Moorman was previously the executive director of and an attorney for the Sierra Club's Legal Defense Fund before joining the Justice Department last year as a Carter appointee. Remember, he also "defended" the Department of Interior in the NRDC vs. Hughes case.

Continuing with that ideological conflict-of-interest of Mr. Moorman's, it was while he was executive director of the Sierra Club's Legal Defense Fund that the Sierra Club Fund filed its own suit against the AEC and the American Export-Import Bank to stop nuclear reactor exports. In fact, NRDC and the Sierra Club jointly sued the government ten times while Moorman was executive director and before he became a Carter appointee now "defending" the government against the NRDC, a case he clearly helped to create. Sound familiar?

* Even an examination of how Moorman handled the government's case against NRDC makes it clear where his loyalties really lie. Consider that when Moorman was with the Sierra Club he said that standing was "the greatest hurdle in a suit with the federal government." Standing means a legal potential to suffer injury, like -- why should an environmentalist in Manhattan represent crocodiles in Gabon or fish in the Phillipines?
So, quite logically, when NRDC first filed its suit to force the requirements of the National Environmental Policy Act on foreign countries, its standing to do so was challenged by the U. S. Justice Department then staffed by Ford appointees.

NRDC not only didn't have standing but it didn't know how to get it, according to a letter written to the U. S. Justice Department by Thomas B. Stoel, Jr. Stoel is NRDC's attorney and, by the way, also was co-counsel with Moorman in Moorman's Sierra Club days, in the suit that delayed the Alaska pipeline years ago.

But, NRDC's standing problem was solved neatly -- by the simple expedient of replacing the Ford appointees with the Carter Justice Department. Now, despite Stoel's remarkably weak justification of NRDC's standing, Justice Department's Moorman did a big favor for his current adversary and former partner and all the other Coercive Utopians that fear the ballot-box. Remember, the two of them are "adversaries" now, NRDC's Stoel and U. S. Department of Justice's Assis. Attorney General of the Lands and Natural Resources Division, James W. Moorman.

Anyway, Moorman withdrew the Ford appointees' challenge to NRDC's standing. Thus, in one blow, Moorman destroyed the "standing" hurdle, what, I repeat, he himself once described as "the greatest hurdle in a suit with the federal government", when, he, Moorman, was executive director of the Sierra Club's Legal Defense Fund.

There will be no more hurdles in NRDC's way, and won't be until ideological conflict-of-interest is some day regarded as just as dangerous as financial conflict-of-interest. I personally think it to be far, far more dangerous.

*Just like the secret out-of-court settlement he negotiated in NRDC vs. Hughes, Moorman attempted to reach an out-of-court settlement with the NRDC and just like the way Utah Power and Light was excluded then, Moorman tried to reach this settlement too, and likewise, without the Export-Import Bank's knowledge. Fortunately, however, the Mid-America Legal Foundation (a public interest law firm on the other side, like the Mountain States Legal Foundation), is an intervenor in the case and they blew the whistle. Presently, the case is not going as well as the NRDC would like. It seems clear then, that ex-NRDCer Speth of the CEQ wants to achieve the NRDC's objective without the risk of court action with another "sweetheart" arrangement, just like NRDC vs. Hughes, where lawyers on both sides have identical goals.

Well, now that some environmentalists are well fixed with government jobs, do they look out for their old buddies still out in the cold? You bet they do! EPA seems to be the recipient of the greatest number of lawyers from the two biggest environmental public interest law firms already mentioned NRDC and the Environmental Defense Fund. So, it can't be surprising to come across the following passage in an EPA document.

"When all else fails, citizen groups often carry their environmental struggles to the courts. Citizen law suits should not be undertaken lightly, however. They can be expensive and time consuming. And environmental law suits should never be undertaken without competent, experienced attorneys. For advice as to the names of lawyers in your vicinity who specialize in environmental law, consult the Natural Resources Defense Council, Inc., a public interest law firm, or the Environmental Defense Fund, an organization of lawyers and scientists," and that from a government document!

Do you still believe that environmental law firms really improve the environment? Consider what the Environmental Defense Fund is doing today to clean up the environment: Only last March EDF sued to stop construction on all 77 conventional power plants started in the U. S. since August 7, 1977. That was when the Clean Air Act Amendments became law. It seems that the Act requires the "best available pollution control technology" installed on each plant, and EDF claims that hearings were held to determine if this is the case.

What this meant is that utility rate-payers could have been paying billions of dollars in extra interest to cover the delays caused by slowing down those 77 plants. Those plants won't pollute less then they finally start-up; the hearing will just delay them, so they'll just come online later and cost a lot more. And all this would contribute to our inevitable economic collapse which I mentioned before, but EDF lost the suit fortunately.

And as if to advertise (unintentionally, of course) just how few legitimate environmental cases are left around to justify EDF's continued existence, it just brought another lawsuit. In the post-DDT age, when every insecticide is looked over by a dozen federal agencies before it can be used, EDF is suing the federal government to stop the use of Furriamicide against the invasion of fire ants into the South from Central America.

So, the next time you hear of an environmental lawsuit, ask yourself, "If won, is this suit going to improve the environment or is the lawsuit really designed to stop economic development and/or keep professional environmentalists employed?"

**Summary**

Well, I've told you what their idea of Utopia is, and here's how they will coerce us into accepting it. In the same way a $20 million complexity like an airliner can be taken over by a single terrorist with a Saturday Night Special, so can a small determined group of spoilers, delaying energy production across America, bring the whole country to its knees in only a few years.

Thus, newly radicalized environmental leaders are insuring that America will be even more dependent upon foreign sources for energy than ever before. So the anti-nuclear, anti-energy environmental issue is tailor-made for those who seek massive and rapid political change in an otherwise stable society.

And here's the bottom line: Conventional means to meet energy demands are discredited with scare tactics and denounced as morally unacceptable degradations of the environment. Then, when the shortages thus produced do finally occur, and massive unemployment and social disorder inevitably follow, then corporations, capitalism and representative democracy itself will be blamed by those vocal Coercive Utopians for problems that only Nader's "consumer owned economy" whatever that is, can solve.

**APGS ANNUAL BANQUET**

**AN APPROACH TO REGULATORY REFORM**

By Hon. Harrison H. Schmitt

United States Senator, New Mexico

I do wish there were some way in which in a very short period of time we could see a relief to the cost, the time and loss of motivation that come with Federal regulation. It is not going to happen in a short amount of time. As a matter of fact as we used
to say in the flying game, we are "well behind the power curve" right now. You have heard lots of horror stories today, and I am sure you know many more to tell. I am looking forward to seeing the transcripts so I can replenish my supply of horror stories about Federal regulation and its impact on the cost of doing business, the time it takes to do business and, maybe more critically now in many areas, on the motivation of people to even try. That is becoming as serious as the cost and time it takes. I am hearing those kind of horror stories more and more frequently.

Well, the basic problem legislatively, and must be solved, that most of the law today that we as Americans, whether we are in business or not, have to deal with is regulatory law. Most of what Congress does is consequential compared to what you have to deal with on a day-to-day basis or that anybody in this country has to deal with on a day-to-day basis. The Congress has gotten into a habit of passing enabling legislation which transfers law-making authority to some one and departments of government. And the cost of doing so is rising at the rate of something on the order of 15% or more annually. I am sure you heard today what that estimated cost is according to recent studies. For next fiscal year, it is something well over $100 billion. You can even take it up higher, depending on how you allocate cost. And that is for the private sector alone, and does not include the local government, state government and federal government of its own regulation. We are rapidly approaching a cost to the individual American man, woman and child of something in the order of $1,000 per year, just to handle federal regulations. Now again, that's a different kind of horror story, that's sort of a mega-horror story that is often hard to comprehend. It is easier to comprehend the specific examples that I am sure you exposed each other to today and we continue to do so.

My inclination after really realizing the depth of our regulatory problems in the course of the 1976 campaign, talking with New Mexicans, knowing it was there, but finally getting my own exposure to the horror stories that they had, whether it was mining, or ranching, business, education or just government itself, they were there. And I decided that it would be foolish for me to try to cover the whole waterfront when I got to Washington. In my first two years in every kind of legislation I knew that needed to be treated, I picked one of the most fundamental areas of legislation that was effecting the State of New Mexico, and obviously the whole country, and that was regulatory reform. So about 18 months ago, after a great deal of study of the issue and of the law, particularly the Administrative Procedure Act, I introduced a Bill that received a number, S2011 (many of you I think have already been exposed one way or another to that Bill) and began then to try to move that measure through the committee structure of the Congress. It was not only something that had to be done, but it was something to teach me how to do it better next time, for that and other forms of legislation.

Well, we spent about 16 months pushing and shoving and trying to find a subcommittee chairman who was sympathetic to this activity, so that we could get some hearings. The first subcommittee chairman I picked was Jim Allen of Alabama. He was sympathetic. However, the Panama Canal came along, and Jim was diverted, and unfortunately died soon after that issue was resolved, at least temporarily. And so I found, however, that Paul Laxalt of Nevada was very interested in this issue. Many of you know Paul, and know why. Obviously for many of the same reasons, New Mexico is interested. And Jim Abourquez, believe it or not was acquiescent because it was the subcommittee on Administrative Procedures that needed to hear this Bill within the Judiciary Committee. So with Paul's assistance and Jim Abourquez's acquiescence (since he was retiring and, by the way, moving to New Mexico for a few years) we were able to get three days of hearings on S2011. As a result of those hearings, a new Bill has been drafted and was introduced at the end of the last session and I will polish it up a little more and introduce it again next year.

What I want to do tonight is to tell you what we are trying to do with S2011, the son of S2011, and the grandson of S2011; and I use that because I can't remember the rest of the numbers. It took me six months to remember S2011. The basic approach is to give the Congress a period of time after the final promulgation of a regulation to review that regulation and its economic impact, its judicial impact and whether not it is the intent of the letter of the law before the regulation becomes law. The way we propose to do this is as follows. The basic administrative procedure for regulatory promulgation would not be changed significantly, except to require with the initial publication of the new regulation a preliminary Economic Impact Statement by the agency wishing to so promulgate a regulation. It would be the regulation and that statement that would be available for public comment during the comment period. Then the agency would be further required to submit the final regulation and a final Economic Impact Statement to the Congress when they are ready to start the "90 day clock" for Congressional action, if Congress chooses to act. That Economic Impact Statement would be reviewed by the General Accounting Office as an administrative arm essentially of a joint committee formed by members of both Houses. Originally, we had thought we would refer each regulation to a standing committee, but the State legislatures, who have been a tremendous help to us, strongly recommended against standing committee referral. They have found in their own experience that 34 state legislators have acted in one way or another in this matter of review. They recommended a joint committee because you avoid the internal biases either for or against an agency that a standing committee almost automatically develops. So the new Bill will call for the formation of a joint committee.

So the regulation and the Economic Impact Statement would be referred to the Congress for a period of 90 days. During that period of time either an individual Congressman or Senator or the joint committee itself could introduce resolutions of disapproval of the regulation. And if that resolution of disapproval was not reported out of the joint committee within 45 days, the an expedited procedure would take place so that the regulation still would have to be considered on the floor of whichever body the resolution was introduced. And if either body voted for that resolution of disapproval, that disapproval would not become law. It does not mean that the agency could not go back and try again, but that particular resolution, as worded would not become law. The only way that this could be circumvented, and this may sound a little complex and I will try to explain why we are considering doing it this way although it is not a final decision, is to have the other House that did not act. veto
the action of the House that voted to disapprove. The reason it may be necessary to have that complex procedure has two facets to it. One is that it is still constitutional, there is a major constitutional question about whether you can have a two-House veto and not have that veto signed by the President. That is a question of how you interpret Article I, Section 7 of the Constitution. On the other hand, there is a limited constitutional question about a one-House veto although I believe that that constitutional test can be met. There are something like 264 laws already in the books with some form of Congressional veto, many of which are one-House vetoes. The House has consistently over the last several years voted two to one in favor of one-House vetoes. The Senate has consistently avoided that issue until this last session of Congress when in one case they voted two to one against a one-House veto. (HUD regulations in that case). Why is the Senate so opposed? Well, it appears from my research among my colleagues, that they are opposed because they don't want the House to have the authority to do things the Senate and the House jointly have previously approved. A regulation only indirectly has been approved by the Congress, because the Umbrella Legislation was approved but the Senate generally doesn't want the House to be able to veto something that they said was okay for an agency to do. So we are exploring whether or not the veto of the veto would be an acceptable procedure; you still avoid the constitutional problem of both Houses acting in the same way on the same matter and therefore, the President having to get involved. I realize that this sound complex. We may find a better way to do it, but it looks like that may be the only compromise that is possible in the next few years for the House and Senate to agree on a one-house veto is for the other House to veto the veto.

Within this Bill we would also provide for a resolution of reconsideration of an existing regulation rather than require, as some states have, a complete recodification of existing regulations and an examination of their intent in the letter of the law and the economic impact. We would provide for the introduction of a resolution of reconsideration. If a resolution of reconsideration under an expedited procedure were approved, by either House, the agency then would have to see a regulation under the expedited procedure for Senate and House consideration. If you are, I am sure, many other details that might be of interest to you - if you are interested in this approach. Do not hesitate to correspond with me, and we will put you on our mailing list and send you copies of the Bill and other information necessary to evaluate it. But I think as near as I can tell after two years now in the Congress working very closely with people like Congressman LeVitaz of Georgia, Bill Archer, and others who have been very interested in this fundamental problem, I don't see any other way in which Congress can take control again in the making of law and still have the government operate in a very complex society where some regulation is obviously going to be necessary. If we can once again get Congress to take control then, I think, we are going to see the situation automatically improve, possibly without a great deal of Congressional action. That has been the experience of the States. As soon as some kind of review mechanism exists, the agencies begin to clean up their act - and very rapidly clean up their act. Whether they do or not, I think, it is something that has to be done and Congress is going to have to learn how to deal with approving law, or disapproving law, whatever the case may be, that is created by non-elected bureaucrats. This is our fundamental problem. Laws that are giving you most of your problems and that most of you have talked about during this session are laws that were created by people you had nothing to say about except other than through your vote for the President of the United States. And usually, that vote is seriously diluted by the distance between the President and the people that promulgate legislation. Now we are not just talking about the mining industry or the ranching industry or agriculture or government or banking, we are talking about our whole society now underneath a web of legislation, many of which you never heard of, and many more of which will appear during the 98th Congress - in spite of everything we try to do. There is though, I think, great encouragement in some of the things that I hear others are going to propose this year. On a piecemeal basis, we have undertaken a significant de-regulation of the airline industry where the government becomes more of a referee than a regulator and that the marketplace becomes the regulator and that obviously is what I believe in. There are rumors that some of our more liberally-oriented friends are interested in de-regulating the trucking industry. That's going to be a lot tougher problem. At least, I understand there is a Bill or two being drafted to try to do to the trucking industry what was done to the airline industry. I think they are going to find the de-regulation of the airlines was child's play compared to trying, in a piecemeal way, to de-regulate the trucking industry. We shall see. The attitude though is useful to me in trying to get the general approach through the Congress.

There also is most importantly, a ground-swell of discussion, of communication with the Congress about the fundamental problem that we face in regulation. Even the President has indicated he's interested in gaining control of the United States government. That in itself is encouraging. He has indicated that on several occasions over the last three years, and we continue to wish him well. But I am afraid it is in the area of regulatory control that it is going to take some specific Congressional action along some line and the only one I can find that really seems to make general sense is the one I prescribed to you. Let me say again that the cost of regulation is the fastest growing component of regulation. It is not yet the major single component of regulation, but it is the fastest growing component of inflation. The size of our federal deficit in all the direct and indirect ways in which it increases money supply without an increase in goods and services is still the fundamental pressure that we are all feeling. The cost of importing foreign energy at least a third more the cost of what we could produce it domestically is another major component of inflation. The loss of productivity because of a variety of problems, not the least of which is a lack of investment in private and public research and development for new technologies, is another major component of inflation; and of course, increases in payroll costs through tax and wage increases in another. But I submit to you that wages and prices unless in excess of the inflation rate by significant amounts are not nearly the contributor to inflation that they are being made out to be. Wage and price controls, whether mandatory or voluntary as with hospital cost controls or controls of that kind are treating the symptoms of the problem and not the basic problem. They go after the victim, literally, of the problems. The people who are having to live
with inflation are the ones you are asking to control it, and they have not control of it, because the five other things that I listed are not within the control of the people; and those are the fundamental push on inflation rates today. And so, although we must work, I hope we can work in a positive way on these other issues besides regulation in the next Congress. We certainly must get control of regulation, not only because it is the fastest growing contributor to inflation, but because it is on the verge in many sectors of our economy of stopping us dead in the water. And if you don't believe it can happen look at what happened to new plants in the nuclear industry. They stopped, and for only one reason - regulatory control. It is now the time frame that to construct a nuclear plant from beginning to end is beyond the ability of risk taking within the private sector. It can happen to you and whatever industry you are in. You know it as well as I do. It can happen very fast at the rate of which regulatory burden is increasing. So don't give up on it. Keep talking about it, keep helping us. There are those of us that are trying to get control of the monster in Washington; we need your comments, not only on the legislation that comes down the Pike, but any ideas you have that may help. We also need to be asked to help in fighting the detail problems whenever they occur. This is now to design legislation in order to fix a problem. So let me ask you. Many of you have been in touch with me on other occasions. We have talked on many other occasions. Let's continue to do that and let us continue to look for friends who can help us beat the problem.

Thank you very much Grover, all our distinguished guests at the head table, distinguished Honoree it is quite a career we have heard about tonight; and I hope that all of you will continue to make this organization in which I was privileged to talk to about five years ago, under a different name, I understand it is going to be that name -- I am a little confused. I am very happy to be a part of it in an indirect way, and I hope we can continue to associate.

THE BEN H. PARKER MEMORIAL MEDAL
TESTIMONIAL
by John T. Rouse

In recognition of his many contributions to the Association of Professional Geological Scientists and its forerunner, the AIPG, to geology and to mankind, we are honoring John T. Galey with the Ben H. Parker Memorial Medal.

John is a Charter Member of our Association. Immediately upon joining, he became a hard working member, as evidenced by his total commitment to committee work on which he has served and continues to serve, as well as offices to which he has been elected, such as first President of the Pennsylvania Section (1966); Advisory Board Delegate ('66 and '67); Executive Committee (1967), and National President in 1968. He did not hibernate after his presidential term expired but continued to contribute much to all of us as a member of the Policy Board (1969 through 1971); Legislative and Regulatory Committee (1976-78). He is always ready to provide expert testimony for the Association, geologist and industry, and has testified before federal committees in Washington.

And what are the other activities of this capable and personable man? He believed geology was a requisite for sound city planning. In 1971, he organized securing funding from the National Science Foundation, and chaired the President's Conference on Environmental Geology at Airlie House, Virginia. Here 55 geologists, architects, engineers, and planners worked two days in concentrated sessions, developing a comprehensive plan for a new town that was to reach a population of 300,000 in ten years.

The American Association of Petroleum Geologists honored John in 1974 with the Distinguished Service Award in recognition of his work to advance the goals of the AAPG. Largely through his efforts, the affiliated societies of Appalachian and East Coast areas were brought together as the Eastern Section of AAPG. He was its first President.

The Pennsylvania Gas Association, of which he has been a Director for twenty years, has made him an Honorary Life Member. He chaired its committee to design and install the Natural Gas Industry exhibit in the William Penn Memorial Museum in Harrisburg.

John was one of the founders of the Pittsburgh Geological Society, serves as President in 1948, organized, chaired and edited the Appalachian Basin Ordovician Symposium. He was subsequently made an Honorary Member.

A man of so many talents and interests is in demand to participate in Pittsburgh civic organizations, such as the Carnegie Museum of Natural History, of which he has served two terms as a Trustee.

A native of Pennsylvania, he is the fourth generation of independent oil and gas operators who started in 1860 on Oil Creek, Pennsylvania. After earning a B.S. Degree in Geology at Princeton University in 1932, he did graduate study in Geology and Petroleum Engineering at the University of Pittsburgh prior to starting his successful career as an independent gas producer and consultant. His discoveries include several Oriskany gas pools in Pennsylvania, West Virginia, and Ohio; the first Oriskany gas in western Pennsylvania (1935); and the first Oriskany gas east of the structural front in Pennsylvania (1953).

President Murray, it is my pleasure and honor to present to you a true geologist, a natural gas finder and a gentleman -- John T. Galey, for designation as the 1978 Ben H. Parker Medalist.

ACCEPTANCE
by John T. Galey

This is both one of the greatest surprises and greatest honors in my life. Now I know the reason Grover Murray offered congratulations when I saw him in Washington in September and again before this dinner.

The words John Rouse has spoken make me realize more than ever how much my life is built upon the labors of my fellow man, both living and dead, and how earnestly I must exert myself to give as much in return as I have received. Thank you.

APGS ANNUAL CONVENTION
CONSULTANT'S WORKSHOP

Introductory Remarks by Edward E. Rue
Discussion Leader

The idea of this meeting is to see whether a forum like this is interesting enough at an annual meeting to have more of them. If there is such interest, possibly next year we can add a governmental caucus or workshop, and even an academic workshop to discuss problems that are unique to particular
people. This morning, we are going to discuss the operation of a small consulting firm, individuals can tool up for a certain job; we are going to discuss the operation of a large consulting firm; and then one of the primary goals and purposes, as you know, of APGS has been the testimony that we give, not only in Washington but on the State level and even the County and Town Council levels. We are very fortunate to have excellent speakers in all three of the above consulting fields.

The format of this program will be fairly short resume from each speaker with an equally long period for questions and discussions. So we want your participation which will be a large part of this program.

THE LARGE CONSULTING FIRM
by Richard M. Winar
Dames & Moore

Our goal today is to characterize the position of the geologist within the various size firms, large and small. We had a little discussion ahead of time to try to determine what a large firm is and what a small firm is, and we came to the general conclusion, and I am sure you will come to your own, that about 10 professionals is working in an office under a firm probably would characterize a large firm. Maybe along that line Dames & Moore might be a very, very large firm. Our Chicago office has about 13 geologists, 125 people in all. Nationwide, I should say, internationally, we have about 1,500 people, 40 offices and a fairly large spread of geological abilities; about 250 geologists-geophysicists; another 250 geotechnical soil engineering types; and then we have biologists, meteorologists and so on. Our motif is that we work in the applied earth sciences and the environmental sciences. The majority of our work is engineering geology, mining and environmental, and so on. Perhaps you could characterize the scope of the work better by saying we do most consulting and geological work except exploration. Having worked as a one-man consultant for about seven or eight years, I get a pretty good idea of what a contrast might be between small and a large firm. In all cases, the difference is one of scope, I will enumerate a few for you. Perhaps I will do it by listing some of the disadvantages and then ending up with the advantages.

Being spread out in many offices and having specialists spread out throughout the world, you have a problem of communication - the problem of getting the right person to the right job at the right time. There is also the problem of maintaining a personal contact that I think a small firm is able to do because there is a one-to-one relationship at all times, and yet if you consider the relationship with a consultant, whether you are with a large or small firm, you still have to maintain that personal relationship. Within a large firm the geologist has no opportunity to spread out his talents to apply to different types of work, to learn from other specialists near him. By the same token, if he wants to get into the administrative end of it there are few such posts available. It becomes difficult in a large firm to maintain a uniform approach to an investigation. We strive for it and we feel that we accomplish it but it isn't the same as the chief officer of a small consulting firm who generally looks over every report that goes out. It is easier to lose track of the professional development of younger individuals. We have a training program and yet in the course of work in the necessities to get the job done, this is easier to do.

There is more overhead, more people, more overhead and the necessity to charge a higher fee; and as a result in some ways to become less competitive. And yet on the large job that requires many specialists and more of a multi-disciplinary approach there is an advantage. There is the difficulty of replacing people. Geologists are independent, as you all know, and they like to be satisfied; and you can't keep everybody satisfied all the time. The necessity of replacing the people who have left puts you in the position of having to spend a lot of time recruiting help and training help. This, at least in my own experience, does not pose quite as big a problem with the smaller companies. There is more red tape, more forms to fill out, more things to do by the number, and so on. On the other hand, you do have the advantage of an active R&D department, somebody developing a computer program for hydrology, for foundation engineering of various sorts. You have some continuing education programs. There is a greater outlet for a variety of work. One of the things that I have noticed in working for a small firm and then working for a large firm is that when you are out with a client there is less time needed to sell the firm. You definitely are still an individual but you are selling yourself and the firm, and there seems to be less time necessary for that. I think some of the very restricted specialties that you have within a large firm, and that you are able to associate with, make you more cognizant of just how specialized you can get and the value of these specialties.

I don't know if this next item is more of a small firm or large firm category, but within a large firm where you have an overhead with monies constantly coming in and going out, the necessity to maintain high salary (by high salary, I mean a large salary over a large number of people) we have the necessity to have people with several specialties. Too many highly specialized people in restricted lines of work definitely gives you a problem when you get into those recession periods where money is not available for this work or that work, and you are then faced with the fact that you have to lay off, unless you have someone with a talent to switch into something else. I guess that I found where there was no differentiation it was the economics of highs and lows. I thought perhaps that I got tired of running back and forth to my bank with my stocks as an independent consultant and then paying it off and getting it out again. But with a large company, it is just a matter of greater degree. I don't see an awful lot of differences in that part of the situation. Maybe that is a matter of management and how you are able to do it.

The concerns of maintaining a reputation are just as important, maybe a little more difficult in a large firm because you have so many people. But we see the same thing here. Without reputation, the consulting geologist gets nowhere. Cash flow - the same types of problems. It is very crippling to have cash flow stall your ability to pay salaries, and other commitments. You have the same problem in the small company as you have in the large one. Well, I am sure if we get a little further along, you will have more questions. It isn't my purpose to give too much now, as we want to leave something for the discussion.

THE INDIVIDUAL CONSULTANT
by Adolf U. Honkala

This title really suits me, for that's exactly what I've been for some nineteen consecutive years. Actu
ally I was initiated into this field as an independent geologist in October 1953 when I began self-employment for a period of eighteen months until March, 1955 when one of my clients talked me into a management position. This phase terminated in September 1956 when I resumed contract consulting for a New York firm on an overseas assignment in the Republic of Turkey. This contract was completed in June, 1959.

What have I learned from all of this that I can pass on to others who may be individual consultants:

1. Perhaps the most important is finances. In this year of high interest rates, keep your billing very current and do not be afraid to nudge your client for past-due accounts. By the same token, keep your own accounts up to date.

2. Incorporation is not, as a rule, an advantage to an individual business unless you seek to create a larger firm in the near future. Seek out the advice of your accountant.

3. Try to use an accountant who can put your accounts on computer. The IRS is now oriented this way, and you will have less chance of a check.

4. During these busy times don't promise more that you can provide in time or scheduling. A day or two either way at the start of a job doesn't matter too much, as long as you meet the schedule proposed.

5. I try to seek out good associates to take over areas of work which I cannot cover, and also to provide additional help during periods of heavy schedules. Remember, however, to pay adequate fees and plan the use of associates carefully.

6. It appears increasingly important to carry liability insurance to cover contractors employed on jobs, even if they are covered. A $100,000 policy costs around $100.00 per year.

7. As to the problems of competing with large firms, the individual consultant, I believe, need not fear this. I rarely, if ever, cross paths with large firms - only when bidding on nationally advertised programs. The need of individual attention to specialized work will keep you well employed.

8. As to differences between large and small firms, perhaps the one that stands out the most is exposure. Obviously, the small firm grows by personal contact while the large firm grows by the advertising effect of its large number of employees who create exposure. However, I still do not see this as a deterrent. In all other matters as to finances, work potential, etc. each faces about the same problems, except the small firm or individual usually does not have to worry about large overhead.

I hope these points are sufficient to stimulate discussion and will serve to confirm some thoughts, or add to the knowledge of the individual consultants present here today.