Summary of the AIPG Annual Business Meeting

October 6, 1989
Hyatt Regency Crystal City Hotel
Arlington, Virginia

AIPG President Richard J. Proctor presided. He introduced the 1989 and 1990 National Executive Committee members, the AIPG Washington Representative, and the AIPG Headquarters staff, and then introduced AIPG Foundation Chairman Ernest K. Lehmann.

Mr. Lehmann explained the history and goals of the Foundation and asked for member support. In particular, he pointed out that a $35 donation by every AIPG Member would enable the Foundation to move quickly towards its goals. Eventually, these funds will be used to develop and support a variety of Institute programs, particularly in the educational arena.

Secretary Serge Gonzales reported on the Institute's membership situation. He observed that although AIPG membership has declined, interest in AIPG certification appears to be increasing. Mr. Gonzales expressed particular concern that consideration of applications not approved by all three reviewing officers has taken an inordinate amount of the Executive Committee's meeting time. Some of these applications were from persons with insufficient qualifications, but the majority were the result of inadequate documentation of the individuals' eligibility.

Treasurer Norman K. Olson reported that the AIPG finances are in order, with little likelihood that the Institute will exceed its budget for 1989. Mr. Olson suggested that Sections consider purchase of a sample set of Institute publications and insignia materials and then take orders for these items at their meetings. This move would help the Institute with its cash situation and would also provide Sections with items appropriate for display purposes.

Executive Director William V. Knight summarized his activities to date. These have consisted primarily of orienting himself with respect to the Executive Committee, the various national committees, and the Headquarters office. In addition, he has begun visits to various Sections; these visits have included initiating contacts with state agencies, registration boards, and university geology departments. He plans to continue these visits. He also plans to focus attention on continuing education, member services, issues related to registration and licensing, and the inclusion of young geologists within the Institute.

President Proctor presented an optimistic "State of the Institute" message. He noted in particular that work has been completed on updated Bylaws and Code of Ethics, and the Institute has been approached by associations from several countries wishing to coordinate with AIPG. He also reported that work is nearing completion on two new "Issues and Answers" booklets, and committees are working to prepare several other new publications.

President Proctor reported that there will be no dues increases this year at either the national or Section level. He announced the locations of upcoming annual meetings: 1990 - Long Beach, California; 1991 - Gatlinburg, Tennessee; 1992 - South Lake Tahoe, Nevada, and 1993 - Hartford, Connecticut.

Open discussion centered on the proposed Bylaws and Code of Ethics. The consensus seemed to be that although the proposed changes are not perfect they represent a considerable improvement over the current documents, and the Institute needs the new set now rather than later. The door is always open for revisions in the future. It is important to note that a quorum was lacking; therefore, although business could be conducted, binding votes on amendments to the proposals - or any other items - could not be taken. Other discussion included a general description of the 1990 Long Beach meeting and several comments regarding increasing the strength and organization of the Advisory Boards.
"Certification" of Ethics
by Gerald V. Mendenhall, CPG 996

Changing circumstances require the American Institute of Professional Geologists and its members to modify their written Code of Ethics. The Executive Committee has approved the revised Code of Ethics that appeared in the August TPG. This article is a discussion of the general philosophy of a code of ethics. A code is, for the most part, aspirational rather than compulsory. In the Canons and the Ethical Standards of the revised Code "shall" replaces "shall" of the old Code; hence pathos (emotion) characterizes the Code rather than ethos (character). Further, "shall not" pervades in the Rules, the consequence of which is that definition of behavior is in the negative. So, take time to study the proposed Code and vote to adopt it.

Modification of the Code is necessary so it will conform to the revised Constitution and Bylaws. Parts of the old Code are likely unenforceable and, in fact, might not be compatible with current interpretation of the law. Obsolescence of a Code of Ethics seems inconceivable; however, the necessary changes, in part, have developed from civil rights cases where restrictive requirements in other organizations were cause for an individual being denied or removed from membership. The court determined that restrictive membership, in some cases, was restraint of trade because such membership facilitated business; and, conversely, lack of such membership hindered business opportunity.

The Code of Ethics is applicable to professionals who are applying for membership as well as those who maintain membership. In effect, the Code states that an applicant, to qualify for certification by the Institute, must not have a verifiable record of unethical behavior. Furthermore, the applicant agrees, as a member, to comply with and uphold the Code of Ethics of AIPG. If a member does not comply, then disciplinary action of various degrees may be taken against the violator for the benefit of the member's community, the Institute.

In general, a code of ethics deals with an individual's character which governs behavior affecting others. Ethics applies to individual behavior, whereas community behavior is "culture." A person can be unethical and undesirable in a community, but remain legal. The community punishes those individuals who violate the code, often by shunning or exclusion from the community because they are detrimental to the welfare of the group and individuals in it. Therefore, the basic philosophy of a code of ethics, whether written or understood, is "acceptable" behavior of an individual toward others within the same group. Now, in this geologist's opinion, the definition of "ethics" is the application of rules of conduct, including morality, that guide behavior of an individual toward others within a community. The community, whether family, tribe, state, nation, or institute, is an association of people united for common purpose. It establishes and regulates the ethics of the individual members. Enforcement is an effect of reward and punishment by the community for behavior of an individual for or against the best interest of the community. If a member, in complying with the code, must deliberate about an act as to whether it is ethical or not, then the act is, most likely, unethical even if determined to be legal. When one acts confidently, without rationalization, and can accept responsibility for an act, he can feel sure there is no violation of ethics. Most correct decisions of ethics are virtually knee-jerk reactions.

In many situations ethics has repeatedly shed some of its peripheral jurisdiction into the field of law and has become more restricted as a consequence. You may agree or disagree with a law, but there can be little doubt that "law" defines what is legal or illegal. On the other hand, ethics, in the narrower sense, is elusive. It is not easily defined or enforced under law. Ethical behavior seems simple enough, right or wrong, and that is it. Hold on! What is right? Who determines what is "wrong," i.e., unethical? When one reads the history and definitions of ethics it is readily apparent that the only consistency is that the field is subjective. Furthermore, depending upon the time and place, ethics varies from complete reason to absolute emotion; totally for self interest, on the one hand, to absolute submission of the individual for the common good of the community on the other. Ethics from one community, when applied in another, most often promptly causes conflict. Courts strike down much of the "ethical law" of morality when considering civil rights cases. the recent Supreme court case of Gregory Johnson's burning of the American flag demonstrates the separation of ethics from law. Can anyone in good conscience arrive at any conclusion other than it is wrong and unethical to burn the flag in public as a means of demonstrating contempt? On the other hand, the Supreme Court did not find it illegal and may, in fact, strike down state and federal laws prohibiting desecration of the American flag by burning.

Population pressure and its consequent necessities are basic in the determination of what becomes the ethics of individuals within a community. There is not much room for esthetics in ethics under the stresses of overcrowding. Ethics, revealed by intuitive responses, evolve as the accumulation of processes learned over generations through reward and punishment within a normal and accommodated.
Most modern ethics philosophers have plunged into the exceedingly tangled social issues of wealth distribution and civil rights, including the subjects of abortion, euthanasia, birth control, surrogate parentage, animal rights, and genetics. Pollution or other damage to the global environment is a new type of broad ethical consideration cutting across smaller communities. Many may think that final resolution of ethical conflicts is common. This is certainly not the case because of rapidly changing society and expanding interaction between cultures which make it a continuing process. We look for definable and static rights which may be enacted into law to provide or deny someone something. So, dictation by law replaces ethical judgment. The many special interest groups parade much trivia before the courts and legislative systems because of a perceived lack of ethical solution. The public is seeking resolution there rather than within themselves. Honorable parties to a disagreement should be able to resolve differences without benefit of lawsuit or federal solution. Arbitration is a fine example of ethical resolution between dissenting parties. Hopefully, professional ethics in a science such as geology will remain an ethical judgment and somewhat more objective (compatible with scientific reason). In the application of science we, by necessity, must cross over into economics, philosophy, welfare of the public, and the political arena. It is imperative that we demonstrate ethics by a "way of life" not just by what we have written in a code.

Certification by AIPG, in effect, says to the public, profession, and members of the Institute that this member has character and professional qualifications worthy of his peers' testament. Should an applicant or member violate the adopted Code of Ethics then the community which has certified that person as ethical punishes the individual. The threat of loss of certification must have some consequence, whether prestigious or pragmatic, or it is of little value.

On the other hand, registration may not concern itself much about moral ethics and may, in fact, not even adopt a code of ethics. Here, professional competence and legality are the major questions required within the legislative act establishing registration. Therefore, certification of ethics of a registered professional is as desirable for public health, safety, and welfare as being competent and legal. AIPG certification of ethics should be emphasized to prospective clients, regulators, and judicial systems as well as to the profession thereby increasing public awareness of this attribute of its members.

An up-to-date code of ethics that is enforceable, applied, and just has real value to a profession. Clients and employers of members, regulators, fellow professional, and the public can feel more confident that their interests are a concern of the certified geologist. Sound business procedure is an expression of a conditional understanding and response respected by those who have "character" and a kind heart, where "You have my word, Friend," is sufficient.

Effective Testimony: Tips for the Expert

When you take the stand as an expert, there are many things to keep in mind. Knowing the facts of the case and being prepared to offer cogent opinions based on those facts are obviously vital to success. However, a truly effective witness does not stop there. To efficiently communicate the knowledge he or she has gathered, the expert must eliminate distractions, avoid numerous pitfalls, and make a solid impression based on command of facts, credible reasoning, and overall presentation.

Although it is your knowledge and communicating skills that are your chief assets, be aware of the power of nonverbal communication. Body language is probably the most immediate cue to others, so give it some real attention. Dress conservatively, avoiding trendy fashions and loud jewelry. Do not fidget or chew gum, and be aware that glasses, handkerchiefs, and jewelry can draw attention away from your words if you handle them, whether absent-mindedly or deliberately. Keep your hands quietly on you lap and away from you face or mouth while testifying.

When approaching the witness stand, neither run or shuffle - walk naturally and evenly. Be serious when taking the oath: hold your right arm high, with fingers straight, and look directly at the officer. Make sure the courtroom hears you reply, "I do." When you are on the stand, maintain a serious air - avoid seeming either timid or a show-off. Being a "wise guy" only alienates judge and jury, so do not let an opposing attorney entice you into a wisecrack. Avoid being too eager to please or intent on rebelling against the opposing attorney. Do not let anyone excite or infuriate you at any time - always keep your temper!

Remember that attorneys are experts at using words. Listen carefully to the entire question and think before speaking. If you do not understand a question completely, ask that it be rephrased. In the event your testimony is interrupted, indicate to the judge that you were not allowed to finish your statement. If the interruption is due to an objection, then cease talking instantly and wait for the court's ruling. Another important point: If you do now know the answer to a question, or cannot remember, then say so. These are legitimate responses. In the case you make a mistake or present a slight misrepresentation, admit it and correct yourself immediately. Do not let a slip of speech or faulty memory snowball into a difficult situation. Also never recite memorized material as testimony.

Always be brief - do not volunteer more than you are asked. When answering "yes" or "no," do so out loud; do not nod or shake your head. When addressing the attorneys use their names, but when addressing the court always use, "Your Honor." Avoid looking at your attorney during cross-examination, and during recess, keep to yourself. The only time you should be discussing proceedings with others is at the request of the attorney retaining you.
Choose your words carefully when giving testimony. Use uncluttered language; speak out and express yourself clearly so that the jury, judge, attorney, court reporters, and all others can understand your answers. Avoid mannerisms of speech such as prefixing your replies with such phrases as "I swear..." or, "I can truthfully say..." Such emphasis may tend to cast doubt on all of your testimony. If a question cannot be answered solely by a "yes" or "no," try to make it clear: You might say, "Under certain circumstances..." or, "I cannot answer "yes" or "no"; may I explain?"

Do not be caught by trick questions such as, "Do you ever lie?" A good answer could be, "Never under oath on the witness stand." Another common snare is the question, "Did you ever discuss this with anyone?" Of course you have - with the lawyer, perhaps with other parties to the suit. If asked, you can name them.

When asked a question beginning, "Do you want this jury to understand...?" pay close attention. If you do not want the jury to understand your testimony as presented in the question, then now is your chance to make it clear what you do want them to understand. If your are asked, "Are you as positive about this as the rest of your testimony?" stop and consider: are you? These are pivotal points in your testimony and a crucial time to be clear on the points you have been making. It is also a time to remind you that the witness stand can be an extremely uncomfortable place for not telling the truth, the whole truth, and nothing but the truth. Remember that telling the truth is your primary duty. These tips can help the truth emerge clearly and credibly to judge and jury, and in doing so, serve the best interests of justice.

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MARKET YOUR SKILLS

By Tom H. Warren

We all know how tough job searches have been in the last few years. A personal marketing strategy will help you in these very competitive job markets.

Scientists are sometimes reluctant to develop a plan to market their skills. We feel our achievements should speak for themselves. Unfortunately, these achievements may not speak loudly or clearly enough to make a prospective employer realize the need for hiring us. In less competitive markets, one may be hired simply for being able. In today's markets, we will be hired only when an employer realizes a need for our skills.

It is therefore important to develop a plan to: (1) present our skills and achievements in the best possible light and (2) explain to an employer why hiring us will be advantageous.

Here are eleven steps that will provide an outline for development of your personal marketing plan.

1. ANALYZE YOUR POSITIVE AND NEGATIVE POINTS AND ACHIEVEMENTS. Make complete lists of your positive points and achievements. These will become the basis for your personal marketing plan.

2. DEVELOP A PLAN FOR MARKETING YOUR SKILLS. Read books on marketing. Attend a short course on marketing. Highlight your positive points.

3. DEVELOP LEADS BY UTILIZING YOUR PERSONAL CONTACTS. You already have a network of friends and associates. Ask their help.

4. PREPARE YOUR RESUME AS THROUGH IT WERE A 30 TO 45 SECOND COMMERCIAL FOR YOUR SKILLS. Use attention getting statements in a summary at the beginning of your resume. Utilize lists of your positive traits and achievements. Consultants should consider a functional format for their resumes. Read a book on resume preparation.

5. APPROACH EMPLOYERS BY: (a) sending a resume with cover letter, (b) telephoning, (c) scheduling an interview. BE PERSISTENT TO GET ATTENTION.

6. PREPARE FOR INTERVIEWS BY: (a) researching employer needs, preferences, and business, (b) practicing positive answers to interview questions, and (c) visualizing yourself as successful.

7. FLIP NEGATIVE OR DISCRIMINATORY QUESTIONS INTO AN OPPORTUNITY TO PRESENT POSITIVE POINTS ABOUT YOUR QUALIFICATIONS! Answer questions briefly then immediately say something positive about your skills and achievements. Find positive ways to explain any negatives in your background.

8. USE REFERENCES EFFECTIVELY BY: (a) asking if willing to refer, (b) briefing on your qualification, and (c) debriefing after reference checks made.

9. FOLLOW-THROUGH WITH A LETTER AND TELEPHONE CALLS: Follow-through is an absolutely vital part of any job search. Your follow-through letter and telephone calls should emphasize reasons an employer should hire you.


11. DON'T GET OR APPEAR DISCOURAGED! APPEAR ENERGETIC AND ENTHUSIASTIC! So what if you have been rejected a few times! Pick yourself up and move forward! Don't procrastinate! Get started.

By following these eleven steps, you will present yourself to employers in a manner that will enhance your chances of getting the job or contract you want.

Tom Warren, a geologist in Golden, CO, teaches a course entitled: "Get That Job."
Current Bills Reflect Congressional Interest In Water Resources Issues

House and Senate joint resolutions have been proposed to Congress for designating 1992 as the Year of Clean Water and October 1992 as Clean Water Month. The resolutions are in honor of the federal Clean Water Act, which was passed in October 1972. In other efforts to focus attention on water issues, resolutions from both houses of Congress call for President Bush to convene a White House conference on water resources. Both houses have also proposed that September 16-October 9, 1989, be designated Coastweek '89 to draw attention to the importance of U.S. coastal areas.

Citing the inability of many rural water supply systems to fund needed upgrading of their facilities, Senate bill S.1296 proposes the establishment of a Rural Water Supply Assistance Program. This program would provide grants to states to enable them to set up revolving funds to finance the improvement, renewal, rehabilitation, repair, and modernization of rural water supply systems.

A number of bills aimed at helping farmers protect surface and ground water have been introduced. S.779 would establish a national educational program to encourage farmers to reduce nitrogen pollution of waters through the use of best management practices. The Farm Conservation and Water Protection Act of 1989, S.970, would promote low-input agricultural production systems while maintaining farm profitability and encourage land, resources, and wildlife stewardship in connection with federal farm programs. Title II of this bill encourages the restoration of converted wetlands and the protection of cropped wetlands.

The North American Wetlands Conservation Act, S.804, stresses preserving wetland ecosystems in order to protect fish, wildlife, and migratory birds that depend on them. H.R.1746, the Wetlands No Net Loss Act, would promote conservation and enhancement of wetlands.

H.R.2903 would decrease financial responsibilities for owners and operators of small businesses that use underground storage tanks. A similar bill, S.1560, is pending in the Senate. According to the sponsors of these bills, many small gas stations will go out of business if they can't obtain or afford the $1,000,000 insurance coverage currently required. S.1560 would reduce the mandatory level of insurance to $500,000, give gas station owners a 12-month extension in meeting insurance requirements, and require the U.S. Environmental Protection Agency to investigate affordable insurance.

A variety of ground-water bills have been introduced. Among them are H.R.7734, The National Groundwater Research Act of 1989; S.362, a bill to promote intergovernmental and interagency cooperation in the development of ground-water policy; and S.397, a bill to provide assistance to small communities with ground-water radium contamination.

Copies of House bills can be obtained from the House Document Room, H-226 Capitol, Washington, D.C. 20515; Senate bills can be ordered from the Senate Document Room, SH-B 04, Washington, D.C. 20510. Orders must include a self-addressed label and be limited to six items per day from each document room.

(Virginia Water News - Sept. 1988)

Legal Center Publishes Mining Law Monograph

The National Legal Center for Public Interest (NLCPI) has published a monograph entitled "The Mining Law of 1872: A Legal and Historical Analysis." Intended as a case study of how law develops and responds to changes in society, the monograph shows that "the Mining Law of 1872 represented a successful effort to channel private interest into the public good."

The publication examines many aspects of the Mining Law including self-initiation, royalties, and minerals in national security and economic progress. Former Secretary of the Interior Donald P. Hodel set the tone for the publication in his introduction to it: "The Mining Law of 1872, and its principles of self-initiation and security of tenure, must be preserved. These principles provide the most efficient and cost-effective method for development of certain basic mineral commodities that are vital to our national well-being."

Copies of the monograph are available from the NLCPI, 1000 16th St., N.W., Suite 301, Washington, D.C. 20036; (202) 296-1683.

Patriotic Enviro-Peril

The splendid grassy Mall that lies between the U.S. Capitol and the Washington Monument has been almost done in by the 43 million tourists who visit Washington, D.C. each year and use the Mall as a convenient traffic-free pedestrian route among numerous nearby tourist attractions. The National Park Service, with administrative responsibility for the Mall, has been forced to close one of the Mall's 24 panels for extensive reclamation, and is
considering remedial work for the entire area. The total project could take up to five years for completion.

New Oil and Gas Resource Estimates

The DOI has recently issued a report, "Estimates of Undiscovered Conventional Oil and Gas Resources in the United States - A Part of the Nation's Energy Endowment." The report, prepared jointly by the U.S.G.S. and MMS indicates a decline of resource estimates made in previous studies in 1981 and 1985. The decline is attributed to disappointing exploration results, smaller new fields, and lower prices.

This U.S. resource assessment, as of January 31, 1987, estimates 39 to 82 billion barrels of undiscovered oil and natural gas liquids, with a mean estimate of 58 billion barrels; and 307 to 507 Tcf of undiscovered gas, with a mean estimate of 399 Tcf. The undiscovered resource is about 60% more than U.S. known oil reserves and about 90% more than known gas reserves.

Single free copies of the report are available from the U.S.G.S., Book and Open-file Reports Section, Federal Center, Box 25425, Denver, Colorado 80225, or from MMS, Technical Publications Unit, 381 Elden St., Herndon, VA 22070.

Money Matters

There are several geoscientific policy missions that the administration is committed to address; but it's not going to be cheap.

- Nuclear weapons plant modernization - $4 billion in 1989-90 and $19 million in the next five years. Spending over 20 years could reach $150 billion according to GAO.
- Hazardous waste site clean-up - $15 billion over next 5-10 years.
- Space research - $28 billion for space station and $400 billion for manned Mars probe.
- Clean up defense hazardous waste sites - $11-14 billion.
- Transportation infrastructure maintenance - $72 billion for bridge repairs by 2005; $315 billion by 1999 to maintain highways system in 1983 condition.

Nevada Issues New Call for DOE to Quit Yucca Mountain Waste Site

The State of Nevada has reissued its call for DOE to abandon efforts to locate a high-level nuclear waste repository in the State after officials there released a detailed criticism of the Department's plans to determine the site's suitability.

In comments on DOE's Site Characterization Plan, Nevada officials cited what they described as "three fundamental flaws," including: (1) DOE's "unwillingness to recognize" potentially hazardous problems such as recurring faulting and volcanism; (2) DOE's failure to integrate adequately the planned study and data collection activities; and (3) the Department's "imposition of an unrealistic schedule" that does not permit the completion of key studies before DOE is set to establish the site's suitability.

Congress in late 1987 directed DOE to concentrate on Yucca Mountain, Nevada, as the single preferred site for the nuclear waste repository.

In a Sept. 1 letter to DOE accompanying the State's comments, Nevada's Nuclear Waste project Office said the plan fails "to provide a program that places an emphasis on early examination of critical geotechnical issues" that could disqualify the site.

"An early concentrated data collection effort to improve confidence in the understanding of potential adverse impacts on waste isolation resulting from recurring faulting and volcanism does not appear in the plan." Further, the plan does not contain provisions for an early assessment of natural resources at the site to "project the likelihood of future human intrusion" that could compromise the goal of long-term waste isolation.

"A high potential for future human intrusion, resulting either from the known presence of valued natural resources or the lack of sufficient data regarding natural resources at the site, is along sufficient reason to disqualify the site."

The State also told DOE that its "unrealistic schedule" for submitting a license application that the Nuclear Regulatory Commission "appears to be driving (a) heavy reliance on analytical models in determining site suitability, rather than determining suitability through the use of empirical findings from on-site data collection."

"In simplest terms, the DOE continues to assume the suitability of the site, and this SCP, only the latest, of DOE's plans for site investigations, is designed to provide no more information than is necessary for the DOE to believe its assumption has been confirmed, only because it did not discover any factors or conditions that would clearly disqualify the site."

"(O)ut of our belief," the letter stated, "that the SCP is an inadequate basis for investigating the suitability of the site for safe, long-term isolation of highly radioactive wastes."

The thrust of the plan "is one that minimizes scientific inquiry and investigation, while asserting that as long as no specific bit of information emerges that would obviously disqualify the site in a regulatory review, the site must be determined suitable."

(Inside Energy - Sept. 11, 1989)
One Last Word

Sacred and Profane

Scientists make good capitalists, according to a recent report from Rensselaer Polytechnic Institute, Wall Street is hiring more science and engineering graduates because of their well-developed quantitative and analytical abilities. Recruiters have reported that "science and engineering graduates have intellectual skills equal to MBA's, but don't have the inflated egos and unrealistic expectations some MBA's have."

(Depends on the cohort)

Asbestos, Geology, and Asbestology

by Martin S. Rutstein
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ABSTRACT

The very word asbestos seems either to cause panic and fear or promote haughty disdain for this environmental hoax. The problems in defining hazard, mineral, and shape lead to public misunderstandings and less than accurate public laws. On the basis of some interpretable disease data, especially in some industries, we have seemingly embarked on a societal goal to purge all asbestos from our world. This leads us to scrutinize minerals which have no historical record of ever having been mined as asbestos, but which are common in crustal rocks. Just how far will we go before a balance between hazard and economic/engineering reality is factored into our environmental programs?

INTRODUCTION

It is not an understatement to describe "The Asbestos Problem" as a multi-pronged dilemma which faces our society! Protection of human health and the environment are certainly important societal goals. However, the costs of dealing with asbestos in order to achieve these goals are enormous. Thus, it is important to be sure that what we seek to do has some tangible benefit to our society, and also that our goals are realistic with respect to possible accomplishment. Furthermore, we must be absolutely sure that well-trained and capable professionals perform required works.

First of all, the word "asbestos" is very controversial - is asbestos truly dangerous enough to warrant all the regulatory fuss? Furthermore, just what do we mean when we refer to "asbestos"? This is a much more serious problem than some realize as present asbestos laws contain substantial implications for many minerals which most geologists would not consider to be asbestos. Then, if asbestos has some degree of danger, what should we do about lessening or eliminating the hazard? Finally, what role(s) can and should geologists play in all of the above?

DANGER/HAZARD

In an evaluation of risk or hazard, one first has to define terms. Essentially, risk and hazard mean that some measurable degree of "bad" things or events will occur because of exposure to a particular agent. It is commonly accepted by experts on risk perception and management that people will more typically agree or disagree on what risk/danger actually is, rather than about what degree of hazard actually exists. This means that once someone's mind is made up about danger, and minds are typically made up on the basis of "simple" explanations, people will really care more about eliminating all measure of danger rather than arguing over how much danger actually exists. In short, relativity is not terribly important in assessing and solving environmental hazards. You're either for it or against it.

To this end, asbestos, like religion and politics, is a subject full of potential for argument. Much, in my experience, comes down to personal philosophies of how much hazard one wishes to be willingly or unwillingly exposed to. For asbestos, we have the added component of "invisible" fibers which can cause potential harm many years after exposed. I have sought to describe the popular view of these as "The Asbestos Fear Concepts" which can be summarized in terms of the parameters of mineral shape/morphology, level of exposure, and latency period.

1. "Fibers" or asbestos:

It was once fairly simple to define asbestos, especially in a beginning geology course. Asbestos was a particular morphological development of a common mineral, specifically serpentine. The asbestos was visibly fibrous (looked like a "fiber") and has a flaxen or silky appearance. Countless classes of geology students would while away time listening to most stimulating lectures while picking at fibers and often watching them drift through the air. Just imagine such a possibility today as new generations of geology students never even get to handle "dangerous asbestos" because school or university health officers "know" that asbestos is a killer.

In industry, asbestos was commonly considered to be just chrysotile, crocidolite, and amosite. Chrysotile probably accounted for approximately ninety percent of historical world-wide industrial production, whereas the other two mineral products probably accounted for between two and five percent each. The remaining varieties of industrial asbestos were tremolite, actinolite, and anthophyllite, although these three collectively were of very limited production. However, as shall be discussed below,
the relatively common abundance of tremolite-actinolite in crustal rocks leads to some very important and unanticipated regulatory problems.

Now then, before the mineralogists and petrologists who read this get themselves in a state of consternation over nomenclature, let me try to explain why incorrect and sloppy mineralogical terms are used in public laws.

One must remember that such terms and nomenclature were applied before "truth in labeling" and environmental accountability came into play. For instance, talc was once known as and sold as hydrous anthophyllite (likely a good part of the reason why talc is under current scrutiny as asbestos). Also, a heritage of geology is that we have indeed been occasionally sloppy in some of our definitions. As a profession, we knew what we meant and worked things out despite evolving definitions (e.g., granitization, continental drift, etc.).

No self-respecting geologist would lose sleep over the "absolute" differences between splintery, acicular, or needle-like. However, when these are used interchangeably with fibrous and asbestiform, and then the definitions are applied to legal/regulatory matters, substantial problems develop over what we end up regulating versus what we originally intended to regulate. In retrospect, when some of our "soft" nomenclature was taken over by other disciplinary groups, we did not respond quickly or forcefully enough. In the case of asbestos, we now face an incredible mountain of what most mineralogists would consider to incredibly incorrect mineralogical descriptions and usages. More unfortunately, the regulatory stakes of the environmental game and industry tend to dissuade newcomers to the table.

Asbestos is made up of two major groups: the serpentine polymorph chrysotile and certain morphologies of particular amphiboles. The amphibole varieties were once described collectively as "hornblende asbestos" (what will happen when that information gets out?). The industrial variety of sodic amphibole was described as crocidolite or blue asbestos. It is more rigorously described as asbestiform riebeckite (and ignoring the wide spectrum of solid solution series with related minerals which would involve many sodic amphiboles as asbestos).

A collective term for iron-magnesium asbestiform amphiboles of industrial importance was "amosite" (actually an acronym for Asbestos Mines of South Africa). "Amosite" or brown asbestos is typically an industrial product made up in part or in whole of cummingtonite-grunerite, gedrite-anthophyllite, "crocidolite," and even tremolite-actinolite. With such a mix of macroscopic phases (exclusive of things like the biopyroboles), it is understandable that "amosite" is a collective term. However, some believe it to be a single mineralogical type or species and assign it substantial importance for health and regulatory matters.

Anthophyllite was a relatively rare industrial product, as were the regulatory materials known as tremolite and actinolite. Their present environmental importance is due largely to their relative geological abundance in crustal rocks and their inclusion in asbestos regulations.

Recently, OSHA defined "asbestos" as chrysotile, crocidolite, amosite, AND any form or product, etc. containing any shape, amount, etc. of tremolite, actinolite, or anthophyllite. This meant that in addition to the asbestiform and commercially important materials, any particulate of the last three industrial products and minerals were also to be considered as "asbestos." I urge that interested readers check a standard petrological text for the amphibole compositional quadrilateral and also the diagrams recommended by the international commission which evaluated amphibole nomenclature. Even a casual scrutiny will reveal that many amphiboles are chemically very close to the amphiboles defined as regulatory asbestos.

If we follow the OSHA lead and use ever more sophisticated instruments to observe "fibers," we will find that essentially all amphiboles (plus many other minerals) have elongate shapes. If length to width (known as the aspect ratio) exceeds 3:1, then the particulate is regulatory asbestos. What shall we do when we find tremolite's mineralogical cousin, hornblende, in waters and soils? What shall we do about the abundant tremolite in calc-silicates? What about actinolitic phases in greenstones, or even sodic amphiboles in blueschist rocks or alkali granites? If ALL are to be defined as "asbestos," then we have one gigantic problem. Thus, let me turn to the next aspect of the "asbestos problem," just how many asbestos particulates are dangerous to human health?

2. Number of fibers:

We "know" that the higher the level of an agent and the greater the biological insult to the human body, the more likely it is that there is a hazard. However, most of the public does not understand the probability or statistics behind exposure levels, duration extent, and onset of disease, either debilitating or present. The latter is really quite important in regulatory science because there should be a very meaningful difference to the regulatory community between dying of asbestos-related disease and dying from some cause, but having asbestos-related asbestos disease (with or without important clinical manifestations). It is not splitting hairs (or fibers) as regulations and industrial costs are directly affected by the number of negative health events. Thus, as with smokers, we are faced with an exposed population (or cohort) from which we draw varying sets of data.

There are those (geologists and insulators) who used to play with "asbestos snowballs" - and they still are not sick. Then there are those who cite excess deaths statistics from certain classes of exposure to very short terms of low levels of asbestos -- and they are sometimes correct!

I feel confident that there is indeed a sizable amount of incontrovertible evidence that certain levels of exposure to particular types of asbestos can be particularly hazardous to particular individuals under certain conditions (I hope the Editor lets this apparently waffling sentence through). And this is what makes asbestos such an argumentative subject. In this brief review, I can merely note that it is
indeed a multi-factorial problem. Epidemiology, or medical statistics, like geochemistry, is filled with uncertainty and the quests for ever more and better data. However, although we can continue to seek more data to characterize certain types of granites as to geologic province and type of formation, our ability to forever study asbestos statistics is limited by the societal need to "protect" - and thank goodness for this hallmark of our society.

Thus, we are forced to regulate on the basis of popular perception (media-simplified presentations), common sense, and statistics. Asbestos epidemiology is certainly a multi-factorial problem which is perhaps better characterized as being like Rubik's Cube - each face of which has an important parameter (exposure level, duration, smoking history, lifestyle, genetic susceptibility, fiber type, fiber length, synergistic agents, etc.). If only we could put all the "important" faces together to know which combination is important under which set of circumstances.

I do not argue here that chrysotile is "good" and amphiboles are "bad." I am not suggesting that one can be exposed to chrysotile dust and we should only regulate amphibole particulates (although I do believe that we are poorly lacking in proper safeguards for amphiboles in industrial environments). I would seek to have dust levels reduced to minimize lung burdens of all particulates. I would also like to ban cigarettes because of the incredibly close correlation (some would say proof) of smoking, asbestos, and pulmonary disease. However, smoking is considered a personal social right, whereas asbestos exposure if often taken as an unwilling hazard. Thus, it is to be controlled in industrial and other "non-willing" (e.g., schools) environments.

Given that there is some major degree of scientific disagreement over exposure levels and medical response, why are we regulating asbestos to such an extent? Cancer causation theory is often categorized in terms of individual cell alteration and bodily enzyme disfunction (at great risk of terrible oversimplification). Either ONE cell goes haywire or the body stops protecting itself and one or more cells go berserk. The first causation process would have a zero threshold, whereas the second would have some "safe" level below which there is no actual or apparent physiological response.

Because we do not know if any level is safe, "prudence" (according to US EPA guidelines) demands that we reduce exposures to the lowest level achievable. Thus, even though we presently regulate asbestos fibers in industrial environments at hundreds of thousands of fibers/day, we seek to reduce school levels of asbestos to zero. As the supposed carcinogenic effect of fibers is based on one fiber being potentially capable of causing cancerous growth, then the one fiber is the culprit. In practice, this means that "One fiber kills!" The corollary is that fiber levels MUST be reduced to zero and the invisible fiber bullet eliminated completely!

3. Dormancy and latency:

The latency or time to tumor concept rests upon our observations that asbestos-related diseases seem to take several decades to manifest themselves in clinically observable events. This yields an apparent dormant period in which the invisible fibers work their insidious effects. If children are exposed during school years, the diseases will develop when the person is in the prime of adult life. Thus, we have a time bomb problem in which "Breathe now, die later," is the supposed effect.

Even though the present condition of a particular asbestos product is not immediately hazardous and even though the exposed person may be more likely to die from some other cause, we are obligated to eliminate this asbestos exposure. How does this translate into action?

HAZARD REDUCTION

There was once a day when removing asbestos meant scraping and brushing it from surfaces, sweeping and shoveling it up, and then throwing away with the regular trash. Workers were typically unprotected and the asbestos being removed was often spread not only throughout the work area, but also throughout the rest of the building. Now, however, we have imposed incredibly sophisticated techniques to control essentially all of the asbestos fibers and keep them within the work area until safe interim packaging for transport and subsequent disposal can be achieved.

These techniques are almost space-age in character. Respiratory protection can be as sophisticated as supplied air with full face masks using positive pressure gradients inside the worker's face mask to insure zero fiber leakage into the breathing zone of the worker. Suits are designed to prevent dangerous fibers from coming into contact with the skin. Gloves and rubber boots are also used for fiber protection. Rules dictate that workers not wear jewelry or cosmetics (inclusive of aftershave lotion?) while removing asbestos. They must also not wear their regular underwear which might become contaminated. Presumably these rules are good things which, if practiced correctly, will protect workers. In practice, this is not typically the situation.

Asbestos abatement (e.g., removal) workers are commonly of three categories. There are those new to the trade and two categories of experienced workers.

The new workers constitute a relatively small group. These workers are relatively well-trained in the new techniques and have been educated (or even indoctrinated) to believe that fiber exposures are very hazardous.

Then there are "foreign" workers who are in the United States on short term work visas and see asbestos as a great way to make lots of money. They have received exposure to education, but language barriers and pre-disposed stereotypes do not typically seem to lead to a real belief that asbestos is actually dangerous or even potentially
hazardous. Rather, it is just a fantastic way to make a lot of money before returning home to live in relative affluence at the expense of those crazy Americans.

Then there are those workers who were the ones who used to put asbestos into buildings. Now, they are being paid many times their former salaries to take it out. Many believe that it is just a lot of bunk (or even much stronger descriptors). Remember, that these are the workers who are still able to work and have not experienced any observable medical effects or disfunction from working with asbestos without previous respiratory protection.

In 1983, Mac Ross and I noted with some degree of fascination and humor that estimates of death in the United States from asbestos "peaked" in 1978 and have moved downwards ever since then. In 1978, Secretary of HEW Califano estimated that close to 70,000 excess deaths from asbestos could be expected each year until at least the end of the century. This was shocking news, and as such became a social truth to the general media and many citizens.

Subsequent estimates from many different groups, including those who favor strict controls on asbestos, have since been revised downwards to 10,000 or even less. The downward shape of the curve relating deaths and year has been almost exponential.

I expect that proponents of banning asbestos have thought that the downward drift means that they have done something good, whereas the exponents of the belief that asbestos is a big lie have taken the curve to believe that we are finally recognizing the hoax. Ross and I estimated that the curve would asymptotically approach zero deaths per year somewhere around May 15, 1987 at approximately 9:30 A.M. Boy, were we wrong!

In 1987 AHERA, the Asbestos Hazard Emergency Response Act was being drafted. Passage came in December, 1987 and the asbestos abatement industry was off on a major roll. I shall consider this below, but mention it here to emphasize that a huge cohort of workers is currently being exposed to asbestos. Rules and regulations demand that workers use sophisticated respiratory protection. However, the reality of the industry is that too many workers fall into the latter two worker classes discussed above. They fail to practice proper respiratory protection. Many smoke, even inside the work area. Many workers have been caught with masks off and cigarettes in their mouths in heavily contaminated work areas. During breaks, there is typically a pall of tobacco smoke in worker rest areas.

I predict that the downward curve in deaths/year will rise and do so sharply, largely, if not almost entirely, due to exposures incurred by asbestos abatement workers who are working to save other people from hazard. And then, what will be the interpretation of the increase in deaths. Probably one of "I told you so all along! See how many workers are dying from asbestos?" The Califano prediction, although presently scientifically discredited and even the subject of some substantial scientific ridicule, will be taken as truly prophetic. But if there was ever a case of a self-fulfilling prophecy, then it will certainly be here where we sought to act to reduce deaths and ended up generating them.

**AHERA, REGULATORY REQUIREMENTS, AND THE OUTLOOK FOR GEOLOGISTS**

The Asbestos Hazard Emergency Response Act (commonly known as AHERA or even as "a horror") requires detailed building inspections for essentially every public and private secondary school in the United States. The inspection must be conducted by an accredited Inspector (a new professional title) who assesses the present and potential state of all building materials. The Inspector also follows a carefully proscribed sampling protocol for collecting bulk samples of suspect materials (essentially everything).

The bulk samples of building materials are submitted to a nationally accredited facility for analysis by polarizing light microscopy techniques. The presence or absence of asbestos and asbestos types are to be noted (along with refractive indices perpendicular and parallel to fiber axis, pleochroism, extinction angle, sign of elongation, etc.). Federal standards define 1% or more of any of the asbestiform six (chrysotile, crocidolite, amosite, tremolite, actinolite, anthophyllite) as making the sample representative of an ACBM - an asbestos-containing building material, not a new type of missile.

Note that some states, in seemingly trying to outdo federal standards, define ANY amount of the OSHA six as making the material asbestos-containing. Thus, tremolite-bearing marble chips used as exterior decorative stone make the facing material asbestos-containing. Vermiculite, which is sometimes mined along with traces of tremolite or anthophyllite, becomes at least "suspect" if not actual ACBM. Floor tiles made with marbles containing even a trace of tremolite or mineralogically related amphiboles magically become ACBM. And so it continues as we seek out any and all asbestos fibers and elongate mineral particulates. (I wonder what we will target after we eliminate all indoor "asbestos" - will we go after outcrops such as the California and Appalachian ophiolites, Appalachian metamorphic calc-silicates, sodic granites in New England and the Rockies?)

When do we close down the United States as hazardous? When do we close down the entire Earth's crust as hazardous? We can't go back to the caves because some of the best caves can be made in tuffaceous rocks - and these have zeolites which are under scrutiny as asbestos-like hazards.

In the inspection, all walls, ceilings, tiles, floor tiles, adhesives, spackling compounds, acoustical plasters, fireproofing agents, thermal system insulation, etc. must be characterized. Failure to document laboratory analysis means that the material must be "assumed" to be ACBM. Thus, in the absence of at least three samples means that the school agency must expend substantial effort at controls on disturbance. In addition, they must "tell" everyone that the
school has so many square feet of "assumed" asbestos-containing building materials. I imagine the lynch mob forming to get the superintendent when it is announced that children are being exposed to thousands of square feet of suspect material which is being assumed to be asbestos.

To avoid the guilt by assumption and satisfy the details of AHERA inspection rules require capable "mappers," samplers, analysts, and interpreters of the data. If there was ever a need for geologically trained people, this is it. Geologists typically make the best inspectors because they have a disciplinary-derived curiosity about what lies over the next hill or under the next rock. This translates into what is in the next room or above the suspended ceiling tiles. (Also, maybe geologists will help to shed some insight into reasonableness in evaluating asbestos as a hazard!)

Geologists also practice multiple working hypotheses as they perform field work. For example, they tend to look everywhere - an incredibly important component of asbestos survey work. They "track" the building material much as they would follow an outcrop along strike. In short, if they have the desire to work indoors and they like asbestos (as well as financially rewarding employment), there are not many other professional groups that can inspect a building as well and as efficiently.

Site assessment is little more than recording site data. Most geologists (actually all, because we walk on water and do everything perfectly), remember the axiom of taking superior field notes. Do it so well that you don't have to return! For building inspections where accessibility is an important parameter and inspection time is short and costly, this means that the Inspector must be sure to do it right the first time.

If the geologist prefers laboratory work, there is ample opportunity to do asbestos microscope work. I shall emphasize polarized light microscopy (PLM) as it is an elegant and fantastically useful methodology. However, transmission electron microscopy analyses (to be required within three years for air samples) shall also require many new entrees into the field, especially those who understand and appreciate the solid solution and exsolution relationships of the amphiboles.

Geology programs typically require a semester of optical mineralogy and at least one semester of a petrology-based course with a laboratory emphasizing thin section work. The intrinsic value of microscopy analysis has let to geologists being incredibly well-trained in PLM use. This is in sharp contrast to those who take a three day "shake and bake" course and believe that they really can do microscope work.

The number and diversity of field samples is enormous. Acoustical plasters and fireproofing require as many as seven samples/5,000 square feet. I have argued (rather successfully) that ceiling tiles should be sampled at a similar density. Other building materials typically require at least three samples per sampling area (type material or 5,000 square feet). Thus, a typical school can require upwards of seventy-five to one hundred or more samples, and for larger schools, two hundred or more samples is not unusual. For all the schools in the country, this is a staggering total. And if AHERA is extended to private properties as is planned for New York City and under discussion in the U.S. Congress, then there will be a severe shortage of capable (as opposed to "trained") microscopists.

Given the lack of professionals already experienced in asbestos, where will all the needed inspectors and analysts come from? I suggest that not much tinkering with an undergraduate curriculum, especially one predisposed toward environmental programs, could produce suitable "asbestologists." For example, field geology could include some exercises on building materials and indoor mapping. The curriculum materials are readily available in AHERA training documents. Optical mineralogy could include some laboratory exercises on the asbestos minerals as well as studies of building materials such as floor tiles, insulation, and plasters. In addition, an engineering geology course could be developed to consider building evaluations and regulatory matters. The educational product would be a student who should have enough textbook knowledge and experience to seek and obtain at least an entry level position in the ever-expanding field of asbestology. Another benefit to the academic department is the experience and knowledge available to university officials. At present, we have AHERA as law. In Congress, there is a bill dubbed affectionately (especially by asbestologists) "the son of AHERA." This offspring would extend the provisions of AHERA to public and possibly even private commercial properties. Some see a "grandson" of AHERA in which all buildings would be covered. Then, there would have to be a daughter and also a granddaughter of AHERA. The final progeny might be the incestuous offspring of AHERA wherein all natural waters, soils, other countries, planets, etc. have to inspected for asbestos. Surely asbestos has to be a growth industry. Thus, when asbestos laws impact the university, there will be an available cadre of academics prepared to act as internal consultants to solve the problem.

Given the likely mix of industry and academic works resulting from asbestos environmental concerns, the future look bright. It is certainly reasonable to believe that the former days of glory and relative affluence enjoyed by our profession during the reign of "black gold" will see a rebirth as "white gold" becomes an important component of geology's environmental work. Finally, as an important economic component of the gross national product, it is not unreasonable to consider that there will be "mining" type depletion allowances for asbestos removal contractors? Perhaps there will even be "set aside" contracts wherein new buildings have to have at least ten percent asbestos products to insure that the asbestology industry continues to flourish - at least until we can turn our energies to fiberglass as we quest for governmentally guaranteed risk free environment!
CATCH THE SPIRIT

William V. Knight, Executive Director

Left over from my sailing days is a poster showing a tiny, one-person sailboat being passed by a "tall ship" under full sail. The contrast is striking, but more to the point is the caption, which reads, "Catch the Spirit."Sailing, like many activities, can be excruciatingly boring unless one catches the spirit and participates. You can buy a sailboat and join a yacht club but unless you commit yourself to the spirit of the activity, you will have little to show for the money you spend.

Similarly, you can buy a ticket to "the big game." But, if you do not actually go to the game, you may as well frame your ticket and hang it on the wall. Even if you do go to the game, you can miss really getting into the spirit. Those who participate only to the extent of showing up sometime during the first quarter, spending halftime in line at the concession stand, and leaving sometime during the last quarter do not get nearly as much out of the activity as those who participate in the tailgate parties, shout themselves hoarse, and generally catch the spirit.

The same is true of professional activities. Some people go to a great deal of trouble to join AIPG or some technical organization, then never participate beyond that. They frequently complain that they are not getting their money's worth. In the case of AIPG, those who need AIPG for certification do get their money's worth if they have some occasion during the year to use their certification for profit that is greater than their dues. But the ones who really get their money's worth are the ones who participate in the activities of the organization. AIPG's paid staff is limited. We have certain routine responsibilities and also are able to take on specific projects. But, the major projects, the major activities, must be carried out by volunteers. This is true of any volunteer organization. There are many things that we would like to do, and that you would like us to do, that we can do. But we can do them only if we have the active participation of members who are interested. Without you we can do very little.

I have observed during my participation in a number of different organizations, professional, civic, and religious, that there seem to be two curves which cross, nebulous, but nonetheless there. One is the curve of investment, i.e., the level of participation in the organization. The other is the curve of return, i.e., the benefits, both tangible and intangible that one receives as a reward for that participation. Generally, when the level of participation is low the return is lower. As the level of participation increases, those two curves cross and the benefits derived from that participation exceed the cost of the participation. Admittedly, these are difficult things to measure because it is almost impossible to put dollar and cents values on them, but the perception is there.

All true professionals approach professional activities with the basic thought that they want to leave the profession in better condition than they found it. To do this, they must make significant contributions to it. These can take the form of publications or of participation in industry affairs or participation in professional affairs. But, in any case, there must be participation. Therefore, the next time you wonder to yourself what AIPG is doing for you, you might ask yourself what you are doing for AIPG and how you could help AIPG to do more for you...and others.

EXECUTIVE DIRECTOR'S ITINERARY

(subject to change)

In July, the Executive Director began visiting various Sections, agencies, campuses, and other organizations. He is both talking and listening, exchanging information and ideas. Members are encouraged to attend these meetings wherever and whenever possible. His itinerary for the next eight months, as presently scheduled, is:

November 2: Tennessee Section and Univ. of Tennessee, Knoxville, TN
November 3: Kentucky Section, and Univ. of Kentucky, Lexington, KY
November 4-8: Geological Society of America, St. Louis, MO
December 1-4: Nevada Section and Univ. of Nevada and state agencies, Carson City and Reno, NV
January 6-7: Executive Committee, Charleston, SC
January 19: Florida Section, Tampa, FL
January 20: Mississippi Section, Jackson, MS
February 9-12: California Section, Los Angeles, CA
February 23-25: Oklahoma Section, Tulsa, OK
March 30-31: Executive Committee, Washington, DC
April 1-2: Government Affairs Conference, Washington, DC
April 20-21: Texas A&M Univ., and Texas Section AEG, College Station, TX
June 2-6: American Association of Petroleum Geologists, San Francisco, CA
LETTERS TO THE EDITOR

Dear Editor:

As a scoutmaster, merit badge counselor, and lifetime scouter, it was very gratifying for me to overhear several groups of attendees at a recent meeting in San Antonio discuss Boy Scouting. One speaker even asked all Eagle Scouts to stand during his presentation. These events made me realize how much Boy Scouting and Girl Scouting really have in common with those of us who are earth scientists.

I would like to propose a way for members of the AAPG, SEG, SEPM, AGU, AGI, AIPG, SIPES, and other geological organizations to help scouting and benefit our profession as well.

Within scouting there are specialty organizations such as Order of the Arrow and SOSSI. I propose that we charter an organization such as these for earth scientists who were scouts. This organization might help promote earth science study through merit badge counseling and assistance with skill awards and achievements. Providing programs and talks for scouting events and public awareness might also be a possibility. We could do anything that supports the ideals of scouting and promotes geological knowledge.

The benefits possible from such a program would include public acknowledgment that we don’t exist to destroy the environment, more public awareness about what we really do, and possibly the creation of interest in kids to study the earth sciences as a profession. There will be other benefits, but the greatest will be the satisfaction known to all scouts, of helping boys and girls grow.

I have begun preliminary inquiries about creating this organization. If there is interest in pursuing such a program, please let me know at P.O. Box 158, Joelton, TN 37080.

Douglas E. Wyatt, CPG 7674

Dear Editor:

With the environmental regulations in Texas expected to tighten, with the definition of what is "clean" expected to reach lower thresholds, more sites will be classified as contaminated, and old sites once thought to be closed will require additional work to bring them in line with the new standards. This will mean more job openings, especially the project manager (entry level and near-entry level) and technician positions. More positions will need to be filled than the number of graduates with hydrogeology or engineering geology degrees available to fill them.

There are quality geologists/engineers eager and willing to do whatever is necessary to earn the opportunity to apply their skills to a new "environment." They have experience in technologies being applied by some environmental companies (that is, wireline logging and geophysical techniques). They have writing skills, some have computer modeling experience, and all are very much aware of the importance of finishing a job on time and on/under budget. They are field tried and tested, mature, and responsible. They have families to feed and bills that demand payment. Here lies a resource of talent and eagerness which has largely been overlooked.

How does one find these individuals without being swamped by resumes and phone calls? Contact the Houston Geological Society (HGS) Environmental Committee ("The Committee"). The Committee has formed a subcommittee dedicated to actively assist the former petroleum geologist/engineer to make the transition from the petroleum industry to the environmental industry; to assist in their retraining by providing low cost field oriented seminars covering such topics as ground-water sampling, drilling using hollow stem augers, real estate transfer site assessments, and UST (gas station) hydrogeologic assessments to name a few. The list is open ended. If you are an employer hesitate to hire applicants because they lack a particular skill or skills, let The Committee know. Perhaps we can work out a program with you to satisfy your needs.

You can reach The Committee through Robert Rieser, Chairman:

by phone: 713-463-6151
by mail: 5424 Cairnleigh Drive
Houston, TX 77084

or

1213 West Loop North, Suite 100
Houston, TX 77055

Those individuals who regularly attend The Committee business meetings and seminars can be notified via the newsletter or computer bulletin board of pending or current job openings.

Who could deny the economics of hiring experienced project managers with master’s degrees in geology/geophysics, or hiring geologists/engineers with bachelors degrees, as full time or part time employees at entry or near-entry level salaries.

Robert B. Rieser, CPG 6760
Chairman, HGS Environmental and Engineering Geology Committee

Dear Editor:

I just finished reading Richard J. Proctor’s "The President’s Message" in the September issue of The Professional Geologist. As a long time member of AIPG and as a hydrogeologist, I believe I can provide some insight into the problem of recruiting new members from the rapidly expanding environmental area. It is related to two perceptions: (1) the AIPG is pro-development at the expense of environmental concerns and (2) the AIPG does not "police" it’s members well.

The perception of AIPG as pro-development at the expense of environmental concern, while I believe no longer true, is well deserved. During the 1970’s and into the 80’s, representatives of AIPG, saying they "represented the total membership" provided testimony before congressional
committees considering legislation that was very anti-environment, supporting development interests of the oil, mining, and heavy industry. Letters to the AIPG President and Executive Secretary concerning the subject by me and other went unanswered, and letters to the editor of TPG went unpublished. At that time those of us working in the environmental field probably made up less than 20% of the membership. A number of my colleagues dropped their AIPG membership. I let mine lapse for a period before being convinced that AIPG could serve environmental interests too.

Self policing is always a perceived problem of conflict of interest. We've all heard comment that "you geologists stick together." This problem of policing became exaggerated by the economic hardships in the exploration part of our profession and shortage of trained hydrogeologists. There were many "instant" conversions to a new field of expertise. I'm sure they were competent in their previous specialty, but most were poor hydrogeologists. I came across many of the instant hydrogeologists who brought upon us a bad reputation; happily none were AIPG members. However, the public doesn't know the difference and AIPG made no effort to warn the public. There are many specialties of geology and we all must be careful to practice within our specialty. A geologist is not a "jack of all trades." I believe AIPG needs to stress this to it's members and the public.

There is a large reservoir of professional people who are impacting the public. Strong representation by AIPG is needed.

Keros Cartwright, CPG 2643

SBIR Grants Available

DOE is inviting businesses of 500 employees or less to submit grant applications to perform services in 30 energy-related technical categories under its Small Business Innovation Research (SBIR) program. Approximately 120 grants of up to $50,000 each will be made to explore the feasibility of the ideas, with up to $500,000 available in a second phase for projects with the highest potential. Deadline for applications is January 28, 1990. Copies of the solicitation are available by calling (301) 353-5707.

From DOE this Month

MEMBERS IN THE NEWS

Robert R. Berg, CPG 35, has been awarded Honorary Membership in The Texas Section of AIPG.

John L. DeVault, CPG 3597, President of JADE Corporation, Houston, Texas, has been elected 1989-90 First Vice-President of the Society of Exploration Geophysicists.

Sam R. Evans, CPG 3349, has relocated his office to 9525 Katy Freeway, Suite 465, Houston, Texas.

New Washington Publication

Bulletin 78: "Engineering Geology in Washington," with contents coordinated by Richard W. Galster, CPG 6978, consulting engineering geologist, AIPG member, and chairman of the Centennial Volume Committee of the Washington State Section, Association of Engineering Geologists has been released. This is a publication of 1,234 pages in two volumes prepared as a Washington centennial commemoration project. It includes a series of generic papers relating to engineering geology and its practice in the state. Also included are engineering case histories of more than 100 Washington projects. These are divided into chapters on dams, the Columbia Basin Reclamation Project, nuclear and coal-fired power plants, urban geology, transportation routes, rural development, ground water, waste disposal, coastal and marine engineering geology, and the engineering geology aspects of the 1980 eruptions of Mount St. Helens. The two volumes will be sold as a set at a cost of $27.85 + $2.17 (tax) = $30.00. Add $1 to mail orders for postage and handling.

FUTURE ANNUAL MEETINGS

1990 Long Beach, California
1991 Gatlinburg, Tennessee
1992 South Lake Tahoe, Nevada
1993 Hartford, Connecticut
Applications Received
(as of October 31, 1989)

Applicants for certification must meet AIPG’s standards as set forth in its Constitution on education, experience and competence, and personal integrity. If any member has any factual information as to any applicant’s qualifications in regard to these standards, whether that information might be positive or negative, please mail that information to Headquarters within thirty (30) days. This information will be circulated only so far as necessary to process and make decisions on the applications.


BLACKERT, Donald W., R.D. 1, Box 86, Amity, PA 15311. Sponsors: Richard Heinlisch, Jeff Orient, Matt Cochran, Lynn Burton, Vicki Pierce, Randi Orfield.

BROGAN, George E., 18971 Ironwood Lane, Santa Ana, CA 92705. Sponsors: Jon R. Lovegreen, Fred R. Conwell, Howard A. Spellman, Jr., Donald O. Asquith, Richard J. Proctor.

CHRISTENSEN, Paul K., 608 Crawford Drive, Billings, MT 59102. Sponsors: Robert E. Davis, W. Peter Balleau, Jim McGill, Jon C. Reiter, Dave Briar.

CLABAUGH, Don, 2736 Christine, Columbus, OH 43229. Sponsors: Henry C. Hunt, Ernest B. Williams, Ron Schmidt, Oren Gottlieb, Scott Kell.


LOWELL, David J., 6422 City West Parkway #2313, Eden Prairie, MN 55344. Sponsors: H. McEvers, Bruce A. Liesch, Kenneth P. Olson, Jeanette Lette, Jams de Lambert.


RISMEYER, Neil W., 2719 Quail Run Drive, Humble, TX 77396. Sponsors: Duane Leroy, William Drinnen, Edward McFarlan, Jr., William Bow, Fred Weaver.


New Members
(as of October 31, 1989)

BEARDEN, Bennett L., CPG 7700, Tuscaloosa, AL
BLACKSTONE, Robert E., CPG 7701, Casper, WY
BOWERS, Carol W., CPG 7689, Falls Church, VA
BRAUNSTEIN, Robert N., CPG 7690, Sioux Falls, SD
CLAREY, Timothy L., CPG 7712, Slidell, LA
COLPITTS, Robert M., Jr, CPG 7702, Socorro, NM
CORSO, Gregory B., CPG 7703, Alabaster, AL
FEDOSIK, Michael S., CPG 7691, Middletown, NJ
FITCH, David C., CPG 7704, Reno, NV
FREDERICK, Kevin D., CPG 7705, Casper, WY
HEIMMER, Donald H., CPG 7692, Littleton, CO
HEINEMEYER, Gary R., CPG 7693, Tucson, AZ
HILL, William T., CPG 7706, Hendersonville, TN
HOLLMON, Cathy Z., CPG 7707, Riverdale, MD
JAMES, Donald D., CPG 7694, Fort Worth, TX
KLANKE, John E., CPG 7695, Scotch Plains, NJ
MARLIN, Donald J., CPG 7696, Baton Rouge, LA
MUES, Sandra A., CPG 7699, Burtonsville, MD
MUKHOPADHYAY, Bimal, CPG 7708, Albuquerque, NM
NICOLARSEN, David J., CPG 7709, Gillette, WY
RAHMAN, Ata U., CPG 7710, Seabrook, TX
STRALEY, William F., CPG 7711, Helena, MT
WISE, Henry M., CPG 7697, Houston, TX
ZWICKER, Marie L., CPG 7698, Lake Worth, FL
1989 EXECUTIVE COMMITTEE

PRESIDENT
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Your Vote Counts
by F. B. (Ted) Mullin, CPG 1716

Your vote counts unless you are one of the 49 percent
of the membership who did not vote. That's right folks - only
51 percent of the eligible members voted in the election for
national officers. I have been the Chairman of the Tellers
Committee for a couple of years and our job has been about
50 percent easier than it should be.

How long does it take to mark three names on a ballot?

If you cannot participate actively in AIPG as a member
of a committee or as an officer, you CAN at least contribute
five minutes of your time.

Our Nominating Committee spends a lot of time and
effort to present us with a slate of nominees who are willing
to spend their time on your behalf. They do an excellent job
year after year. SUPPORT THEIR ACTIONS BY
VOTING.

In this year's election of our national officers, there was
less than a fifty vote margin for two of the positions on the
ballot.

You will soon be receiving a ballot on the revised
Bylaws. It is your opportunity to participate in the future of
AIPG. Exercise your rights as a member. If you want a voice
in the organization - SPEAK UP! Write your President or
other officers, go to meetings, get involved, but at the very
least - VOTE. Remember, an organization is only as strong
as its membership.

Here's your chance to make my day. Give us a vote
count of more than 90 percent. Let us know that you are a
member rather than just a label on a mailing list.

The purpose of AIPG is to strengthen the
gеological sciences as a profession with all
reasonable actions, to establish professional
qualifications, to certify those qualifications
tо the public, and to evaluate continuously
the ethical conduct of its members. Further,
the Institute establishes ethical standards to
protect the public and geological sciences
from nonprofessional practices, monitors
governmental and other activities affecting
the geological sciences, and communicates
with the public.