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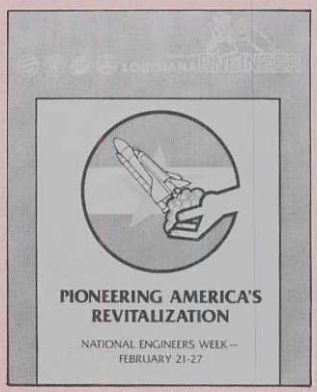
The LOUISIANA ENGINEER is the official publication of the Louisiana Engineering Society and the journal of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The magazine is published in February, April, June, August, October and December. Subscription $1.00 per year for engineers registered in Louisiana and non-registered members of the Louisiana Engineering Society. One dollar of each LES member's annual dues is set aside for six issues of the LOUISIANA ENGINEER. Second class postage paid at Baton Rouge, La. The Louisiana Engineering Society and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors do not guarantee the accuracy of statements made or necessarily concur with opinions expressed in this publication. ISSN : 0024-6794

Address LES Communications and Change of Address Forms to LOUISIANA ENGINEERING SOCIETY, P. O. Box 2683, Baton Rouge, La. 70821. Telephone 504/344-4318; 1213 Nicholson Drive, Baton Rouge, La.



ABOUT THE COVER

"Pioneering America's Revitalization" is the theme of the 1982 Engineers Week February 21-27.

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NSPE Award

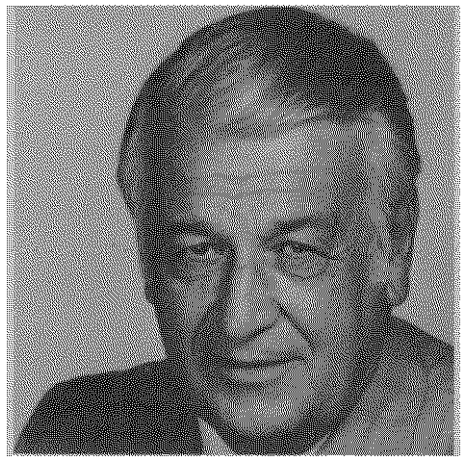
The 80,000 members of the National Society of Professional Engineers, for the past 16 years, have annually selected the Ten Outstanding Engineering Achievements from nationwide competition. This program is undertaken to promote public recognition of the widespread contributions of engineers and engineering to all aspects of American life, as well as to reward a job well done. Congratulations are in order for the Louisiana Engineering Society's Baton Rouge Chapter, headed by Robert P. Blanche, for submitting a winning nomination for 1981 - Louisiana Offshore Oil Port (LOOP), in Lafourche Parish. James C. Webb, a member of the Baton Rouge Chapter and an assistant to the executive director of the Offshore Terminal Authority section of the Louisiana State Department of Transportation and Development, provided all the data and materials for the nomination. An NSPE handsome wood and brass plaque honoring this achievement will be presented to Mr. Blanche on February 25, 1982, at the Baton Rouge Chapter's Annual Engineering Banquet.

The Louisiana Offshore Oil Port is the nation's first deepwater port capable of unloading crude oil from supertankers. Many individual features of the project are outstanding in their own right. Marine terminal platforms located 10 miles off the coast will withstand greater wind and wave forces than normally considered in the design of offshore platforms. Mooring buoys will accommodate crude oil tankers ranging in size from 80,000-700,000 deadweight tons. Pipelines and pumps can unload up to 100 MB/HR. The storage terminal consists principally of an underground complex of eight four million-barrel caverns, each designed with a high flow rate of 100 MB/HR. The total project cost was $700MM.

Engineering Education

The crisis in engineering education is beginning to receive the attention required to correct the problem. A number of major studies are being launched, congressional hearings have been held, and several national conferences are in the works to develop solutions.

One ad hoc group of some 50 leaders from government, industry and academe met recently in Washington and agreed to write "a declaration of intent" listing actions that will serve as the focal point of a National Engineering Action Conference to be held on April 7. Edward E. David, Jr., President of Exxon Research and Engineering, heads the organizing committee charged with developing the declaration and convening the forum.



John E. Ritter, P.E.
LES President

Letters have recently been sent to 150 business firms in Louisiana requesting a contribution to underwrite the $7,500 cost of a study with recommended solutions of the problems of engineering education in Louisiana.

Should we also be looking at the status of education during an individual's formative years in middle and high schools? On December 26, 1981, a reader wrote to the editor of the Times-Picayune the following, "I can't understand all the uproar over teaching creationism and/or evolutionism in the schools. What makes people think that students will be influenced by either? Their test scores indicate they haven't learned much of anything up-to-date." Humorous, but unfortunately partly true. Both national and state scores are significantly lower than they were at the beginning of 1970. Nationwide ACT scores have dropped 7% and in Louisiana, a whopping 11% in the last decade. Further aggravating the problem from an engineering education standpoint is a shortage of qualified math and science teachers. Also, some high schools require only one year of math for graduation.

The step to achieving an NTE passing score as the sole criteria for teacher certification has met strong resistance by some groups. They maintain that the test does not tell whether a teacher has a good attitude or dedication. A dean at a black school, Edward Elois, has been quoted as saying, "I am not ashamed of our students who don't pass the NTE." What an unbelievable statement. Can attitude and dedication offset a lack of knowledge, particularly in advanced high school subjects? Obviously the perfect teacher is equipped with all these assets.

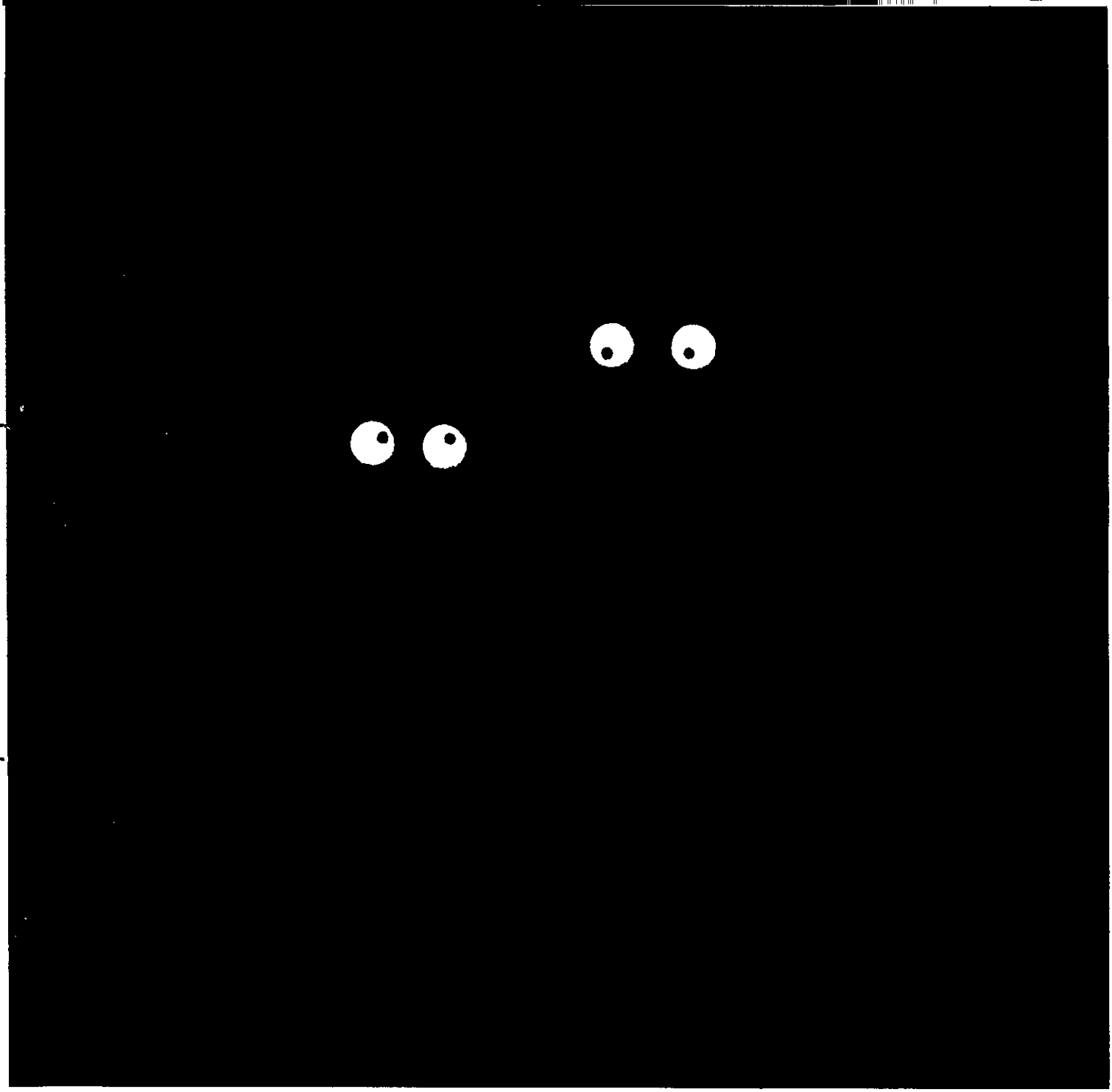
Natural Gas Controls

Natural gas remains the only primary U.S. energy source still under price controls. In 1978, Congress called for a quarter of a century of U.S. controls to be lifted gradually in a very complex process on the price of gas discovered after 1977, above a 15,000 ft. depth, and designated as new gas, up to market levels by 1985. "Old" gas discovered prior to 1977, was scheduled to remain under control until exhaustion while new gas found below the 15,000 ft. level has no restrictions. The gradual decontrol in new gas was adopted so that the overall effect at the end would be as a ramp, rather than the face of a cliff.

The phase out was based on assumptions about the market equivalent price of oil that became obsolete as soon as the law was passed. In 1978, it was estimated that the 1985 price of crude oil would be $15 a barrel. Already, it has more than doubled this figure. The result is a skewed phasing schedule that has kept natural gas a half to a third less expensive than fuel oil. This is inequitable to consumers who do not use natural gas and inefficient for the economy as a whole. Sheltering gas customers from real world prices depresses increased domestic exploration, discourages conservation, and in the long run, forces the nation to rely too heavily on high priced imported crude oil.

In Louisiana, the effect on controls is even more pronounced. They put our state at a serious disadvantage in obtaining gas supplies. Many northern and midwestern states retain substantial quantities of "old gas" whose lower prices enable them to purchase deep Tuscaloosa trend gas, at $7.00/thousand cubic feet. Intrastate operators do not have supplies of old gas, of which some sells for less than $1.00/thousand cubic feet. This situation has already threatened supplies in Louisiana which now relies on purchases from Illinois and Michigan for 21% of its gas needs.

Louisiana congressmen and Governor David Treen are well aware of the inequities in the present controls and have been pushing hard to have Congress address the issue as soon as possible. It would help if each of us would contact our representative(s) and let him know our views.



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LEF Owns its Headquarters Building

On November 23, 1981, Mr. & Mrs. Leo M. Odom donated more than $100,000 to the Louisiana Engineering Foundation (LEF) to help purchase the office building at 1213 Nicholson Drive in Baton Rouge. At the present time, the Louisiana Engineering Society and the Consulting Engineers Council of Louisiana are headquartered in the 2700 square foot building. The lot is 71 by 222 feet.

The Louisiana Engineering Foundation was incorporated in 1978 and formed exclusively for charitable, educational and scientific purposes including:

1) The granting of scholarships and providing guidance to students who wish to obtain instruction and training in engineering,

2) To conduct and support programs for education in engineering subjects,

3) To disseminate engineering information beneficial to the interested public,

4) To establish and maintain an engineering center.

In order to fulfill its goals and to retire a $75,000 debt on the building, contributions and endowments are needed. Every engineer during his or her career, and every organization employing engineers, should support the improvement of the profession. The Foundation is a means by which this can best be accomplished.

Contributions of $500 or more places you on the Honor Roll; a Founder contributes $100 to $499; a Patron $50 to $99; and a Sponsor up to $50.

The acquisition of 1213 Nicholson is a step toward establishing an Engineering Center to serve as the physical and spiritual focus of engineering activities in Louisiana. Long range plans include future construction to house a library, seminar and conference rooms, and offices for interested technical societies as well as LES.

The Board of Directors, governing body of the Louisiana Engineering Foundation, are all dedicated engineers from around the state:

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LEF Donation — Left to right standing: R. C. Spears, LEF executive director; Dr. James Durand, Plaquemine Bank board chairman emeritus; Vincent A. Forte, P.E., LEF president; Sebring Simpson, president of Plaquemine Bank and Trust Co.; seated: Dana Larpenteur, Plaquemine attorney; and Mr. and Mrs. Leo M. Odom.

The Foundation is indebted to Mr. & Mrs. Leo M. Odom for their generous contribution. Leo Odom is a native of Louisiana who has been actively engaged in professional engineering practice since he received his B.S. degree in civil engineering from LSU in 1927. Prior to that time, he had completed three years of study in mechanical and electrical engineering at Louisiana Tech University.

Mr. Odom has been very active in the Louisiana Engineering Society since 1942 and served as its president in 1968-69. He served as a member of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors for more than 25 years. His dedication and love for engineering are well known and he has walked the second and third mile toward assisting his profession. He has gained the respect and admiration of those who know him. We the engineers of Louisiana should follow his lead toward making engineering a true profession in Louisiana and we believe the Foundation is a way to make it possible.

The Foundation has nine organizations/individuals who have contributed $500 or more on the Honor Roll. We have fifty-three Founders who have contributed $100, five Patrons for contributions of $50, and twenty-two Sponsors who have contributed up to $50.

For those of you who have contributed, we are grateful. For those of you who have not, it is our hope that a check will be in the mail shortly. Use the coupon here.

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Engineers Week Proclaimed

State of Louisiana

David C. Treen
Governor

Proclamation

WHEREAS, National Engineer's Week, sponsored by the National Society of Professional Engineers and the Louisiana Engineering Society, will be celebrated the week of February 21-27, 1982; and

WHEREAS, it has been observed annually since 1951 during the week of George Washington's traditional birthday, in honor of the first President, who was a noted military engineer and land surveyor; and

WHEREAS, engineers throughout Louisiana and the nation will conduct special activities emphazing the 1982 theme, "Engineers: Pioneering America's Revitalization;" and

WHEREAS, engineers, our modern day pioneers, will be at the forefront in improving technology and productivity to revitalize our economy;

NOW, THEREFORE, I, DAVID C. TREEN, Governor of the State of Louisiana, do hereby proclaim the week of February 21-27, 1982, as

ENGINEERS WEEK

in Louisiana and urge all our citizens to join with me in honoring the thousands of engineers working and living in our great state.

In Witness Whereof, I have hereunto set my hand officially and caused to be affixed the Great Seal of the State of Louisiana, at the Capitol, in the City of Baton Rouge, on this the 8th *day of* January, *A.D.,* 1982.

David C. Treen
Governor of Louisiana

Attest By The Governor
Jim Brum
Secretary of State

THE WHITE HOUSE
WASHINGTON

NATIONAL ENGINEERS WEEK
February 21 - 27, 1982

I am delighted to send my greetings to all members of the engineering profession as you celebrate the 32nd annual National Engineers Week. This is a celebration in which all Americans should join in appreciation of the great contributions of engineers to our society.

It is no mere coincidence that the birth and rapid growth of this nation roughly parallel the birth and growth of the Industrial Revolution. We are a country created largely by enterprise and engineering -- by human visions and ambitions transformed into reality by the creativity, skill, and hard work of engineers. Our society and our lives have been shaped and influenced by this powerful combination of forces, and engineers of many disciplines have played a critical part in the building of America.

As our country faces a period of new economic challenge, we recognize the important role engineers will play in the revitalization of our industrial society. We look to your ingenuity, talent, and extended efforts to help us excel in an ever more demanding and competitive world. I know that Americans everywhere join me in this recognition of the importance of engineering, in the appreciation of your past accomplishments, and in our hopes and best wishes for your future success.

Ronald Reagan



Governor Dave Treen presenting the 1982 Engineers Week Proclamation to LES President John E. Ritter, P.E.

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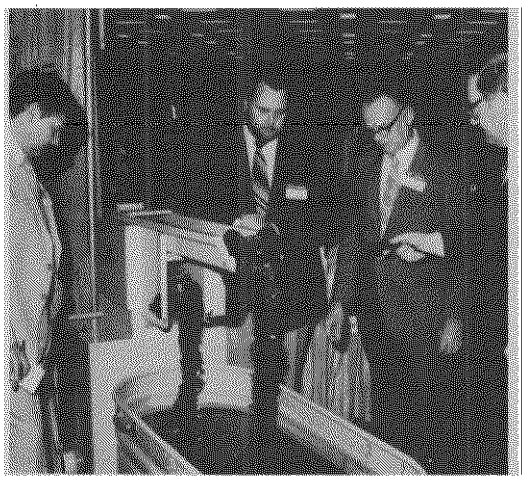

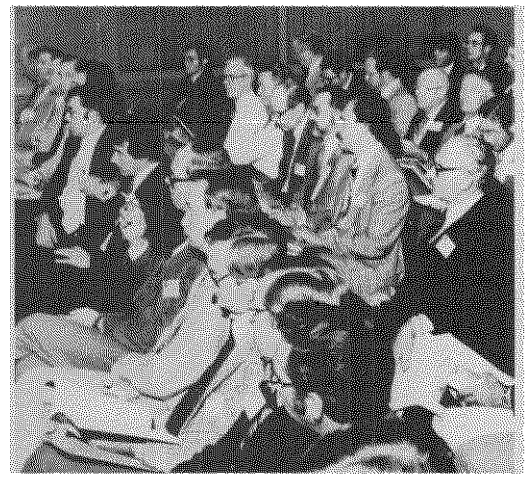

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- Drilling & Production Symposium
- Refining/Petrochemical Mechanical Engineering Symposium
- Diesel & Gas Engines Symposium
- Synthetic Fuels Symposium
- Arctic/Offshore/Deep Sea Systems Symposium
- Wind Energy Symposium

Additionally there will be technical paper sessions on a variety of other topics. They'll relate to a range of energy-sources including petroleum, natural gas, geothermal, coal, solar, etc.

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You can register for the 1982 ETCE on site. Fees are as follows:

Full Conference Member Fee	$70.00
Full Conference Non-Member Fee	$90.00
One-Day Member Fee	$50.00
One-Day Non-Member Fee	$60.00
Exhibits Only – Member or Non-Member	$5.00

Member fees apply to members of the following sponsoring and reciprocal societies: ASME; AIPE; ASLE; ISA; NACE; IEEE; I Mech E; Institute of Energy; AIChE; ASCE; CSME; EIC; PSME; PIJ; JSME; AIME.

For more information contact: ETCE; P.O. Box 59489; Dallas, TX 75229. Phone (214) 247-1747.

The Louisiana Coal Rush of 1981

During 1981 Louisiana, and in particular the lower Mississippi River from Baton Rouge to the Gulf of Mexico, has experienced an extraordinary boom in the planning and development of terminals for storage and transshipment of coal. As many as ten new facilities have been planned on the Mississippi River between Baton Rouge and the Gulf of Mexico including four in Plaquemines Parish, three in St. James Parish, two in Iberville Parish, and one in St. Charles Parish. Each new coal terminal represents a capital investment of 50 to 100 million dollars; some have stockpile capacities as great as 4 million tons and annual through-puts of 25 million tons. There have also been numerous proposals to modify existing bulk terminals to accommodate coal and increased interest in mid-stream (barge-to-ship) coal transfer operations. Ports on the lower Mississippi River exported 1.5 million tons of coal in 1979, 4 million tons in 1980, and are expected to export 12 million tons in 1981. Projected coal exports through the lower Mississippi River for 1990 are 100 million tons per year with the possibility of doubling by the year 2000. The actual annual U. S. coal exports for 1979 amounted to 66 million tons and are projected to be 400 million tons by the year 2000. These projections suggest that fully one-half of all U. S. coal exports could pass through Louisiana ports by the year 2000.

WHY COAL?

Coal is fossilized plant material which has undergone pressurized decomposition beneath the earth's surface over millions of years. Coal is literally stored sunlight that was absorbed through the process of photosynthesis by plants that covered the earth hundreds of millions of years ago. Coal has been used by man since the Bronze Age, 3,000 to 4,000 years ago. It was essential to the transportation and industrialization that civilized America during the 18th and 19th and early 20th centuries. For example, coal provided about 75% of the nation's primary energy at the turn of the century—currently it provides less than 20%. Coal in the U.S. today is primarily used as a fuel for generating steam for industry (8%) and power utilities (68%), but it is also used in metallurgical industries (14%) such as iron and steel as a carbon source upon conversion to coke; the remaining (10%) is exported.

Coal occurs in three principal grades according to its age, hardness, carbon content, and heating value (BTU). Lignite or soft coal is the lowest grade of coal. It has a high ash and moisture content, less carbon and, therefore, a lower heating value (8,000 BTU's/lb. or less) than other grades. Bituminous coal, most widely used as fuel and the most abundant grade in the U.S., has a low ash and moisture content, high carbon content, and heating value of approximately 11,500 BTU's per pound. Anthracite coal or hard coal is geologically the oldest form of coal, is non-coking, and has heating values as high as 14,000 BTU's per pound.

It is estimated that the U.S. contains about 30% of the world's recoverable coal reserves. Total remaining recoverable U.S. coal resources to a depth of 3,000 feet are estimated to be 1,760 billion tons. Last year the U.S. produced approximately 800 million tons of coal of which about 10% was exported.

Coal has enjoyed a revival in recent years as a primary energy source worldwide for three major reasons:

- rising costs of petroleum
- environmental concerns over nuclear power
- lack of near-term alternative energy sources

The U.S., being a world leader in reserves and production of coal, is in a particularly fortunate position to not only become more energy self-sufficient through expanded coal utilization domestically, but also offset the balance of payments deficit through export of coal.

There are approximately 5,000 coal producing mines in the U.S. sustaining an employment of 120,000 to 150,000 people. There are three geographically distinct coal production areas in the U.S., each area yielding coal with specific characteristics. The eastern coal produc-

U. S. ENERGY MILESTONES

1758 - FIRST RECORDED COMMERCIAL SHIPMENT OF AMERICAN COAL (32 TONS FROM VIRGINIA TO NEW YORK)

1885 - COAL SURPASSES WOOD AS U. S. PRIMARY ENERGY SOURCE

1947 - U. S. BECOMES NET IMPORTER RATHER THAN EXPORTER OF OIL

1950 - OIL SURPASSES COAL AS PRIMARY U. S. ENERGY SOURCE

1957 - FIRST SALE OF NUCLEAR-GENERATED ELECTRICITY

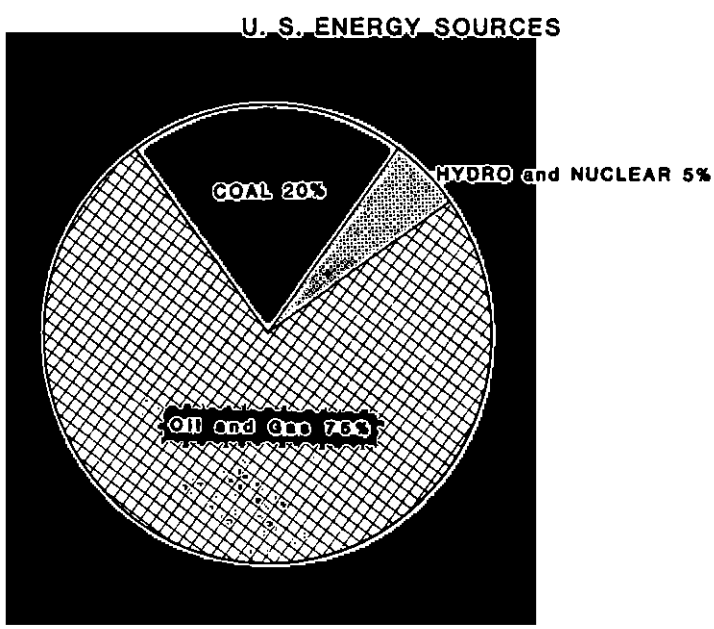
1970 - U. S. OIL PRODUCTION PEAKS

1973 - U. S. NATURAL GAS PRODUCTION PEAKS, ARAB NATIONS EMBARGO OIL EXPORTS TO U. S. FOR SIX MONTHS

1974 - WORLD CRUDE OIL PRICES QUADRUPLE

1979 - THREE MILE ISLAND NUCLEAR ACCIDENT, WORLD OIL PRICES DOUBLE, DOMESTIC CRUDE OIL AVERAGES $14.27/BARREL, IMPORTED CRUDE AVERAGES $21.67/BARREL

1980 - OPEC SETS $32/BARREL PRICE FOR CRUDE OIL EXPORTS



Source: National Geographic, 1981

tion area lying along the Appalachian Mountains yields high sulfur (1.5% or greater) coal having a high heating value from relatively deep (200 feet or more) seams. The midwestern coal production area includes states in the central Mississippi River Valley. This area yields coal of high heating value from deep, thick seams which is also high in sulfur. The western coal production area includes the Great Plains and Rocky Mountains. This area contains vast amounts of low sulfur, surface minable coal although its heating value can be 40% less than eastern and midwest coals.

Transportation of coal is a key link in the overall system of coal production, utilization and export. Coal transport in the U.S. represents one-fourth of all rail cargo business and one-fourth of all inland water-way cargo business. Approximately one-half of the nation's coal is transported by rail, one-fourth by barge and the remainder by truck, and, to a lesser extent, by slurry pipeline. The major coal users, the power utilities, transport by rail using 100-ton capacity cars in the unit-train concept where dedicated systems of transport equipment operate on a fixed schedule to deliver loads usually of 10,000 tons.

Barge transport of coal by U.S. inland waterways is currently the most economical transportation mode. 1500-ton capacity barges are the standard size used in coal transport. About one-third of all barged coal is carried on the Ohio River. Barge tow sizes are restricted primarily by the locks required to access various reservoir elevations between coal destinations. Approximately 10% of the coal produced in the U.S. is transported by truck and most of it goes to utility companies. Trucks offer distinctive advantages over other modes such as speed and route flexibility. Slurry pipelines have been used to transport iron concentrate, limestone, and other cement raw materials and copper concentrate, as well as coal. Coal slurries are mixtures of water and pulverized coal having a solids concentration by weight of 45% to 55% which is pumped at a rate of about five feet per second. Pump booster stations are located every 30 to 60 miles along the pipeline route. The principal advantage of coal-slurry pipelining is the reduced cost per ton per mile in transport. While there are no long distance coal-slurry pipelines now operating in the U.S., there are three planned to bring western coal to central Gulf terminals. Houston Natural Gas Company plans a 22-inch, 750-mile slurry pipeline from Colorado to Texas with a 9 million ton per year (tpy) capacity; Wytex plans a 36-to-40 inch, 1,260-mile slurry pipeline from Montana to Texas with a 22 to 29 million tpy capacity; and Energy Transport Systems, Inc. plans a 38-inch, 1,036-mile slurry pipeline from Wyoming to Arkansas with a 25 million tpy capacity.

WHY LOUISIANA?

While Louisiana is blessed with vast oil and gas resources, the state is not recognized as having coal reserves of any national significance. There are substantial deposits of lignite coal in northern Louisiana in DeSoto, Sabine, Red River and Bienville Parishes. Lignite's high sulfur and ash content, rapid weathering characteristics, and relatively low heating value make it a feasible fuel alternative only for those industries and utilities proximate to its point of production. There are tentative commitments from Cajun Electric and Central Louisiana Electric Company, Inc. (CLECO) for mine-mouth and short-haul utilization of Louisiana lignite in steam electric power plants.

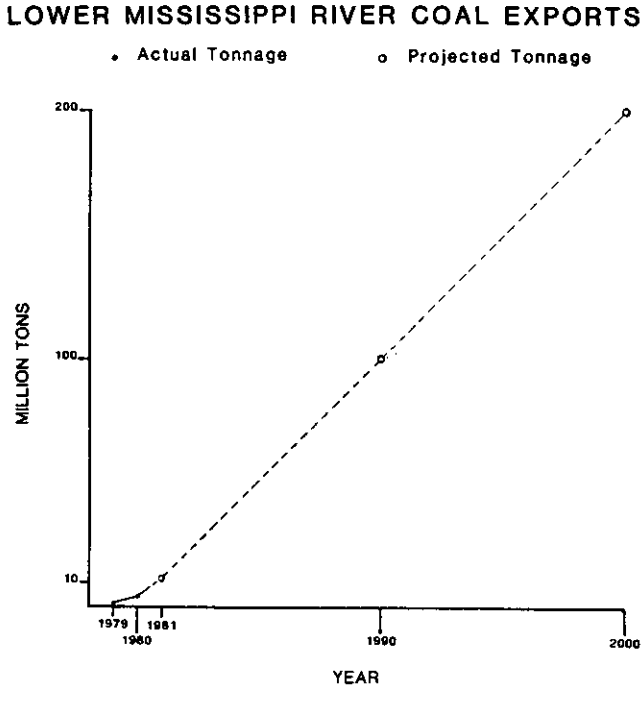
Louisiana has captured the attention of coal producers and transporters because of (1) Louisiana's 6,905 miles of navigable waterways connecting the upper Mississippi River Valley coal production areas with the Gulf of Mexico and maritime export routes; (2) southern Louisiana's available riverside sites for coal terminal development; (3) recent growth of coal export markets in France, Italy, Germany, the Netherlands and East Asia.

The prospect of expanded deepdraft access on the Mississippi River from Baton Rouge to the Gulf of Mexico (lower Mississippi River) is a further inducement to export interests. Louisiana cur-

PERCENT OF RECOVERABLE WORLD COAL

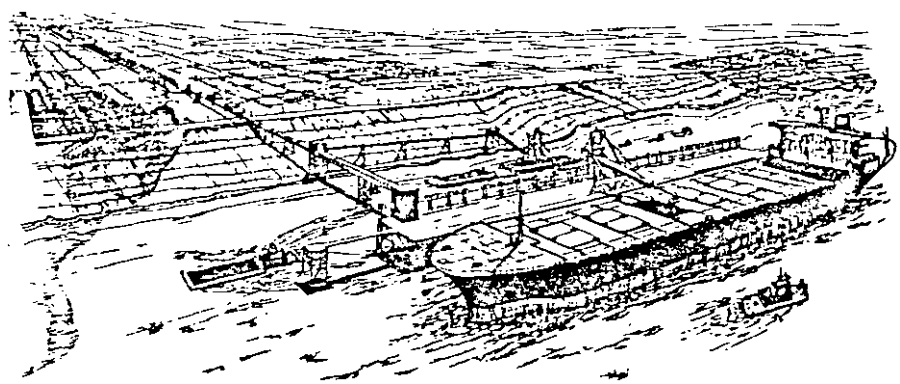
RESERVES BY COUNTRY

UNITED STATES	30.8%
USSR	23.1%
EUROPE	21.4%
CHINA	13.5%
OCEANIA	4.2%
ASIA	3 %
AFRICA	2.6%
CANADA	0.9%
SOUTH AMERICA	0.5%



rently handles about 35% of the total U.S. waterborne commerce tonnage. The current lower Mississippi River navigable draft restriction is forty feet, accommodating loaded river and ocean barges and ships of the 30 to 60 thousand deadweight ton (DWT) class. Vessels as large as 160,000 and 241,000 DWT have entered the lower Mississippi for partial cargo loads and fuel bunkering, but they are unable to load to capacity in channel depths restricted to forty feet.

The Committees on Public Works of the U.S. Senate and House of Representatives adopted resolutions in 1967 authorizing studies of the lower Mississippi River deep draft access project. Today the U.S. Army Corps of Engineers recommends a project to deepen the channel to 55 feet. The lower Mississippi River is already 100 feet deep except for the final 21 miles, from Head-of-Passes to the Gulf of Mexico, and nine channel crossings between New Orleans and Baton Rouge. Transportation cost savings, fuel savings and efficiencies in vessel operations could be gained from deep-draft access. For each foot of bulk carrier draft beyond forty feet a corresponding 3,000 tons in cargo capacity is realized. Use of 50-foot draft coal carriers instead of 40-foot draft carriers on New Orleans to Europe transport could save an estimated $6 to $7 per ton shipped. The largest ships now carrying coal in export trade are about 150,000 DWT. It is estimated in the World Coal Study (1980) that during the 1980's 100,000 to 125,000 DWT vessels will be utilized in ocean transport of coal, and that by the 1990's ships as large as 250,000 DWT may come into use.



Coal Export Terminal

The New Orleans District Corps of Engineers estimates that dredging and facilities relocation to achieve the lower Mississippi River 55-foot channel access could be completed in three years time. The Corps of Engineers has established the following schedule for the Deep-Draft Access to the Ports of New Orleans and Baton Rouge, Louisiana:

September 1982 - Final Planning, Completion of Environmental Impact Statement for Final Public

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Hearings and Congressional Authorization

December 1982 - Authorization for Construction

December 1983 - Preliminary 50-Foot Channel

December 1985 - Completion of 55-Foot Channel

ENVIRONMENTAL CONSIDERATIONS

Coal transshipment and storage terminals on the lower Mississippi River exert few negative environmental impacts, and reliable pollution control technology is available to mitigate its impacts. However, large scale coal storage and transshipment operations present new problems for developers in a state that, because of its own energy resources, has not had to rely upon coal as a primary energy source since the early 1900's.

Coal storage and transshipment terminals do not produce "process" air pollutants or wastewaters. Air pollutant emissions in the form of fugitive particulate matter (coal dust) are generated where coal handling or wind erosion occurs. Coal handling equipment such as barge, railcar and truck unloaders, conveyors, stackers, reclaimers, shiploaders, and stockpile maintenance implements can emit many tons of fugitive coal dust annually if uncontrolled. Coal dust from railcar and truck unloading operations can be controlled by water spray systems and enclosures. Coal dust from barge unloading operations can be minimized through the use of water sprays and partially enclosed free digging ladder-type unloaders. Coal conveyor routes can be largely covered and transfer points fitted with water sprays and enclosed with chute work to control coal dust emissions. Stockpile stackers and reclaimers can be height-adjusted during their operation to minimize coal free-fall and aerial dispersion. Coal dust emissions from shiploading operations can be controlled through the use of telescoping discharge chutes that can be adjusted to minimize coal free-fall into the ship's hold. Coal storage stockpiles can emit dust from wind erosion and maintenance procedures. Wetting of the stockpiles with water or water-based chemical wetting agents can largely eliminate dusting. In areas where stockpiles incur sustained high winds, "wind fences" can be situated on the windward crest of the pile to deflect turbulent eddies that might entrain coal dust.

Wastewaters from water spray recovery stockpile runoff and stockpile leachate are generated at coal terminals. Large volumes of runoff and leachate wastewaters are captured from stockpile areas in Southern Louisiana where average annual rainfalls approach 60 inches. These wastewaters generally contain high levels of total suspended solids, total dissolved solids, and, depending on the coal's origin, high sulfur levels with associated low pH (acidity). Coal from eastern and midwestern production areas tends to have greater pyrite (iron sulfide) content than western coal. Water coming in extended or frequent contact with pyrite rich coals leaches out sulfur to form sulfuric and sulfurous acids in stockpile wastewaters. Wastewater treatment systems for coal stockpile runoff and leachate should provide sedimentation to remove solid matter as well as pH adjustment to neutralize leachate from high sulfur coals.

Paul Taylor, who wrote this article on the "Louisiana Coal Rush of 1981," joined the Waldemar S. Nelson and Company in June of 1977. He has a B.S. in Biology and Marine Sciences from Livingston University, Alabama, an M.S. in Environmental Sciences from Tulane University and has taken several postgraduate courses in professional writing and communications from St. Mary's Dominican College and Loyola University.

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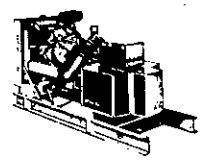

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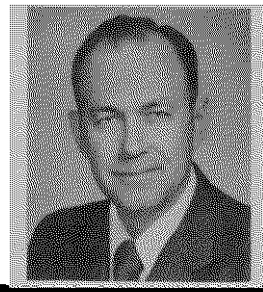
NÔTRE MÉTIER

Paul L. Landry, P.E., Executive Secretary, Louisiana State Board of Registration for Professional Engineers & Land Surveyors.



All Professional Engineers and Professional Land Surveyors may obtain one free 1982 Biennial Roster of Board Registrants by sending the address label of this issue of the *Louisiana Engineer* to the Board, 1055 St. Charles Ave. Suite 415, New Orleans, LA 70130. This roster will list all registrants of the Board who were current on December 31, 1981. Please mail your request as soon as you can so that the Board can take advantage of bulk mailing rates. An order blank is included elsewhere in this issue.

Engineer & Land Surveyor Titles

At a recent meeting, the Board resolved that there is a difference between the title one holds versus a job assignment or project assignment. LA R.S. 37:682 is explicit in defining "Engineer" and "Land Surveyor." "Engineer" means "Professional Engineer" and "Land Surveyor" means "Professional Land Surveyor." Therefore, only registrants of the Board, who are Professional Engineers, are permitted to present themselves to the public as Engineers.

Land Surveyors must also be registered as Professional Land Surveyors before they are permitted to present themselves to the public as a Land Surveyor. An Engineer-In-Training may not present himself to the public as an "Engineer," "Project Engineer," "Mechanical Engineer," "Civil Engineer," "Parish Engineer," etc., nor can anyone else who is not a registered Professional Engineer. Engineers-In-Training and other persons are assigned job functions, project assignments, and job assignments, which may include "responsible engineering work." If this were not the case, the Board could not register individuals as Professional Engineers because one of the prerequisites for registration is "progressive engineering experience in work acceptable to the Board."

Therefore, within an organization an EIT may be given a job assignment or project assignment such as "Design Engineer," "Project Engineer," "Parish Engineer," or "Sales Engineer." However, he is not permitted to present himself to the public as such. He could use the title of "Designer," "Parish Coordinator," "Sales Representative," "Project Manager" or "Project Coordinator." The EIT could also present himself to the public as "EIT" or "Engineer-In-Training."

The Board was very firm on its interpretation of the statutes in that the title "Engineer" or "Land Surveyor" is not to be used by individuals who are not registered with the Board as a "Professional Engineer" or "Professional Land Surveyor."

Seals

The rules on the "Use of Seals," LAC 19-3:10, at this writing have not been promulgated in the Louisiana Register. The Board did adopt a new seal for the Professional Land Surveyors. All new registrants will be required to use the new seal of "Registered Professional Land Surveyor" in lieu of "Registered Land Surveyor." The Board furthermore recognizes that the initials LS, RLS, PLS, or RPLS are acceptable initials for a Professional Land Surveyor. However, PLS is preferred. Professional Land Surveyors, now registrants of the Board, may continue to use their old seal and will not be required to purchase the new seal. This is a sample of the new seal which may be used:



Rules of the Board

The Board adopted the following Rules for Professional Engineers and Professional Land Surveyors:

Louisiana Administrative Code 19-3:1 thru 3:13

LAC 19-3:1 General Provisions
3:2 Definitions
3:3 Certification and Registration of Individuals and Temporary Permits
3:4 Corporations & Other Firms (To be revised at later date)
3:5 Applications and Fees
3:6 Branches of Engineering
3:7 Curricula
3:8 Experience
3:9 Examinations
3:10 Use of Seals (To be revised at a later date)
3:11 Expiration and Renewals
3:12 Professional Conduct
3:13 Disciplinary Actions

These rules were promulgated in the Louisiana Register on December 20, 1981. LAC 19-3:4 and 3:10 are in the final draft and should be approved by the Board in early 1982. These rules were revised so as to be compatible with the new registration law passed by the legislature in 1980, Act 568. Since September 12, 1980, the Board can only accept applications for certification as Engineers-In-Training from persons who are college graduates.

Since July 1, 1978, all persons who applied for registration as Professional Engineers have been required to pass at least one eight-hour written examination. Effective January 1, 1985, all persons who apply for registration will be required to pass two eight-hour written examinations, the fundamentals examination and the principles and practice of engineering examination. These people should have no problems in obtaining reciprocity registration from other states.

MEMBERS OF THE BOARD

Section 37:683 of Act 568 of 1980, specifies areas of professional practice for members of the Board. With reference to that section and in accordance with the Bylaws of the Board, the following list is presented:

Private Practice of Engineering:
Chris Demopulos, James L. Meyer

ORDER YOUR BIENNIAL ROSTER

Professional Engineers, Professional Land Surveyors, Engineers-In-Training and Land Surveyors-In-Training, registered in Louisiana as of January 1, 1982.

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The Roster is **FREE** to Professional Engineers and Professional Land Surveyors who are registrants of the Board.
(Use the address label from this issue of the Louisiana Engineer to obtain your free roster.)
Others may order the roster by sending a $10.00 check payable to the Board.

and Fred C. Culpepper
Engineers in Government Employment: Larkin B. Agnew and Arthur R. Theis
Engineers Employed in Industry: Edward J. McNamara and Francis C. Roy
Engineers Employed in Education: H. L. Henry and James W. Reeves
Professional Engineer and Land Surveyor Engaged in Land Surveying: Chris Demopulos
Professional Land Surveyor: A. J. Brouillette

Larkin B. Agnew's term on the Board expired in July, 1981. However, he continues to serve because his replacement has not been appointed by Governor Treen.

REGISTRATIONS & EXAMINATIONS

The National Council of Engineering Examiners completed a Task Analysis of Licensed Engineers in the Spring of 1981. This will result in a revision of the principles and practice of engineering examination commencing in the Spring of 1983. The cost for the new examination will more than double. This means the registration law must be changed in 1982 so as to permit the Board to continue to administer examinations. The Board is now limited to a fee "not to exceed thirty-five dollars" for the registration of a Professional Engineer.

FIRMS WHO RECENTLY BECAME REGISTRANTS OF THE BOARD ARE:

RECENTLY REGISTERED CORPORATIONS

KEY
E. — ENGINEERING FIRM
L.S. — LAND SURVEYING FIRM

Combustion Engineering, Inc. 900 Long Ridge R. Stamford, Conn. 06902	E.
John C. Copes Consulting Engineer 1956 Wooddale Court Baton Rouge, La. 70806	E.
Coyle Engineering Co., Inc. 2056 East Texas St. Bossier City, La. 71111	E.
Daniel, Mann, Johnson & Mendenhall 3000 Magazine St. New Orleans, La. 70115	E.
Datec, Inc. 1141 Whitney Ave. Gretna, La. 70053	E.
Delta Design, LTD. 701 Madison St. Gretna, La. 70053	E.
DuBois, Carman, & Associates, Inc. 4100 Walnut Dr. New Iberia, La. 70560	E.
Environmental Protection Systems, Inc. P. O. Box 20382 Jackson, MS. 39209	E.
Gannett Fleming Corddry & Carpenter, Inc. 207 Senate Ave. Camp Hill, PA. 17011	E.

Annual Report

Louisiana State Board of Registration for Professional Engineers and Land Surveyors

For 1981

Regular meetings of the Board were held in January, March, May, July, September and November. A special meeting was held in December for the purpose of adopting the Rules of the Board.

The tabulation that follows indicates actions taken by the Board on applications for the registration of Professional Engineers and Land Surveyors and for the certification of Engineers-In-Training and Land Surveyors-In-Training.

PROFESSIONAL ENGINEERS

Applications approved	640
Applications disapproved	22
Applications withdrawn	69

LAND SURVEYORS

Applications approved	30
Applications disapproved	22
Applications withdrawn	1

ENGINEERS-IN-TRAINING

Applications approved for certification	690
Applications disapproved	130

LAND SURVEYORS-IN-TRAINING

Applications approved for certification	6
Applications disapproved	0

The following is a tabulation of the total number of Professional Engineers, Land Surveyors and Professional Engineers (Public Employees), Engineers-in-Training and Land Surveyors-in-Training holding registration and certification as of December 31, 1981:

Professional Engineers	14,489
Land Surveyors	3,098
Engineers-in-Training	3,135
Public Employees	17
Land Surveyors-in-Training	17

Below is a tabulation of the number of Professional Engineers registered in the various branches as of December 31, 1981. (Some persons are registered in more than one branch.)

Agricultural	166
Chemical	1255
Civil	5671
Electrical	2364
Industrial	133
Mechanical	3915
Metallurgical	37
Mining	36
Petroleum	1262

A total of 1302 written examinations were administered in 1981. Of these, there were 911 examinations in the fundamentals of engineering, 23 in the fundamentals of land surveying, 300 in the principles and practice of engineering, 23 in the principles and practice of land surveying and 45 in the laws and procedures of land surveying in Louisiana. Engineering examinations were administered at examination centers in Baton Rouge, Lafayette, New Orleans and Ruston in April and November. On the same dates, land surveying examinations were administered in New Orleans.

Gutierrez, Smouse, Wilmut & Assoc., Inc. E.
11171 Harry Hines Blvd.
Suite 113
Dallas, TX. 75229

Havens & Emerson, Inc. E.
1300 East 9th St.
Cleveland, OH. 44114

L & L Engineering, Inc. E.
14423 Old Hammond Hwy.
Baton Rouge, La. 70816

Lemco Engineers, Inc. E.
11933 Westline Indus. Dr.
St. Louis, MO. 63141

Mason Surveying, Inc.
Rt. 10 - Box 273
West Monroe, La. 71291

Maurer Engineering Co. E.
3010 Knight St., Suite 350
Shreveport, La. 71105

Morgan Electric, Inc. E.
1200 Distributors Row
Harahan, La. 70123

Waldemar S. Nelson & Company, Inc. L.S.
1200 St. Charles Ave
New Orleans, La. 70130

Nile Engineering Inc. E.
P. O. Box 996
Abbeville, La. 70510

Pan American Engineers, Inc. L.S.
1022 Tenth St.
Alexandria, La. 71301

Peddada, Gilo & Assocs. E. & L.S.
3900 Sterkx Rd.
Alexandria, La. 71301

Process Plants, Inc. E.
P. O. Box 2119
Kenner, La. 70062

Production Management Corp. E.
405 Gretna Blvd.
Gretna, La. 70053

Sulco Marine Surveys, Inc. S.
214 N. Massachusetts St.
Covington, La. 70433

Sullivan & Martin, A Professional Corp. E.
336 North Jeff Davis Pkwy.
New Orleans, La. 70119

Toomer Electrical Company, Inc. E.
13050 Airline Hwy.
P.O. Box 15274
Baton Rouge, La. 70895

R. J. Tricon Co., Inc. E.
755 Tchoupitoulas St.
New Orleans, La. 70130

Van Eaton & Associates E.
325 Renwood Circle
Lafayette, La. 70503

Rixby J. Hardy & Assocs. Consulting Engrs. E.
3100 Blanchard Dr.
Chalmette, La. 70043

THE FOLLOWING FIRMS RECENTLY RENEWED THEIR REGISTRATION WITH THE BOARD:

RECENTLY RENEWED CORPORATIONS

KEY
E. — ENGINEERING FIRM
L.S.— LAND SURVEYING FIRM

Automation Engineering Co. E.
9941 Mammoth Ave.
Baton Rouge, La. 70815

B E & C Engineers, Inc. E.
625 Andover Park West (M.S. 9A-01)
Tukwila, Wa. 98188

Bartley Engineering Corp. E.
415 N. St. Patrick St.
New Orleans, La. 70119

Central Engineering & Surveying, Inc. E. & L.S.
1102 Texas Ave./Box 8213
Alexandria, La. 71306

Crescent Associates, Inc. E.
8200 Hampson St., Suite 400
New Orleans, La. 70118

Crest Engineering, Inc. E.
300 South Post Oak Road
Houston, TX. 77056

Ebasco Services, Inc. E.
Two World Trade Center
New York, N.Y. 10048

Kellen & Associates, Inc. E.
375 N. Foster Dr.
Baton Rouge, La. 70806

Parsons Brinckerhoff, Quade & Douglas, Inc. E.
One Penn Plaza
250 W. 34th St.
New York, N.Y. 10001

Zumwalt & Vinther, Inc. E.
1000 Mercantile Commerce Bldg.
Dallas, TX. 75201

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1982 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

March 23
May 25
July 27
September 28
November 23

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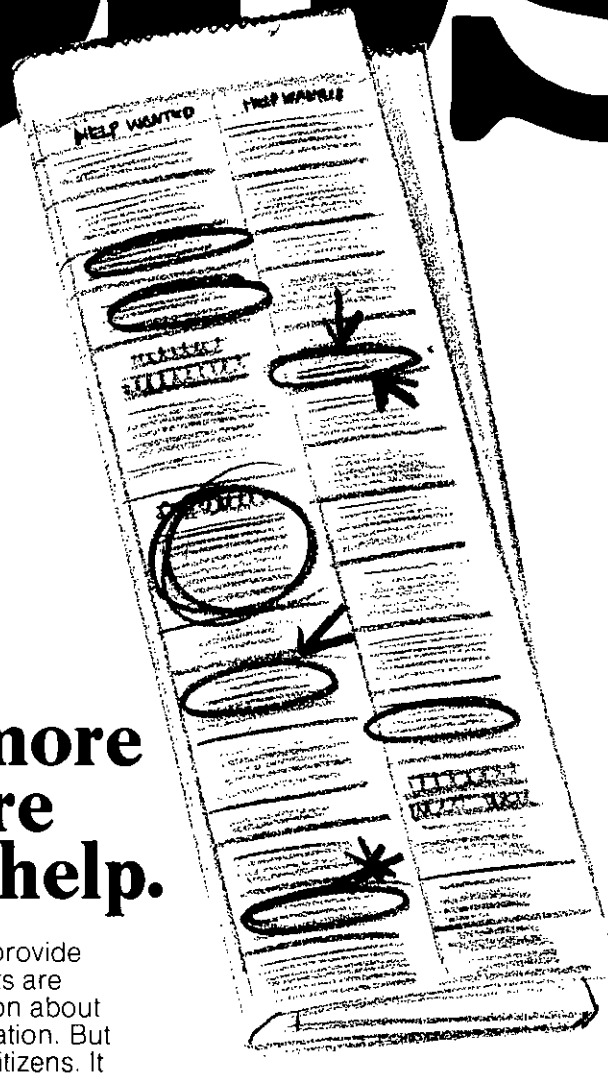

Louisiana needs more of them. And we're doing our best to help.

Louisiana needs jobs and new industry can help provide them. That's why our teams of industrial specialists are regularly talking to prospects throughout the nation about new sites available for plant expansion and re-location. But new industry means more than just jobs for our citizens. It means helping present industries and services. It means improving our communities and building new ones. It means boosting our overall economy and helping our state grow and prosper through additional taxes.

We have plenty of the natural and human resources necessary to attract new industry here. But among the basic necessities are additional supplies of electric energy to power new industries in the most efficient way. And your investor-owned electric companies of Louisiana are planning ahead and building the facilities to handle these demands.

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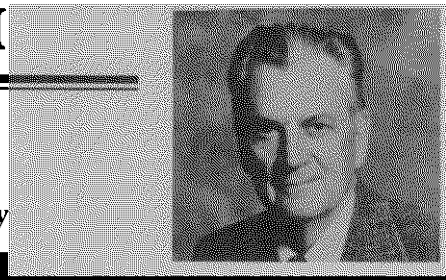

R. C. "Doc" Spears
Executive Director
Louisiana Engineering Society

LES Spring Meeting

The LES Spring meeting will be held on April 29, 30, May 1, 1982 at the Royale Rouge Hotel in Baton Rouge. The meeting was scheduled to be in Lake Charles on April 22-24, but due to many conflicts it was neccessary to change the location and date.

LOOP Selected as Outstanding Engineering Achievement 1981

The Louisiana Offshore Oil Port (LOOP), Lafourche Parish, has been selected as one of the Ten Outstanding Engineering Achievements in the National Society of Professional Engineers' 16th Annual Outstanding Engineering Achievement competition.

The Louisiana Offshore oil port complex provides deepwater off-loading accommodations in the Gulf of Mexico south of Grand Isle, Louisiana, for deep-draft oil tankers too large to be accommodated by most U.S. ports. From the offshore port and its land-based storage facilities and through connecting facilities, oil is transported to refineries located on the Gulf Coast and in the midwestern area of the U.S.

The Port Complex consists of three main elements:

1) an offshore marine terminal, consisting of platforms and single-point mooring buoys for unloading oil from deep-draft tankers;

2) a large-diameter pipeline for carrying oil from the marine terminal to an onshore storage facility, with a pumping booster station near the shoreline; and

3) an onshore oil-storage facility approximately 25 miles inland.

The Louisiana Offshore Oil Port is outstanding in the annals of engineering feats. The project, first conceived in the early 1970's, was brought to fruition in the remarkably short span of nine years. While the concept of LOOP is not new, it still must be considered as a historic and significant project since the engineering technology utilized in its construction is far advanced relative to similar installations elsewhere in the world.

This project will play a major role in helping to meet the future energy requirements of the U.S. Pipelines connecting to the project will serve to provide oil to 30% of the nation's refining capacity in Louisiana, in the Midwest and even New York State. The total cost of the project is estimated at $700 million.

Congratulations to the Baton Rouge chapter for submitting the project and to Jim Webb, P.E., who prepared the data input.

1982 Outstanding Engineers of LES

Five outstanding LES engineers will be honored on April 30, in Baton Rouge at the annual LES Spring meeting:

Francis C. Roy, P.E., Lake Charles, recipient of the Leo M. Odom Professional Service Award.

Rodney M. Vincent, P.E., Lake Charles, recipient of the Andrew M. Lockett Civic Activities Award.

Hugh A. Thompson, P.E., New Orleans, recipient of the James M. Todd Technological Accomplishment Award.

Michael V. Aderman, P.E., Baton Rouge, recipient of the F. Hugh Coughlin Young Engineer Award.

Waldemar S. Nelson, P.E., New Orleans, recipient of the A. B. Paterson Award for an Engineer in Management.

The award winners will be featured in the April issue of the *Louisiana Engineer*.

Engineers Club of New Orleans

The Engineers Club of New Orleans invites all New Orleans area engineers to visit its beautiful quarters at 546 Carondelet Street. The club recently celebrated its 30th year of activity, having been incorporated in 1951 through the work of a committee formed by the Louisiana Engineering Society to look into the prospects of forming such an organization.

The club's quarters are comfortable and well equipped with facilities for individual dining or hosting professional or technical society meetings. Luncheon costs are reasonable and the meals are appetizing. Additionally, several professional societies utilize the club's facilities for evening meetings.

The cost of membership in the club is moderate considering that the club enhances the prestige of the profession. The present club membership is in excess of 200 with a goal to increase the membership to 250 in 1982.

The club welcomes any engineer to come visit the club's facilities and meet some of its members. Anyone interested can contact Mrs. Lorraine Rodriguez, Executive Secretary at 581-7981 for further details.

Engineer's Report Cited

In the United States, 6% of all degrees are awarded in engineering. This is far behind other countries. In East Germany 40% of the degrees go to engineers, in West Germany 37%, and in Japan 21%. Viewing the statistics another way, the U.S. graduated only 55,000 engineers last year while the Soviet Union graduated 300,000. Business and industry are keenly aware of the shortage of engineers in this country.

Unfortunately, universities do not have the faculty or facilities to increase the engineering enrollments fast enough to make up the shortage. According to Lou Van Pelt, director of placement at Texas A&M, "Some employers want to hire as much as two to three percent of the nation's entire graduating engineering class. There's no way an engineering graduate—anywhere, but especially at Texas A&M—would be able to interview with as many people as are willing to talk with him or her."

Hawaii Enacts New Negligence Law

Hawaii approved a new law in June 1981 that provides for panels to review negligence claims against professionally licensed engineers, architects and land surveyors.

The new law restricts the right to go to court until after the Design Professional Conciliation Panel hears the case. Some key provisions of the law are:

- Any action for damages arising from claims of professional negligence must be filed with the panel. A different panel will be formed for each claim and will consist of a chairperson, "familiar with tort settlement," one attorney, one architect, engineer or surveyor.
- The panel will have the power to subpoena witnesses to testify and produce evidence.
- The panel will decide liability and the amount of damages and will file a written advisory decision with the director of Regulatory Agencies.
- The claimant may institute litigation based on the claim in an appropriate court only after a party to the Design Professional Conciliation Panel hearing rejects the panel's decision. Findings and recommendations of the panel are inadmissable as evidence in any subsequent trial.
- No member of the panel will be liable in damages for libel, slander, or any form of defamation of character for any action or decision taken while a member of the panel.

1982 Annual Technical Session and Meeting

The 1982 annual technical session and meeting will be held in New Orleans on March 30-31 at the Rault Center. Seven firms are sponsoring the meeting: Brown & Root, Inc., Chevron U.S.A., Inc., Chicago Bridge & Iron Co., Earl & Wright, McDermott Incorporated, Mobil Research and Development Corp., and Shell Oil Co. The panel discussion theme will be "Stability of Offshore Structures," with Robert M. Meith of Chevron as moderator of the Tuesday evening panel. The panelists are Peter W. Marshall of Shell Oil Co., James R. Lloyd of Exxon Production Research Co., and Clarence D. Miller of Chicago Bridge and Iron Co. Additional papers have been invited from Norway, Japan, Israel, the United Kingdom and the U.S.A. and will be presented Tuesday, March 30, in the afternoon.

For registration forms or additional information, contact R. M. Meith, P.E., at (504) 521-6435.

Roster of Engineering Societies

W. C. Harrison, P.E.

The goal of the Inter-Society Relations Committee of the Louisiana Engineering Society is to establish and maintain an on-going dialogue among all engineers within the State of Louisiana. The members of this committee in each LES chapter area plan to contact the officers of the other societies within their chapter area on a regular basis, to aprise them of LES activities, to work with them to avoid meeting conflicts, promote joint meetings, solicit their support of and participation in legislative and Engineers Week activities, and to offer the support and participation of LES in their ongoing activities.

To this end we have compiled the following directory of engineering societies. If your society is not listed, please contact the LES state office.

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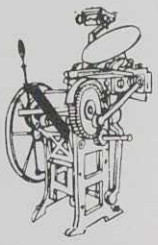

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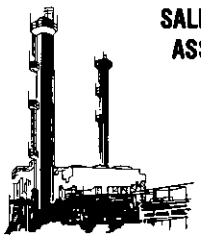

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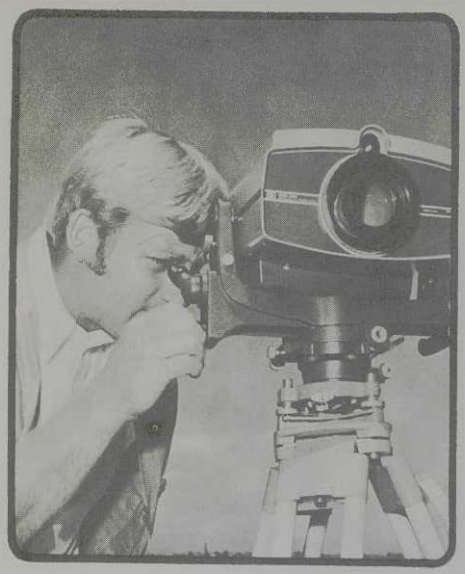

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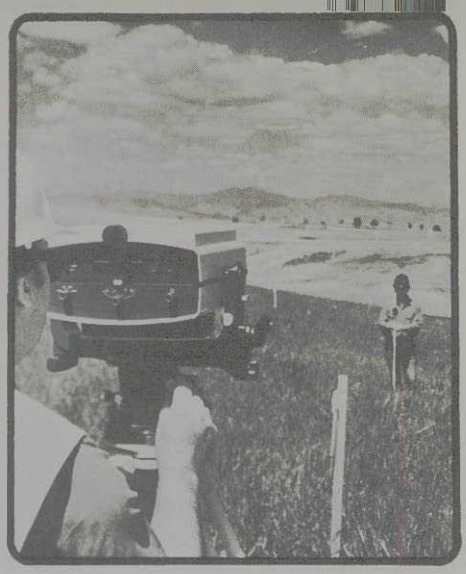

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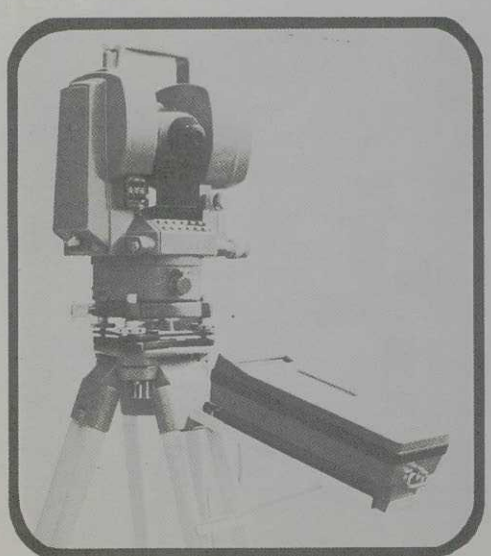

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National Engineers Week

This year's observance of National Engineers Week was one of the most successful ever, reflecting a lot of time and effort dedicated by each chapter to the project. Outstanding public relations were realized from T.V. and radio interviews combined with newspaper articles containing photographs and proclamations. No doubt the public has been reassured that we will be able to maintain America's prominent technological position in the world following our efforts that made the Atomic and Space ages possible.

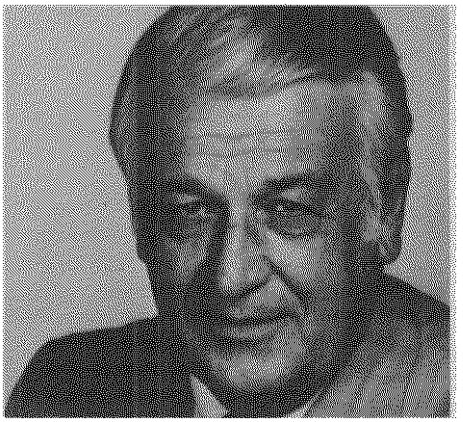
The New Orleans and Baton Rouge chapters had a record attendance at their luncheon and dinner meetings, respectively. In the "city," over 250 engineers representing 14 different engineering societies heard a most informative talk by James E. Fitzmorris, Jr., Executive Assistant to the Governor, on the status of Industrial Development in Louisiana. Dr. John J. McKetta, a Joe C. Walter Professor of Chemical Engineering at the University of Texas at Austin, presented to an overflow crowd in Baton Rouge the depressing "U.S. Energy Picture in 1981." Speakers and their topics covered at other chapter banquets included (1) Lake Charles - Gordon Hebert, member of the Planning Division of the Corps of Engineers - "The Atchafalaya Basin;" (2) Shreveport - Ed Tilton, Deputy Director of Earth Resources Laboratory with National Space Technology - "United States Space Shuttle Program;" and (3) Lafayette - George Bode, Registered Patent Attorney, U.S. Patent Office, and an engineer - "The U.S. Patent System."

NSPE Scholarship Program

The Louisiana Engineering Society Scholarship Committee, with Paul Hale as Chairman and Norman Marsolan as Vice-Chairman, has completed another well done job. Paul and Norman should feel justly proud of the program interest that has developed in the state since they volunteered for their positions a few years ago. This year, the chapters received a total of 121 applications from high school seniors for NSPE Engineering scholarships. Of these, 50 were submitted to the Scholarship Committee. After many hours of hard study, the list was reduced to 31 state finalists. The national winners will be announced around April 1, 1982, with the top runners-up being eligible for LES scholarships, of which there were three last year.

NSPE Winter Meeting - January 17-23 - Phoenix, Arizona

The unofficial registration of 600 representatives from the State Societies, including wives and/or husbands, were treated to a series of well organized meetings during the day and exceptional dinner arrangements in the evening. Louisiana attendees were: Arthur DeFraites, NSPE Vice-President PEPP;



John E. Ritter, President
LES President

Waldemar Nelson, Chairman of National Management Information Committee; E. E. Moncla, National Director; R. C. Spears, Executive Director; Edward Lanier, PEC Practice Division Governor; Billy Rentrop, PEI Practice Division Governor; John Bergeron, State Vice-Chairman PEI; Jim Porter, PEG Practice Division Acting Governor; Lamon Moody, State President Elect; and the writer.

Proceedings during the National Directors Meetings over a two and one-half day period are briefly summarized below:

The NSPE $4,000,000 budget for the current year was based on a membership expansion of more than double the current projection, resulting in an expected short fall of $220,000.

A review of ways to decrease costs is being conducted and some ineffective programs may be eliminated.

A motion to increase NSPE dues by $5.00 in most categories in 1983 passed. This is the maximum amount permitted by the by-laws.

A resolution from Utah to discontinue the winter meeting of the Board of Directors after 1987 failed. The small savings did not justify the elimination.

A motion for NSPE to pay only 50% of the national directors' travel costs, with the state societies paying the other 50%, was rejected by a majority of the board.

The board voted overwhelmingly in opposition to increasing the number of directors to the number of votes for the states. This would have more than tripled the size of the board.

The issue of how to include/exclude technologists in the NSPE structure was delayed until the Omaha summer meeting.

A new administration policy was approved allowing affiliation of those groups whose membership and leadership have a close affinity to the goals and interests of NSPE.

The 50th Anniversary celebration for NSPE will be during the 1984 annual meeting in Washington, D.C. The state societies are urged to schedule their annual meetings to coincide with the time and location of the NSPE annual meeting.

The NSPE PAC expects to distribute $275,000 during the 1982 election year. State PAC's are now in 33 states with 7 more under consideration.

The number of NSPE scholarships has increased by 20% this past year. Over $350,000 will be awarded in 1982.

A professional liability insurance plan has been established through NSPE to cover the individual engineer (excluding those in private practices) for a minimal cost of $85.00 per year. This covers all legal fees, plus $200,000 per occurrence, with a $600,000 annual aggregate.

In 1980, AAES (American Association of Engineering Societies) was formed. NSPE, at a cost of $94,000 in 1981, was a charter member in a group of 43 engineering societies. Thus far, the role of NSPE in AAES has not been satisfactory and West Virginia introduced a resolution to sever relations. Following much discussion, a compromise was reached in which NSPE will work to modify the structure of AAES as we feel it needs to be. Either party is at liberty to terminate the agreement with at least six months notice.

A resolution to establish a civil defense task force to provide professional leadership in the civil defense effort passed.

The Professional Schools Recognition Committee was directed to immediately initiate steps to recognize two or more professional schools of engineering.

Waldemar S. Nelson, P.E.

For NSPE 1983 President-Elect

Waldemar S. Nelson, P.E., New Orleans, has been unanimously nominated for President-Elect of the National Society of Professional Engineers (NSPE) by the Louisiana Engineering Society. Mr. Nelson is an outstanding member of LES and NSPE.

LES is proud to claim Mr. Nelson and we know of no one more qualified to lead our national society. Thus far, three other candidates have been nominated from other states.

Congressional Fellow Program

The following is the text of an advertisement in a recent ET concerning this program:

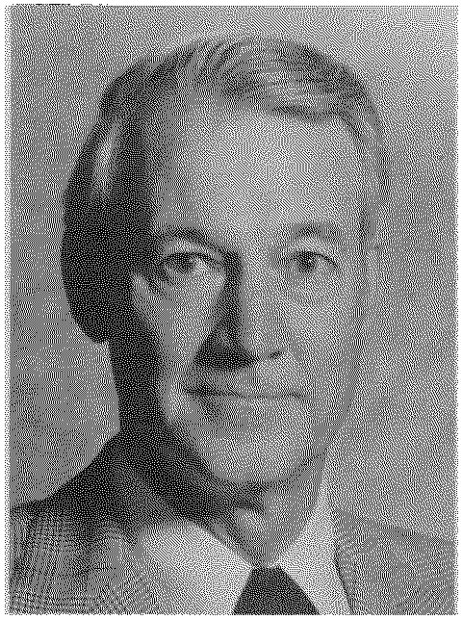
"If you are an early-mid-career engineer employed in industry, you may qualify to serve one year on the staff of a member of Congress or Congressional Committee as an NSPE-PEI Congressional Fellow. This is an opportunity to bring your engineering expertise to the halls of Congress where you will be an important staff advisor on technology-related legislative issues. And at the year's end, you'll bring Capitol Hill experience, insights, and contacts back to your engineering job in industry."

Your employer must be willing to pay half your salary. NSPE-PEI will pay the other half, as well as other expenses. Applications for the 1983 Fellowship Program must be at NSPE Headquarters no later than April 30, 1982.

L.E.S. Outstanding Engineer Awards

Leo M. Odom Award For Professional Services

The Leo M. Odom Award, named after its first recipient in 1972, is given for distinguished service to the engineering profession in Louisiana by a registered professional engineer member of the Society who, over a period of long duration, has demonstrated leadership in technical societies and other professional engineering groups.



Francis C. Roy, P.E.

Francis C. Roy, P.E., vice president, Industrial Equipment and Engineering Company, Lake Charles, is a native of Ioa, Louisiana. He graduated from Louisiana State University, Baton Rouge with a B.S. degree in electrical engineering and received a M.S. degree in electrical engineering from the University of Texas, Austin.

He has served in the Air Force, was an electrical engineer with Allis Chalmers, Milwaukee, a science and math teacher at Jeff Davis Vo-Tech school in Jennings and associate professor of electrical engineering at Louisiana Tech University, Ruston prior to joining Industrial Equipment and Engineering in Lake Charles.

Mr. Roy has served as secretary-treasurer, vice president and president of the Lake Charles chapter and as state director, secretary-treasurer, vice president and president of the Louisiana Engineering Society. He is a registered professional engineer in Louisiana and a member of the State Board of Registration for Professional Engineers and Land Surveyors; a member of the National Society of Professional Engineers (NSPE); a senior member of the Institute of Electrical and Electronics Engineers (IEEE); a member of Eta Kappa Nu and Tau Beta Pi honorary professional fraternities.

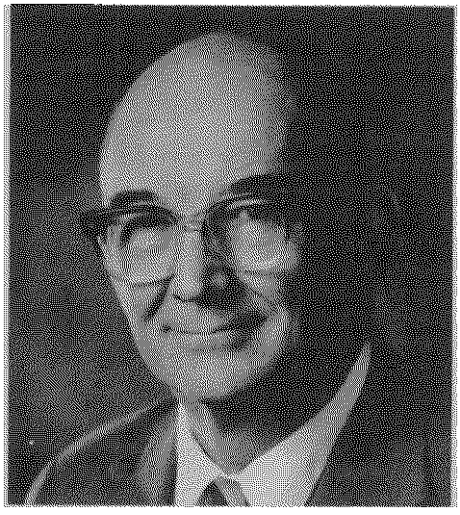
Mr. Roy is respected in Louisiana and neighboring states as a professional engineer, and has appeared on numerous occasions before a variety of audiences as an interesting and thought provoking speaker. On the lighter side, he has entertained at almost every state meeting with "cajun" stories in the true dialect.

He is active in his church, Immaculate Conception in Lake Charles, as a lector, member of the Parish Council, and teacher in the high school religious instruction program. He is married to the former Pauline Dischler of Rayne.

He has given many years to the improvement of LES and the profession, all in keeping with the ideals and criteria of the Leo M. Odom Professional Service Award. His track record is an inspiration to other engineers to take a greater part in the advancement of the profession and its service to mankind.

A. B. Paterson Medal for An Engineer in Management

The Louisiana Engineering Society has a special award for the engineer who distinguishes himself in management. This is the A. B. Paterson Medal, which was first given in 1965. Albert B. Paterson, an active member of the Society from 1923 until his death in 1952, was an engineer, administrator, executive, banker, civic leader and humanitarian.



Waldemar S. Nelson, P.E.

Waldemar S. Nelfon, P.E. is founder and chairman of the board of Waldemar S. Nelson and Company, Inc., a New Orleans based general engineering consulting firm employing over 250 engineers, designers and other support personnel. He is a graduate of the School of Engineering of Tulane University and worked in various locations and in several fields before opening his own practice in 1939. He is a registered professional engineer in 35 states. He is a widower and the father of five children; two of his sons are engineers and practice with him.

Mr. Nelson was formerly vice president of the Southwestern Region of NSPE. He has served as chairman of the NSPE Board of Ethical Review; treasurer of the National Council of Engineering Examiners; president of the Louisiana Engineering Society; chairman of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors; president of the Engineers Club, New Orleans; president of the Society of Tulane Engineers; president of the Tulane Alumni Association; and is presently a Trustee of the Tulane Engineering Foundation.

Among memberships held by Mr. Nelson are those in the American Society of Mechanical Engineers; American Society of Civil Engineers (Fellow); Institute of Electrical and Electronics Engineers; Society of American Military Engineers; American Public Works Association; a Diplomat of the American Academy of Environmental Engineers; Tau Beta Pi, Pi Tau Sigma, and Eta Kappa Nu honorary engineering fraternities.

Honors granted him during his brilliant career include the Distinguished Service Award of the National Council of Engineering Examiners; Outstanding Engineering Alumnus Award from Tulane University; and the Louisiana Engineering Society's Public Relations Award (1975) and the Professional Service Award (1977).

Mr. Nelson serves on the vestry of St. Andrews Episcopal church; has held office in several church and school groups; and has long been active in such civic organizations as the Boy Scouts of America and the Chamber of Commerce. He is past president of the Board of Commissioners of New Orleans City Park which manages a 1500-acre municipal park, and continues serving with this organization.

Mr. Nelson's outstanding engineering management accomplishments and his active participation in his profession make him a distinguished recipient of the A. B. Paterson Medal for an engineer in management.

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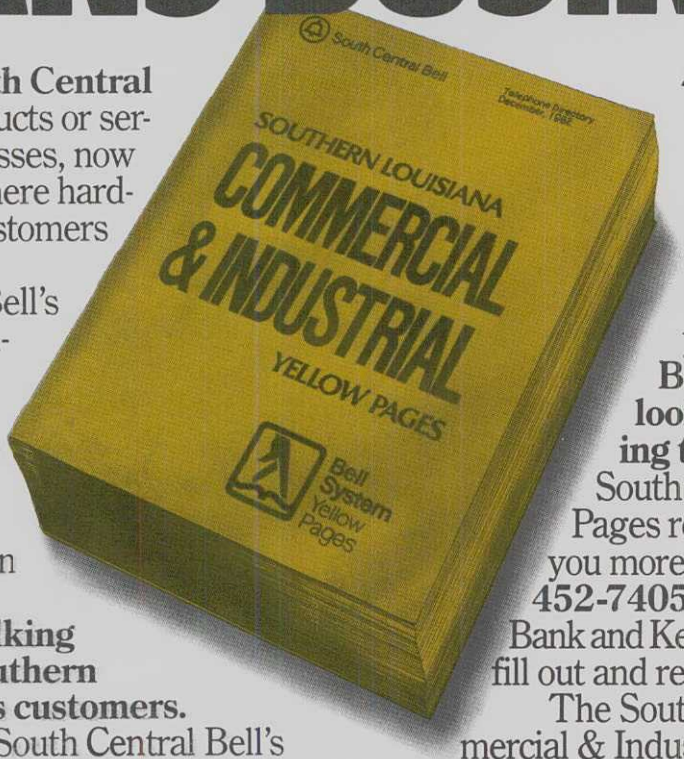

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Address LES Communications and Change of Address Forms to LOUISIANA ENGINEERING SOCIETY, P. O. Box 2683, Baton Rouge, La. 70821. Telephone 504/344-4318; 1213 Nicholson Drive, Baton Rouge, La.



ABOUT THE COVER

Our cover this month features all the honorees of the LES Outstanding Engineer Awards. Read the complete story beginning on page 6.

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LOUISIANA ENGINEER
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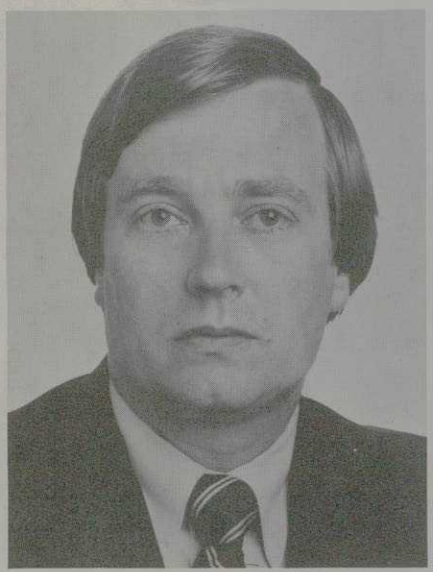
1982 LES AWARDS



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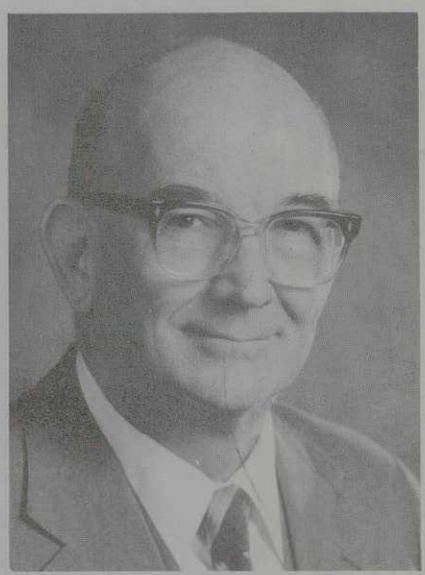

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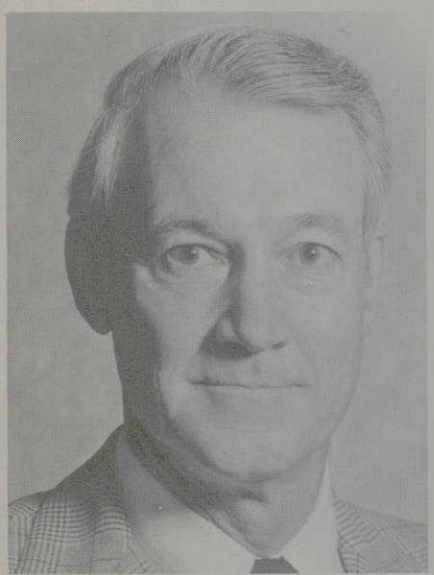

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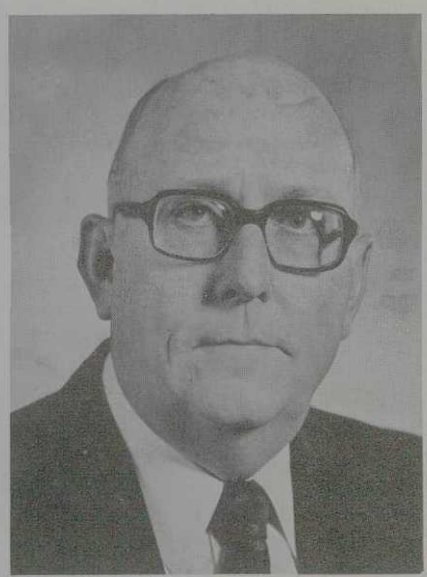
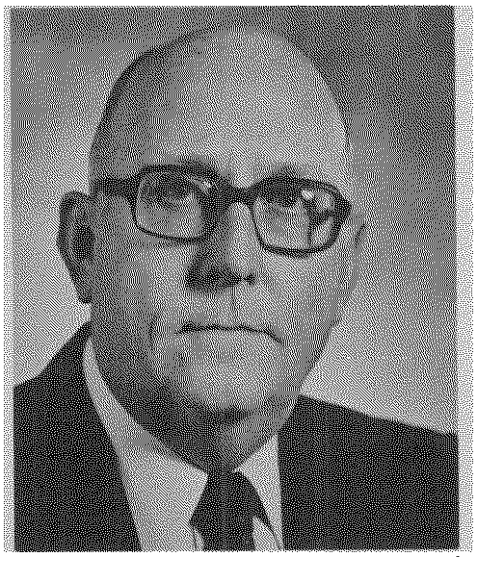


Rodney M. Vincent, P.E.

Andrew M. Lockett Medal For Civic Activities

The Andrew M. Lockett Medal is the Society's civic activities award and was first given in 1951. It is named to honor Andrew M. Lockett, a member of the LES from 1900 until his death in 1945.



Rodney M. Vincent, P.E.

Rodney M. Vincent, P.E. is the administrator-engineer for the Calcasieu Parish Police Jury, Lake Charles. He graduated from Tulane University with a B.S. degree in civil engineering.

Mr. Vincent is a registered professional engineer in Louisiana and a member of the Louisiana Engineering Society, National Society of Professional Engineers, National Association of County Engineers, Society of Tulane Engineers, American Society of Civil Engineers and the National Association of County Administrators.

As a member of the policy board for the Urban Observatory program of the National League of Cities in conjunction with the city of Lake Charles and McNeese State University, Mr. Vincent had the opportunity to contribute his time and effort to direct policy in the development of several in-depth studies. These studies include: the Role of McNeese State University; and inquiry into the Feasibility of Employees for the City of Lake Charles withdrawing from the Federal Social Security Systems; foreign trade zones; land use in Calcasieu Parish; a study of major industries in Calcasieu Parish; and solid waste disposal. Evaluation of these studies by the various public bodies in Calcasieu Parish has resulted in the development of proposals and implementation of solid waste projects, foreign trade agreements, land use policies and industrial development board policies.

Mr. Vincent's memberships and offices held in civic organizations include Calcasieu Parish United Appeals, ten years; greater Lake Charles Chamber of Commerce, board member; pack commission, Cub Scout Pack Nine, Lakeside District chairman; Lake Charles Jaycees, past president; advisory board, Lake Charles Ballet Society; and steering committee, Boy's Village.

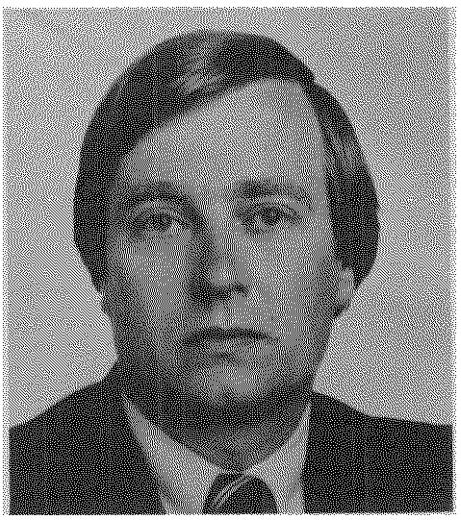
He is active in the First United Methodist church of Lake Charles, serving on the Board of Trustees, Board of Stewards and as Finance Committee chairman.

Mr. Vincent is married to the former Della Neson from North Louisiana. They have one son, Rodney, Jr., who is a graduate of Tulane in civil engineering.

Mr. Vincent's service to his community and profession are in keeping with the ideals of the Andrew M. Lockett medal. His civic involvement will encourage and inspire other engineers to become more active in community, parish and state endeavors.

F. Hugh Coughlin Young Engineer Award

This award is given to an engineer not over 35 years of age who has demonstrated to a high degree capabilities in his chosen field. F. Hugh Coughlin was a member from 1944 until his death in 1979. His interest in and support of young engineers was very instrumental in the establishing of this award. His name was added to the award in 1975.



Michael V. Aderman, P.E.

Michael V. Aderman, P.E., born in Houston but moved to Lafayette at age 1, received a B.S. degree in civil engineering from the University of Southwestern Louisiana in 1971. He is a registered professional engineer in Louisiana, Texas and South Carolina.

Mr. Aderman began his engineering career as an engineer-in-training, State of Louisiana Department of Highways, the bridge design section. From 1974 to 1977, he was senior design engineer with Brown and Butler Consulting Engineers, Baton Rouge. Since 1977, he has been project engineer and manager of the Baton Rouge office of Domingue, Szabo and Associates, Inc.

He holds memberships in the Louisiana Engineering Society, the American Society of Civil Engineers, the American Concrete Institute, the American Welding Society, the Concrete Reinforcing Steel Institute, the Construction Specifications Institute and the Post-Tension Institute. He has served as director, secretary-treasurer, vice president and president of the Louisiana Section of the Baton Rouge branch of ASCE.

Mr. Aderman was design engineer on a number of bridges for the Louisiana Department of Highways, design and project engineer on a variety of projects including ports, docks, shredder plants, hospitals and medical centers. He was the design engineer for the Pointe Coupee Parish Port commission's cargo dock which received a Special Jury Award from the Prestressed Concrete Institute for its "simple, imaginative structural design."

He is married to the former Kathryn Fehlman of Lafayette and they have four daughters.

Mr. Aderman's outstanding contributions and involvement have demonstrated to a high degree capabilities in engineering indicating great potential for further advancement and leadership as a professional engineer, the ideals and criteria for the F. Hugh Coughlin Award.

James M. Todd Technological Accomplishment Medal

The Technological Accomplishment Medal is given for the distinguished services by an engineer for technological advancement or discoveries as contributions to the advancement of engineering.

Hugh A. Thompson, P.E.

Dr. Hugh A. Thompson, P.E. is presently Dean of the School of Engineering and Professor of Mechanical Engineering at Tulane University. Dr. Thompson

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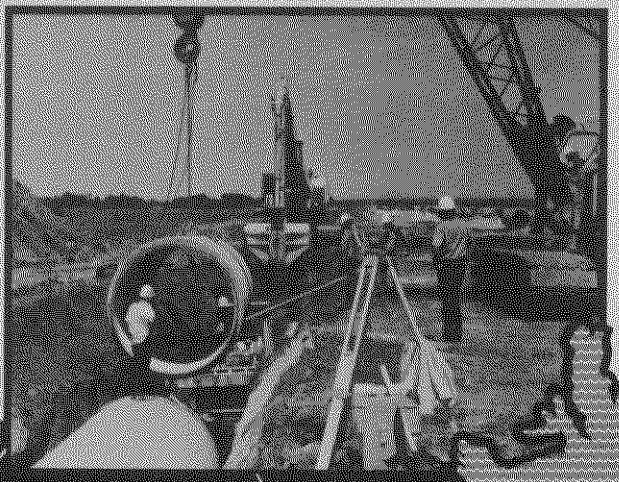

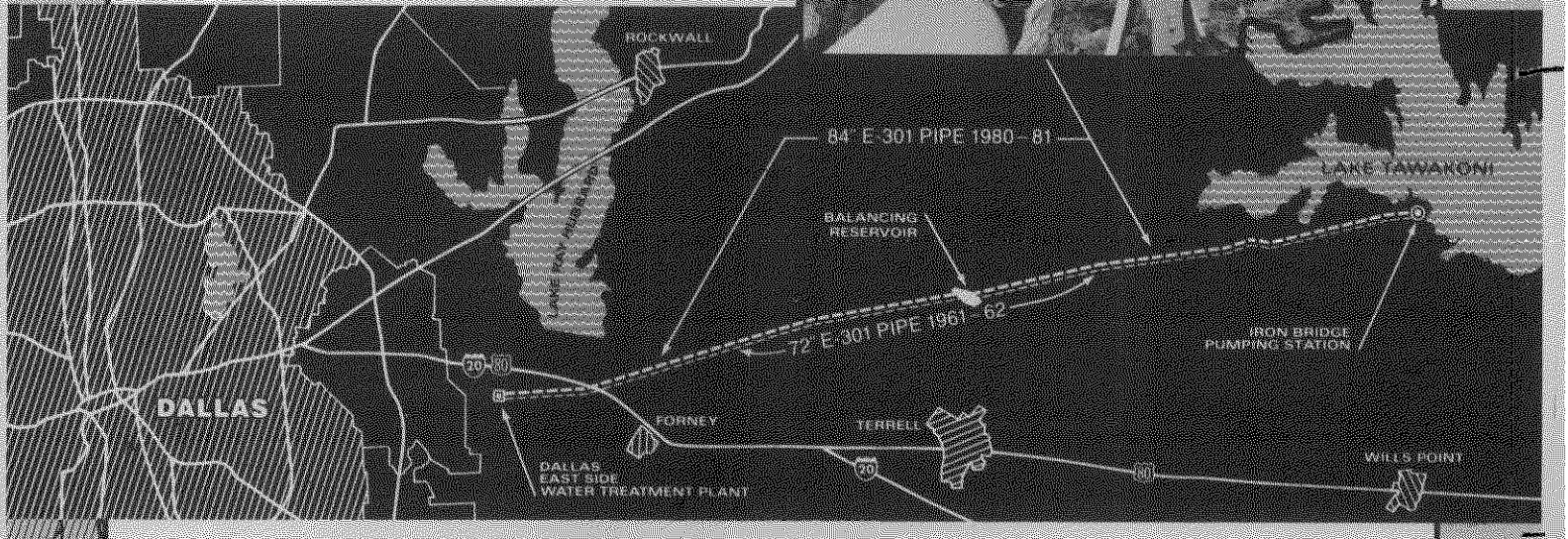

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was born in Chattanooga, Tennessee and attended Auburn University where he received his B.S. degree in mechanical engineering with honors in 1956. He then worked for Mobil Oil Company for four years prior to entering Tulane. He received his M.S. degree in 1962 and his PhD in 1964, both degrees being in mechanical engineering from Tulane. Hugh and his wife Barbara have a son, Jonathan.

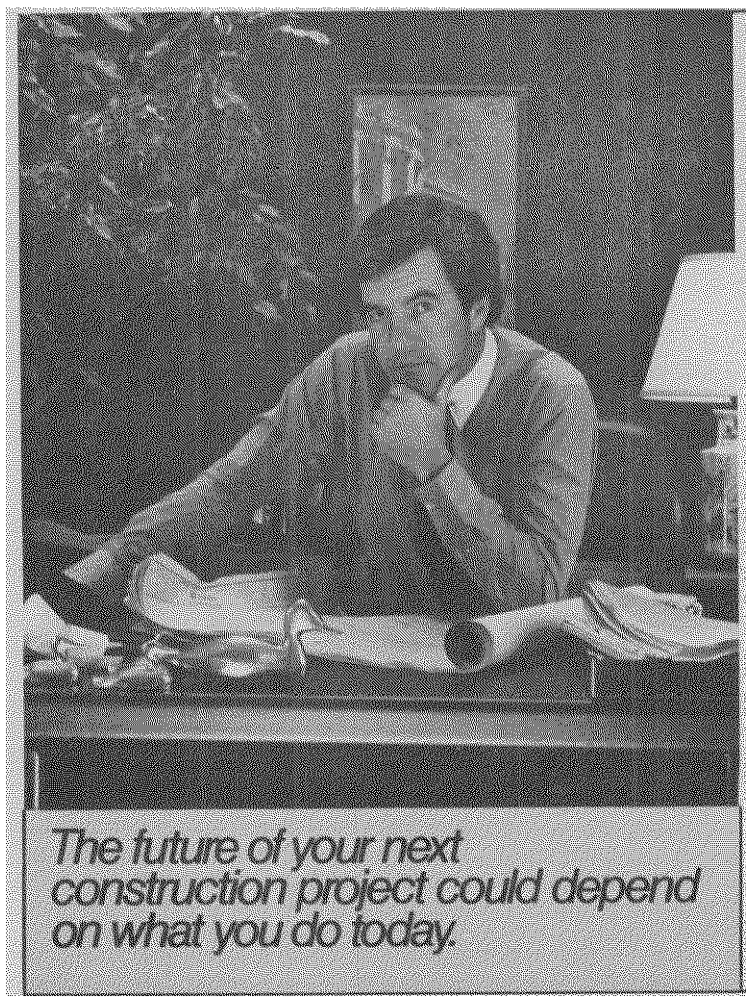
Dr. Thompson is a registered professional engineer in Louisiana. His professional and honorary society memberships include: LES, ASME, LEEE, ASEE, Phi Kappa Phi, Tau Beta Pi, Pi Sigma, Pi Mu Epsilon, Sigma Pi Sigma, Pi Tau Sigma, Eta Kappa Nu, Omicron Delta Kappa and Sigma Xi. He has received three AEC Special Fellowships in nuclear engineering, an award for teaching excellence, and holds three U.S. patents.

Dr. Thompson has made major technological contributions in the field of dynamic stability of structural components and it is this expertise for which he is being honored. However, one would be remiss if he were to limit Dr. Thompson's accomplishments to this single field. His achievements are diverse and spread throughout the fields of thermal performance, vibrating motion, and nuclear engineering, as well as mechanical structural response.

Dr. Thompson first performed a study of the dynamic response of electric substation bus systems to short circuit induced periodic, sinusoidal, mechanical loads. After successfully completing this project he utilized the knowledge that had been gained and applied it to the problem of predicting the dynamic response of cantilevered steel transmission line poles when subjected to non-periodic hurricane force wind loads. Dr. Thompson then tackled the electric utility industry's problem of short circuit induced mechanical failure of transformer windings. He analyzed the periodic response of transformer winding segments when subjected to the magnetic forces associated with short circuit currents. He successfully developed an analytic model to predict the dynamic buckling mode failure of circular arch transformer winding segments and demonstrated its applicability to the winding failure problems.

As a further indication of Dr. Thompson's versatility, he was named principal investigator on a research project to evaluate the aerodynamic response of the Luling-Destrehan Mississippi River bridge, which will be the longest cable stayed bridge ever erected in an area exposed to hurricane winds. His research work verified the design of the bridge and he and his associates at Tulane are developing instrumentation to measure the dynamic response of this bridge after its completion.

Dr. Thompson's outstanding research in the field of dynamic stability of structural components is a consistent record of the development of practical solutions to complex problems. He truly is a worthy recipient of the James M. Todd Technological Accomplishment Medal. The Louisiana Engineering Society is proud to honor Dr. Hugh A. Thompson for his outstanding technological achievements.



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The U.S. Energy Picture in 1981

Editor's Note. The author holds the Joe C. Walton chair, Department of Chemical Engineering, University of Texas, Austin. Dr. McKetta's speech is condensed from "The 1981 U. S. Energy Picture" supplement to the 1980 "The U. S. Energy Problem Grows Worse and Worse and . . . ." These publications are published by the National Council for Environmental Balance (NCEB). The speech was presented at the Baton Rouge chapter's Engineers Week banquet in Baton Rouge on February 25, 1982.

For years, we have heard "real experts" tell us on the TV shows (Meet the Press, Issues and Answers, Face the Nation, etc.) that we would have energy self sufficiency by 1975. Then later, we were told that we would have energy self sufficiency by 1980—then 1985—then 1990. Just recently you have heard from some of the politicians that we will not only be energy self sufficient, but that we would also be exporting large amounts of energy by 1995.

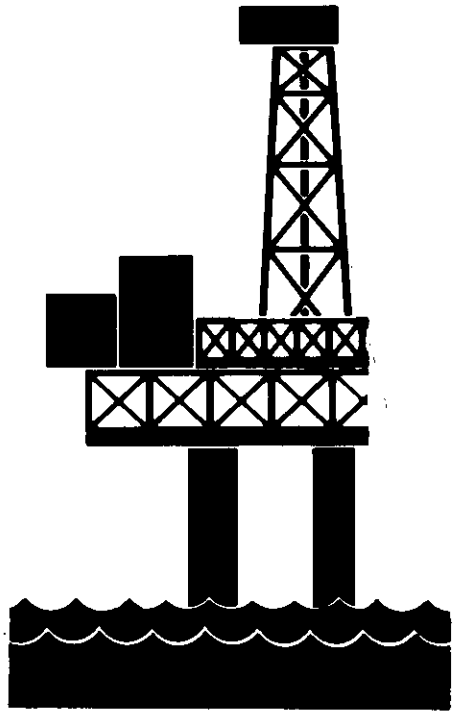
I'm sorry to tell you that there is no way that you will have energy self sufficiency by 1990 or 1995. In the vernacular of the boxer, you have been hit hard on the chin energy-wise—you are flat on your back—the count is up to nine—and the referee has both feet on your chest.

The sad part about our present energy dilemma is that we do have vast, vast quantities of energy of all kinds. Unfortunately, this energy is unavailable because we have been prevented by our own regulatory rules from taking much of the energy from the ground. Also, much of the energy that we are able to bring from the ground cannot be used because of other stringent regulatory rules brought about by the demands of the public. Our energy wounds are self-inflicted. It's quite possible that these wounds may prove to be fatal—yes, fatal to what we have known as the free enterprise system in the United States.

Individuals, as well as groups of people, establish certain priorities under which they wish to operate. When things go awry they do not hold themselves accountable for the troubles that their demands have brought. The priorities resulting from the demands brought about from "Earth Day" pressures have resulted in the use of 3½ to 4 million barrels of oil equivalent a day more than we would have had if these demands had not been adopted by the Congress.

TOTAL ENERGY

During 1979, we used about 18.56 million barrels of oil/day. Since oil was only 47% of the total energy used, this means that the total energy used in 1979 was approximately 40 million barrels of energy equivalent per day. In 1980, there was a *decrease* in the total energy used in the U.S.A. to approximately 17.1 million barrels of liquid a day (38.0 million barrels of energy equiv./day). In 1979, we imported 8.46 million barrels of oil a day at a total cost of $64 billion. This resulted in a $34 billion balance of payment deficit. In 1980, even though we imported much less oil (6.6 million barrels/day) the price per barrel of oil increased from $20 to $37 per barrel. That means we paid peopls mutside the United States $85 billion for the liquid that we imported. This amount is greater than the net assets of General Motors, G. E., Ford, and IBM combined. Most people believe that the decrease in the energy usage from 1979 to 1980 was a result of conservation of energy. In truth, most of the decrease resulted from the fact that the U.S. was in a recession all of 1980 and, therefore, the industrial usage was much lower.



LIQUID HYDROCARBONS

During 1980, over 39% of the liquid we used in the United States came from sources outside of the U.S. border. The total amount of import was 6.6 million barrels/day. Dr. Harold Brown, Ex-Secretary of Defense (under President Carter) said "there is no greater threat to our national security than our dependence on 40% of our imported energy, much of which comes to us over sea lanes that we do not control."

NATURAL GAS

In 1980, we imported 4.7% of our natural gas. Most of this came from Canada. The cost of this imported gas was approximately $3 billion.

U. S. SETS DRILLING RECORD

1980 was a record year for drilling of wells in the United States. The total number of wells exceeded 62,000. The previous high number of 58,300 wells drilled was in 1956. The majority of the wells drilled are development wells or extension wells. Unfortunately, the new field wildcat wells drilled in 1980 is still only 62% of the new field wildcats drilled in 1956 (8,500 in 1980 compared to 13,600 in 1956). The total budget recommended for the Department of Energy by President Carter approached $13 billion for 1981. The drilling industry could have drilled 110,000 average wells with this amount of money. What is your priority — regulation or production?

WINDFALL PROFITS TAX

President Carter recommended and Congress passed a windfall profits tax which was really an excise tax of $227 billion on liquid hydrocarbons. The use of the tax was supposed to be as follows: 60% was to be used to reduce taxes in the United States, 25% was to be used to provide fuel for the poor people and 15% was to encourage conservation and synfuels program. The general public is now outraged because of the increasing costs of liquid fuels. They now realize that they are the ones who ultimately will pay all of this added windfall profit tax. However, everyone is not against windfall profit tax. The OPEC people love it! The windfall profit tax makes the search for oil less profitable—if the search is less profitable they know that we will find less—if we find less they know we will buy more from them— if we buy more from them we are more dependent on them.

The windfall profit tax had a highly detrimental result immediately. Over 23,800 wells were plugged and abandoned in 1980 because windfall profit tax makes them uneconomical. Over 260,000 barrels a day of oil were lost by this one move. About $16 billion and 10 years would be required to build sufficient synfuel plants to make up this loss of 260,000 b/d. What is your priority?

COAL

In 1980, we produced 835.4 million tons of coal (7% more than 781.1 million

tons in 1979) and consumed 705.9 million tons in 1980 (only 3.7% more than 680.5 million tons in 1979). We *exported* 91.7 million tons in 1980 (39% more than the 66.0 million tons in 1979). At a time when we are in a serious energy problem, we have almost 100,000,000 tons of excess mining capacity and 22,000 unemployed coal miners.

In 1970, my National Energy Policy Committee recommended to President Nixon that we double the amount of coal produced (and coal used) in the United States by 1985. This would have been a simple goal that we could have met very easily at that time. President Nixon presented his energy policy to the Congress, but because of the clamor and pressures of Earth Day, Congress did not even take up the bill. Instead, the Clean Air Act and other regulations were passed which resulted in the formation of EPA, OSHA, Mine Safety Administration (MESA), and other helpful(?) groups.

How MESA helped with the coal problem:

a. 22% of the coal mines were closed in 1970 because they could not meet MESA standards.
b. The productivity in the coal mines fell from 16.8 tons per man per day in 1969 to 7.8 tons per day per man in 1979.

For this reason, the utilities in Jacksonville and Tampa, Florida, find it cheaper to buy coal from South Africa and Poland than to bring the coal from West Virginia. Houston Light and Power was offered coal from a company in Australia at a lower price than Houston Light and Power could obtain coal from Kentucky.

Incidentally, in spite of OSHA, there were 32% more accidents in 1980 than in 1970 in the coal mines.

How EPA helped with the coal problem:

a. Over 700 foundries were closed in 1970 because they could not meet the Clean Air Act.
b. 235 coal-fired electric generating plants were forced by the United States government to change from coal to another fuel. They all chose gas or oil (two fuels that were in very short supply). To this day, only one of these 235 coal-fired electric generating plants has converted back to coal. This is a 430 megawatt plant in Massachusetts which was converted back to coal in the spring of 1980.

Eighty percent of the economically recoverable coal in the west is owned or controlled by the Federal Government. Less than 1% of this has ever been leased. Since 1971, a complete moratorium had been in effect on coal leasing programs until three days after the 1980 election. On that date, Secretary of Interior Andrus offered 16 million acres for sale (1.8% of the Federal controlled land). The writer suspects that this was done so that the Carter administration could not be accused of not leasing any land.

So you see there are only three problems with coal:

a. Federal leasing policy makes it illegal to get near the coal;
b. MESA makes it illegal to mine the coal;
c. EPA makes it illegal to burn the coal.

The extremists continuously bring up different arguments against the use of coal. At first they wanted 99.5% removal of the particulate matter from the stack. Now that most of the stacks are essentially free of particulates these antis bring up other topics to rouse the emotions of the public.

a. The carbon dioxide greenhouse effect;
b. Sulfur dioxide health effects;
c. Acid rain and acid lakes.

NUCLEAR POWER

Years ago, our recommendation to President Nixon was that we should have 1,000 nuclear power plants in operation in the United States by the year 2000. We had a very good acceptance of the nuclear program. Eight new nuclear reactors were ordered by industry in 1970, 16 in 1971, 31 in 1972, and 35 in 1973. 1973 is when the anti-nuclear people became highly active so that by 1974 only 23 new nuclear plants were ordered (19 of these have been cancelled). In 1975, only 4 were ordered (3 were cancelled) and in 1976 and 1977 3 were ordered each year and 2 were cancelled each year. In 1978, 2 were ordered. In 1979 and 80, no new plants were ordered.

As I said at the outset, we are not going to have energy self sufficiency this century. However, we could alleviate the energy problem only through large use of both coal and nuclear in addition to conservation. Unfortunately, over 300 new electric generating plants have been cancelled during the past 7 years. Although 300 sounds like a small number, there are only 680 large electric generating plants in the United States. Over half of these are 25 years old or older and 75% of these 680 plants are small compared to the 1,000 megawatt plants that have been cancelled.

What Will Happen by 1985?

I predict that if we continue on the plan under which we are presently operating that:

a. We will average only about 10% conservation per year.
b. The inflation will continue in double digit numbers.
c. We will be producing less energy and importing more.
d. We will have about 10-12% unemployment.
e. We will have a severe recession by 1985.

Dr. Milton Freidman, Nobel prize winning economist in 1977, said the following:

"The Carter proposal is a monstrosity. Its end result would be less energy and more wasteful use of energy. The consumer would pay the high costs—producers of all products would be forced to use energy inefficiently—the Carter proposal is a prescription for stagnation."

We must support fully a program similar to the one proposed by the Halbouty Energy Advisory Committee to President Reagan (immediately after his election).

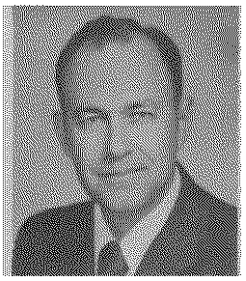
What Can You Do?

You and I must let the Congress know how we feel. We wish to support the Reagan Energy Plan as recommended by the Halbouty Committee. We wish to decrease the importing of large amounts of energy. When you hear or read irresponsible or just plain wrong arguments about energy you should respond. Get yourself fully, completely, sincerely involved. Tell the people the hard truth—you and I and our families and our friends and our citizens have slipped into an unimaginable catastrophe. There is every possibility of great social upheaval in the next five years.

If you don't carry this message—who will?

Copies of the booklets are available from Dr. I. W. Tucker, NCEB, P.O. Box 7732, Louisville, Kentucky 40207. 1980 Booklet, single copy $1.25, 6 to 100, $1.00 each; over 100 copies 75¢ each. 1981 Booklet, single copy $1.00 each, 2 to 5, 75¢ each, 60 to 100, 60¢ each, and over 100, 50¢ each. Both plus postage.

NÔTRE MÉTIER



Paul L. Landry, P.E., Executive Secretary, Louisiana State Board of Registration for Professional Engineers & Land Surveyors.

The officers elected at the Board's regular annual meeting in January were:

H. L. Henry, Jr. .....Chairman
Edward J. McNamara.... Vice Chairman
Arthur R. Theis ..... Secretary

These officers will serve through the January, 1983 regular annual meeting. Officers are elected each year at the January Board meeting. These officers serve on the Executive Committee for the Board. In that capacity they oversee the operations of the office of the Board and they advise the Executive Secretary as to the conduct of the business of the Board between meetings.

Registration & Examinations

Engineers-In-Training and other candidates for Professional Engineer registration who have over three years of engineering experience are urged to apply now for registration. This will provide sufficient time for processing, review and approval of the application to take the fall examination. Processing of an application takes time. The applicant and the Board do not have control as to how long the process takes. We depend completely upon references and universities who must supply vital information directly to the Board. We would like to believe that the references we pick will respond in a timely manner. Some do not. What can you do? Pick your references wisely and follow through with your references to insure that they respond to the Board's inquiries. Do not call the Board office to make an inquiry about your application. There are no positive means of identifying someone on the telephone; therefore upon the advice of the Board attorney, the Board has ruled that the status of an application, test results, etc. cannot be discussed over the telephone. Inquiries can be made by either writing a letter or making a personal visit to the Board office.

Note that in the examination schedule, some examinations are only offered once a year.

To apply for registration or certification, one should call the Board office to discuss your status (degree, date awarded, and experience) and request an information packet. The number to call is (504) 581-7938.

Enforcement

The Certificate of Registration of Mr. Kerry Andrew Crocker, a Professional Engineer, was revoked by the Board on March 9, 1982. Mr. Crocker had been registered as a Professional Engineer with the Board since 1957. On April 17, 1975, Mr. Crocker was convicted of the offense of castration by a jury sitting in the 179th District Court of Harris County, Texas. On May 10, 1978, the Texas Court of Criminal Appeals affirmed Mr. Crocker's conviction and sentence for the offense of castration. Mr. Crocker's conviction is now final.

Based on these facts, the Board concluded that Mr. Kerry Andrew Crocker had committed a felonious act, in violation of Louisiana Revised Statutes Ann. 37:698(A)(3), and is therefore subject to discipline by the Board. Due to the nature of the felonious act committed by Mr. Crocker, the Board ordered that Mr. Kerry Andrew Crocker's Certificate of Registration as a Professional Engineer be revoked pursuant to the authority vested the Board by Louisiana Revised Statutes Ann. 37:698(A)(3). In another hearing held, the Board concluded that a Registrant was convicted of a felonious act. The Board concluded that the Registrant had committed a felonious act, in violation of Louisiana Revised Statutes ANN 37:698(A)(3), and is therefore subject to discipline by the Board.

In this case the Board ordered that the Registrant be privately reprimanded, and that his registration not be revoked or suspended.

The Board reviewed allegations made against Registrant in two other cases. In one case the Board was of the opinion that a hearing or any further action by the Board was not warranted. In a second case the Board ruled that no violation of the rules of the Board of the Statutes had occurred. In this case the Board was of the opinion that the public should be better informed as to what constitutes a property survey, a map, an improvement survey, or a boundary survey. An article on this subject will be published at a later date. In the mean time, the Board reminds Land Surveyors of their responsibilities of informing their clients of the *exact* service they propose to provide. Clients do get upset whenever they are provided a map, when they expected a boundary survey or when they get an improvement survey, whenever they expected a property survey.

One arrest warrant has been issued against a non-registrant for practicing Land Surveying without being a registrant of the Board. The Board Attorney has been directed to file charges against another non-registrant for falsifying a Registration Certificate and representing himself to the public as an Engineer.



Members of the State Board of Registration for Professional Engineers and Land Surveyors — Bottom row, left to right, Dean James W. Reeves, P.E., Edward J. McNamara, P.E., H. L. Henry, Jr., P.E., Arthur R. Theis, P.E. Left to right, top row, Francis C. Roy, P.E., A. J. Brouillette, P.E., James L. Meyer, P.E., Chris Demopulos, P.E., Fred C. Culpepper, Jr., P.E. & Paul L. Landry, P.E., Executive Secretary of the Board.

RECENTLY REGISTERED CORPORATIONS

Applied Geomechanics, Inc. 7625 North Coventry Circle Baton Rouge, La. 70808	E
Associated Engineering Consultants, Inc. P.O. Box 14084 Baton Rouge, La. 70898	E
B F M Corporation 534 Williams Blvd. Kenner, La. 70062	LS
Bevel Corporation 3516 South Ruth St. Sulphur, La. 70663	E
Broussard Engineering, Inc. 18544 Womack Rd. Baton Rouge, La. 70816	E
Rusty Clark Well Survey Co., Inc. P.O. Box 112 Breaux Bridge, La. 70517	S
Decus Engineering Services, Inc. 10950 Darryl Dr., #181 Baton Rouge, La. 70815	E
En-Camp Inc. P.O. Box 578 Zachary, La. 70791	E
The Engineering and Planning Group, Inc. 237 Lafayette St. New Orleans, La. 70130	E

Environmental Professionals, LTD., Inc. E
1908 Clearview Parkway
Suite 203
Metairie, La. 70001

Freese and Nichols, Inc. E
811 Lamar St.
Fort Worth, TX. 71602

Gannett Fleming Transportation Engineers, Inc. E
P.O. Box 1963
Harrisburg, PA. 17105

Gulf Inland Engineering, Inc E
217 Country Club Blvd.
Slidell, La. 70458

Harrison and Lazenby, Inc. E & LS
P.O. Box 728
West Monroe, La. 71291

Koch Engineering Company, Inc. E
P.O. Box 2256
Wichita, KS. 67201

Glen R. Landry Engineering, Inc. E
Rt. 1, Box 75
Erath, La. 70533

Lotz Designers, Engineers & Contractors, Inc. E
215 Witmer Road
Horsham, PA. 19044

Mar-Tech Engineering, Inc E
P.O. Box 4539
Monroe, La. 71201

McCarthy Engineering Inc. E
87 McKinley Dr.
Kenner, La. 70062

Mehlburger, Tanner, Renshaw & Assocs. E
201 South Izard
Little Rock, AR. 72201

Merit Industrial Constructors, Inc. E
P.O. Box 14356
Baton Rouge, La. 70898

Petromas Incorporated E
8237 Lockheed
Houston, TX. 77061

Poché-Domingue-Thomassee, Inc. E
147 Easy St.
Lafayette, La. 70506

S.R.C. Engineers Inc. E
419 Orangewood Dr.
Lafayette, La. 70503

Shilstone Engineering Testing Laboratory, Inc. E
1714 Memorial Dr.
Houston, TX. 77007

Southern Consulting Engineers and Associates, Inc. E
407 Summerfield Dr.
Houma, La. 70360

Viking Resources, Inc. E
1109 Hudson Lane
Suite B
Monroe, La. 71201

Walter F. Zehner, III, Inc. E
3909 Ridgeway Dr.
Metairie, La. 70002

(Continued on page 20)

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1982 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

May 25
July 27
September 28
November 23

ORDER YOUR BIENNIAL ROSTER

Professional Engineers, Professional Land Surveyors, Engineers-In-Training and Land Surveyors-In-Training, registered in Louisiana as of January 1, 1982.

SEND ROSTER TO: _____
Name

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1055 St. Charles Ave.
Suite 415 New Orleans, LA 70130

Address

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City, State Zip

The Roster is **FREE** to Professional Engineers and Professional Land Surveyors who are registrants of the Board.
(Use the address label from this issue of the Louisiana Engineer to obtain your free roster.)
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Chemical engineering faculty position in department with expanding graduate and undergraduate programs, appointment effective August 1982. Earned doctorate, teaching and industrial experience desirable. Specialization encouraged but not required. Rank and salary commensurate with qualifications.

Applications will be accepted until 1 June 1982 or until the position is filled. Send letter of application and resume to Selection Committee, Department of Chemical Engineering, University of Southwestern Louisiana, Lafayette, Louisiana 70504.

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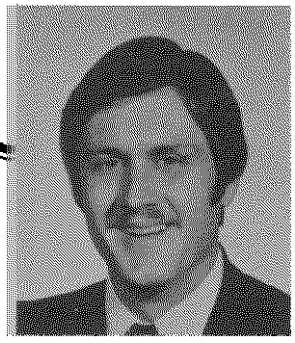

THE SPEC SHEET

Warren J. Wilder
CEC/L Executive Director

The following submission is a couple of timely articles for the consulting engineers. They are extracted from the Design Professional Insurance Corporation publication, *Communique'*, November, 1981.

Fences or Ambulances?
By Charles D. Maurer, Jr.

CHARLES D. MAURER, JR. is a partner in the San Francisco law firm of Maurer, Higginbotham & Harris. He received his Juris Doctorate from Arizona State University and is admitted to practice before the Supreme Court of the United States and the state and federal courts of California, Washington and Arizona. He is on the Professional Liability Committee of the Litigation Section of the American Bar Association and has written and lectured extensively on the liability of professionals. His experience in the courtroom consists of over two hundred trials, including representation of architects, engineers, manufacturers, insurance agents, realtors, doctors, lawyers and businessmen. He is currently petitioning the United States Supreme Court to declare unconstitutional the rule which immunizes attorneys from countersuits by design professionals who have been wrongfully sued.

"It is better to build a fence around the top of the hill than to have an ambulance waiting in the valley below" is a recurring theme sung to juries by plaintiffs' attorneys in cases involving defective design.

Although the maxim is most often applied in products liability cases, it has equal significance in a professional liability context:

- Omit a $5 pressure release valve and you may pay $5,000,000 for the explosion.
- Fail to include a few hundred dollars' worth of drains in the roof system and you may pay to rebuild the entire structure.
- Give your client the economy package now and you may pay for standard practices later.
- Avoid preparing a written agreement describing your services and you may spend time in court answering allegations of empty promises.

Acts or omissions below the level of that expected from a reasonably prudent design professional constitute malpractice. This does not mean your efforts must prove fail-safe. A project can have problems but still satisfy professional requirements. In some cases, an entire job may not turn out as expected, and the designer will not be held accountable.

The key is, what will your colleagues say about your work? Does it rise to the level of the reasonably prudent professional or is it something less?

If the experts agree you have performed in accordance with standard practices, you have fulfilled your obligations. Of course, design experts may differ on how they would have performed the same task, but that is not the issue. Professional opinions may vary, provided they satisfy the acceptable standards of practice dictated by the design community. The design in question need only be reasonable, even if it fails. That is the law.

However, putting the law aside and being realistic, few expert professionals will bless another's bad results. Approval diminishes with the severity of the consequences of the conduct. The more awesome the failure, the easier to find a flaw in behavior.

Plaintiffs' attorneys usually can produce an expert who points to the absence of a fence—that is, a design element which would have avoided the cause of the claim. Consequently, the design professional whose work is under scrutiny may become prey to an ivory-tower intellectual who confuses standard practice with perfection, either deliberately or without knowledge of the distinction. There is a word for the deliberate obfuscator, and there are measures for dealing with him. However, the majority of lawsuits are sustained by misinformed or poorly-prepared experts.

The following suggestions may help avoid having an expert deem your design negligent:

(1) Make safety and the overall integrity of the structure principal considerations, giving special attention to the details in drawings and specifications. Personal injury or catastrophic property damage may subject the design professional's work product to severe scrutiny.

(2) Acquire as much data as possible and formulate a preliminary plan before designing an entire project.

(3) In the event a client asks for cost-effective measures which jeopardize the integrity of the project, make certain that such measures, if implemented at all, are implemented under protest, with the owner and his insurance company accepting responsibility. This may not legally exonerate you from liability to a third party, but it may mitigate or shift the loss.

(4) Include in your contracts and specifications disclaimers regarding safety, supervision, and guaranteed results. Limit your liability to a pre-determined amount for losses occasioned by negligence.

(5) Maintain written documentation of representations made to you by manufacturers and fabricators regarding the performance of their products.

(6) Seek the advice of colleagues or other consultants who could testify as experts on your behalf if necessary.

(7) Be candid with your client about fees and the scope of your services. Keep your client informed as the project progresses.

(8) Seek to acquire the respect of other participants in the project, particularly the contractor. Any party who opposes you to any

Coal



...burning brightly as a future energy source.

The importance of electricity to Americans is an accepted fact. Today, electricity represents 25% of all the energy used in the United States. And by the year 2000, it will represent almost 50% of all energy used. Clearly, electricity will become increasingly important in the years to come, and clearly we should not rely on a single source of fuel to provide it. That's why your investor-owned utility companies are sponsoring research and development programs to find better ways to generate electricity.

An important factor in any solution would be the use of coal. Unlike our oil and gas reserves, coal is in plentiful supply. In fact, many geologists say that at the present rate of consumption there is enough coal to last our country 500 years. Even though all energy costs are going up, environmentally clean nuclear power combined with coal will be the most reliable and economic means of providing electricity for many decades into the future. And your investor-owned electric utility companies think that's important in order to insure you of dependable electric service at a reasonable cost.

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-INVESTING IN YOUR ENERGY FUTURE

Central Louisiana Electric Company *Gulf States Utilities Company* *Louisiana Power & Light Company* *New Orleans Public Service Inc.* *Southwestern Electric Power Company*

THE SPEC SHEET (Continued from page 14)

degree may add weight to the plaintiff's claim.

(9) Keep yourself and your staff well informed through continuing training and education.

(10) If asked to testify as an expert, research and gather all the facts before expressing an opinion. Keep in mind that design professionals need only be reasonable, not perfect.

With these preventive suggestions as fences, there will be little need for ambulances. The well-prepared design professional will avoid charges of negligence, and an expert will find little, if anything, to criticize.

Contractor-Initiated Change Orders

A prominent structural engineer, who often serves as an expert in analyzing major construction failures, recently brought to our attention that changes to a project sometimes are made by contractors without the knowledge of the design professional. Such changes may later have a devastating effect.

As a rule, the general contractor or his subcontractors writes to the design professional suggesting a change. If the change is technically feasible, the design professional issues a change order.

Occasionally, however, a general contractor or his subcontractors may communicate with the design professional through shop drawings. In such cases, changes to the original plans and specifications are not always evident.

For example, if a designer has indicated ¾-inch bolts—thousands of them—throughout a specification and suddenly calls for two 1-inch bolts, it might seem plausible for a contractors' draftsman to substitute three ¾-inch bolts in the shop drawing in order to maintain standardization. Such a change in shop drawings could easily be missed by a reviewing design professional, but the results of the change could have implications beyond what the well-intentioned contractor's draftsman might expect—particularly if the two 1-inch bolts were specified to connect with another part of the design and the connections no longer fit.

If a failure then occurs, the design professional could find himself facing a jury and hearing a contractor say, "The design professional *approved* the shop drawings we submitted." Even though the design professional may have qualified his approval with a disclaimer (stating the drawings were reviewed only for general conformance with the plans and specifications and that the contractor is not relieved from complying with the drawings and specifications), a jury would tend to focus on the approval, however tacit, and find contributory negligence on the design professional's part.

To avoid this quandry, the structural engineer suggests that all design professionals include in their specifications the following statement:

> The general contractor and his subcontractors must submit in writing any requests for modifications to the plans and specifications. Shop drawings that are submitted to the design professional for his review do not constitute "in writing" unless it is brought to the attention of the design professional that specific changes are being suggested. In any event, changes to the plans and specifications by means of shop drawings become the responsibility of the person initiating such changes.

This may seem to be an extreme effort to improve the communication between the engineer and the contractor, but, as pointed out in the August 3, 1981, *Business Week* commentary on the Hyatt disaster," . . . some common ways of organizing the construction of projects isolate the people who design them from those who build them." Citing the chairman of a Cambridge engineering firm, the article goes on to observe, "a large percentage of the time, collapses seem to be related to details rather than large structural principles."

Building your Workforce

Considering that design professionals would never incorporate untested theories in their designs, it is a wonder that they seem so willing to accept on faith the numerous theories on how to recruit prospective employees.

Since the quality of the workforce has great impact on the exposure to professional liability as well as the overall success of a design firm, it is important to apply proven techniques in recruiting superior employees.

Although you may believe you have talent in choosing employees through an interview, or by reading books and articles on the subject, you may save time by curtailing your interviews and ignoring the published material.

In 1976, a trio of University of Cincinnati researchers concluded:

Our findings concerning the hiring impact of the interview are especially disconcerting when coupled with other well-known and documented research findings . . . most important of these, the low validity and reliability of the interview. Based on our work, we would like to concur (as have others) with the futile advice of England and Paterson given ten years ago:

"With full recognition of the improbability of the acceptance of our advice, we would like to suggest a moratorium on books, articles and other writings about 'how to interview,' 'do's and don'ts,' about interviewing and the like, until there is sufficient research evidence about the reliability and validity of the interview as an assessment device to warrant its use."

Of all the decisions that a design professional principal makes, none is more important than the decision to hire a particular person. Nothing affects the performance and ambience of a professional firm more than the capabilities and personalities of its personnel. If interviews are of little or no value in selecting people, what can one do to improve a professional firm's workforce?

One data-based conclusion in John Sims' dissertation, "Differentiating Characteristics of High-Performing and Low-Performing Engineers," concluded the difference is not related to age of the engineers, college class standing, or formal technical courses taken since graduation. Rather, higher performance is related to colleague interactions, attendance at technical-professional meetings, individual reading and study, and attitude toward one's job as a source of need and satisfaction.

This University of California (Berkeley) dissertation, completed in 1971, was preceded by another data-based study in 1967 by Stanford Research Institute (now SRI International) which also stressed the importance of colleague interaction. That study found that not only did individuals who were recruited by colleagues in a firm perform better, as measured by subsequent salary increases, but their retention rate was much better. That study also concluded that those individuals who took the initiative to seek out a position, rather than respond to an ad or enlist in a placement service, also became superior performers.



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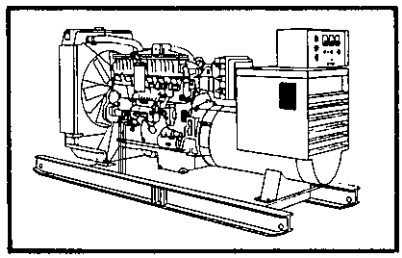

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R. C. "Doc" Spears
Executive Director
Louisiana Engineering Society

State Winners NSPE Scholarship Program

The National Society of Professional Engineers made available 137 scholarships and grants to aid high school seniors interested in pursuing engineering careers in the 1981-82 program.

The LES scholarship committee chaired by Dr. Paul Hale, P.E., met in Ruston on January 27 to consider applications nominated by LES chapters:

Alexandria	6
Baton Rouge	4
Bayou	3
Lafayette	2
Lake Charles	0
Monroe	3
New Orleans	25
Shreveport	7

The LES committee reported the high quality of all 50 nominations received made their selection for state finalists very difficult. The 31 state winners—with scholarships sought—that have been submitted to NSPE for national competition are:

Alexandria Chapter
1. Anthony Scott LaBoa
   University of Texas, Austin
2. Melanie G. Young
   Virginia Polytechnic Institute
3. Joel J. Mertens
   NSPE Grant
4. Clint Allen Luttgeharm
   Rust Engineering Co.

Bayou Chapter
5. Angelique Champagne
   NSPE Auxiliary

Baton Rouge Chapter
6. Kevin Paul McClanahan
   Ashland Oil
7. Sharon Kay Beard
   NSPE Grant
8. William O'Shea Beven
   Rice University

Lafayette Chapter
9. Katherine Anne Frederic
   NSPE Auxiliary

Monroe Chapter
10. Scott Alan Marlen
    NSPE Grant

New Orleans Chapter
11. David Whitney Dufour
    Ashland Oil
12. Tsung-Wen Jane Wong
    University of Houston
13. William A. Yrle, Jr.
    University of Houston
14. Eric Hardy Imperial
    John Hopkins University
15. Nicole Francoise Wolfe
    Phillips Petroleum Co.
16. Kelly Sue Megilligan
    Rice University
17. Christopher James Schwehm
    Rose-Holman Institute
18. Darlene Anne Bothner
    Rust Engineering Co.
19. Sidney Graham Stookey
    Rust Engineering Co.
20. Tuhin K. Roy
    UOP, Inc.
21. Prentiss Ray Berry
    UOP, Inc,
22. Raymond Joseph Shea
    Washington University
23. Scott Patrick Hardey
    NSPE Grant
24. Quynh Thi Ngoc Hoang
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25. Tsung-Pi Peter Wong
    NSPE Grant

Shreveport Chapter
26. Charles Phillips Bryant
    Ashland Oil
27. John Joseph Raush
    Rust Engineering Co.
28. Anita Beth Qrtiz
    University of Texas, Austin
29. George Winfield Treese
    NSPE Grant
30. John Truitt McBride, Jr.
    NSPE Grant
31. Arne Edward Aamodt
    NSPE Grant

Congratulations to each of the students submitting applications and especially to the 31 finalists, the scholarship committee and chapter members involved in the program.

The 31 finalists have been ranked by the LES committee. After NSPE picks the national winners, LES will offer its $1,000 scholarship to one of the finalists. The LES scholarship is given to a student enrolling in one of Louisiana's seven accredited schools.

Not "What Do I Get Out Of It?" But, "What Can I Put Into It?"

It is an altogether too well established policy in connection with inducing people to join associations, to present in glowing terms the individual benefits to be obtained.

This policy, coupled with the rapid multiplication of clubs, societies and organizations, has, perhaps exclusably, resulted in the asking of the universal question, "What do I get out of it?"

The greatest thing in life is the satisfaction that comes from service to one's fellowman—service cheerfully rendered without thought of self—and the man who fails to realize the ideal of service is unfortunate, indeed.

The Louisiana Engineering Society realizes in full this high ideal, conceived in the broad spirit of helpfulness, dedicated to the service of the engineering profession, and, through the profession, to the well being of the public, it is deserving of our heartiest support.

The engineer has been the chief agent in the building of our civilization. Can he be neglectful of the work of his own hands? Is he not obligated to see it through?

The Society offers the means. Let every engineer ask himself the question, "What can I put into it?"

New A/E Automation and Reprographics Systems

A host of new automation and reprographics systems for architects and engineers will be shown for the first time at the upcoming SYSTEMS '82 exposition in Chicago.

A survey of 150 manufacturers of advanced systems reveals that many will be unveiling new equipment or services during the two-day event, June 10-11. SYSTEMS '82 has become in three years of its existence the biggest show devoted to state-of-the-art systems in design firms. The 4500 attendees expected at the Chicago event in June will represent a 100 percent increase over the '81 show, which was unprecedented at that time.

For further information contact: Michael Hough, SYSTEMS '82, P.O. Box 11318, Newington, CT 06111.

Oklahoma State University College of Engineering Wins NSPE Award

The College of Engineering at Oklahoma State University, Stillwater, has received the first NSPE Education Professional Development Award. The Award is presented annually on the basis of career development and employment policies affecting professional engineering faculty members at educational institutions. The presentation ceremony was held during the Society's Winter Meeting in Phoenix, Arizona on January 20.

NSPE and ACEC Propose Merger

The presidents of the American Consulting Engineers Council (ACEC) and the National Society of Professional Engineers (NSPE) issued a joint statement in December announcing that consolidation of the two programs is under "serious consideration."

Summarizing the progress of negotiations, NSPE president Otto Tennant, P.E., of Des Moines, Iowa, and ACEC president William Ratliff, P.E., of Mt. Pleasant, Texas, released names of members of a joint committee investigating ways of increasing coordination and cooperation between the two societies.

Representing the 3800-member companies of the consulting engineers group (ACEC), in addition to Ratliff, are Arnold Windman of Syska & Hennessy Consulting Engineers, New York City and Clarence Gilmore of Clarence Gilmore and Associates, Dallas, Texas. Representatives of the 75,000-member professional engineering society, in addition to Tennant, are Arthur A. DeFraites, Jr., P.E., of Gulf

South Engineers, Houma, Louisiana and Robert L. Nichols, P.E., of Freese, Nichols and Endres, Ft. Worth, Texas.

The committee, meeting in St. Louis in December, concluded that consolidation is a justified alternative because it would most likely result in cost savings and could increase the effectiveness of both groups.

Tennant and Ratliff expressed optimism that the committee will be able to draft a skeleton plan by May, 1982 for achieving the consolidation. Both, however, admit that the real test will come when the plan is presented to the members of their organizations.

Construction Law Seminar

A seminar dealing with timely construction industry topics will be held in New Orleans on May 17-18, 1982. The seminar is sponsored by "Law and Contemporary Problems," a journal of the Duke University School of Law.

Construction claims, counterclaims, and defenses are complex, confusing and cumulative. They often involve tangled knots of design, construction, financial and legal considerations. This seminar is a comprehensive presentation of frequently encountered areas of construction industry conflicts presented by experienced construction industry arbitrators.

For information contact: Construction Industry Seminar, 1100 Country Club Drive, Greensboro, N.C. 27408 (919) 275-0395.

Profit Opportunities in Energy Efficient Design & Construction

A series of *free* one-day energy conservation workshops for engineers will be held in New Orleans/Metairie - Baton Rouge - Shreveport in May. These workshops will present the latest techniques in energy efficient design of new commercial buildings. They will show you how to (sell) energy conservation to your clients and how you can profit by doing so.

The latest simplified graphical and computerized energy efficiency design techniques will be presented at the workshops, including use of micro computers to simulate different building and design concepts.

The workshops are sponsored by the Department of Natural Resources and supported by LES. Similar workshops have been conducted in Louisiana and the response has been highly favorable.

The workshops dates and locations:

New Orleans/Metairie
Tuesday, May 11, Holiday Inn, Fat City

Baton Rouge
Tuesday, May 18, Prince Murat Inn

Shreveport
Friday, May 21, Chateau Motor Hotel

Remember the workshops are free. You may register for one or more of the workshops by calling Mr. Vance Edwards or Mr. Bob Gabour at DNR (504) 342-4596.

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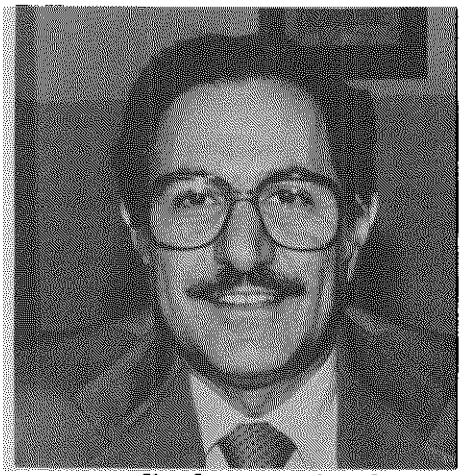

Verdi Adam Appointed To State Board

Verdi Adam, P.E., Director of Maintenance and Field Operations Division for the Louisiana Department of Transportation and Development, has been appointed by Governor Treen to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The appointment became effective February 16 and is for a period of six years.

Adam replaces Larkin Agnew, P.E., who has been a member of the Board for the past nine years.

He graduated from Louisiana State University with a M.S. degree in civil engineering. He has been employed by DOTD since 1953 in various capacities ranging from Bituminous Research Engineer, Highway Research Engineer, R & D Engineer, Materials and Research Engineer, Assistant Chief Engineer, Director of Construction and Services Division, Highway Chief Engineer, and Deputy Ass't Secretary.

Adam is an Honorary Member of Chi Epsilon National Civil Engineering Honor Society. He also serves on numerous panels for the National Academy of Sciences.

He is a member of the Louisiana Engineering Society.

Rudolf Hertzberg, P.E. IN MEMORIAM

Rudolf Hertzberg, P.E., New Orleans, died on January 30, 1982 at the age of 75. He attended Tulane University and studied art in Paris. He worked 34 years for the U.S. Corps of Engineers. At the time of retirement, he was chief of the levee section.

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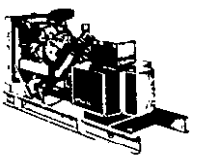

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He was a registered civil engineer in Louisiana.

The State Board of Registration for Professional Engineers and Land Surveyors extends its deepest sympathy to his wife and family.

Hubert G. Sneed, P.E.
IN MEMORIAM

Hubert Garland Sneed, 61, a native of Carroll County, Arkansas, and a member of the Louisiana Engineering Society since 1969, died on March 9, 1982 at Oschner Foundation Hospital, New Orleans.

He was a World War II veteran, a civil engineer and assistant manager of the Houma District of the Louisiana Land and Exploration Company. Hubert was a charter member of the Bayou chapter of the Louisiana Engineering Society and president of the Bayou chapter in 1974-75. He was a member of the Board of Directors of the Louisiana Engineering Foundation; the American Congress on Surveying and Mapping; and the Louisiana Land Surveyors Association.

Hubert Sneed held the respect and admiration of all who knew him. His intelligence, ability, judgement and wit were always graciously shared with whomever he came in contact. He will be missed.

The Louisiana Engineering Society extends its deepest sympathy to his wife, Irene, and family.

Charles H. Green, P.E.
IN MEMORIAM

Charles H. Green, 75, a native of Sumpter, South Carolina, and a Life Member of the Louisiana Engineering Society, died on February 7, 1982 in New Orleans.

Mr. Green was a 1929 graduate of North Carolina State University. He was past president of the William F. Surgi Equipment Corp., New Orleans, and past chairman of the Southern Baptist Hospital and Foundation Board.

In addition to LES, he was a member of the American Society of Mechanical Engineers, the New Orleans Downtown Rotary Club, and the Associated Equipment Distributors. He was a life deacon of the Gentilly Baptist Church.

The Louisiana Engineering Society extends its deepest sympathy to his daughter, Louise Winder, and to his son, Charles H. Green, Jr.

(Continued from page 13)

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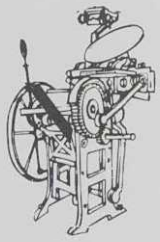

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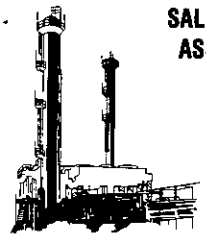

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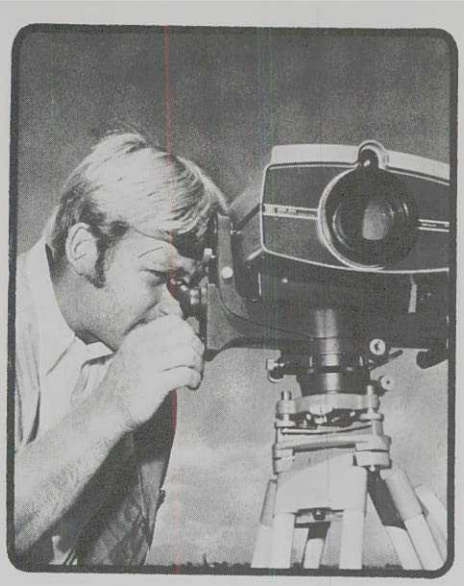

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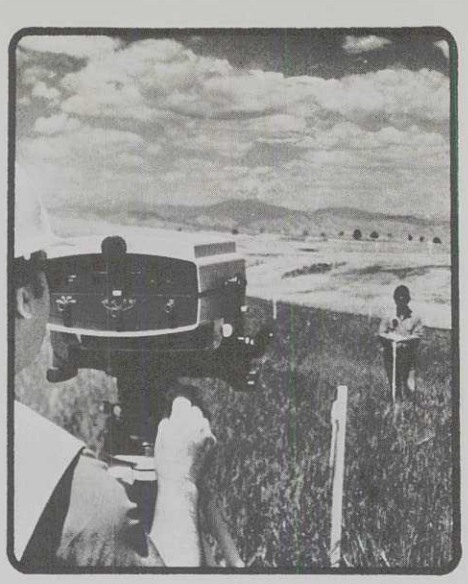

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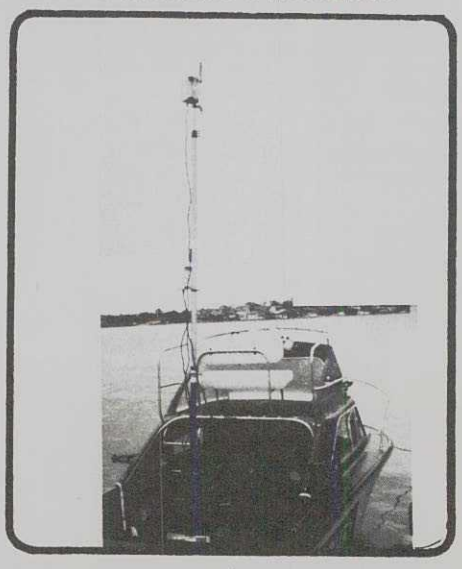

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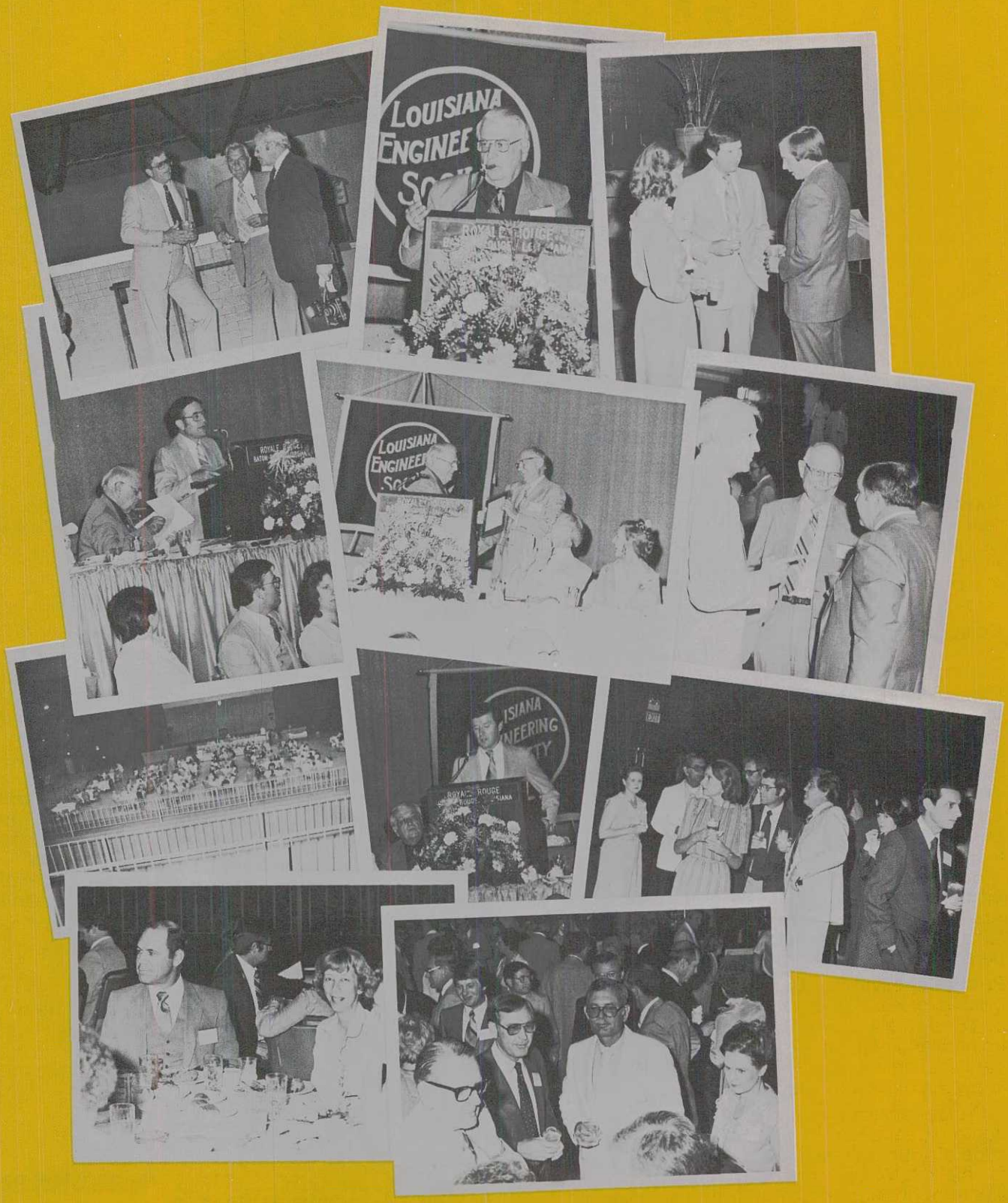

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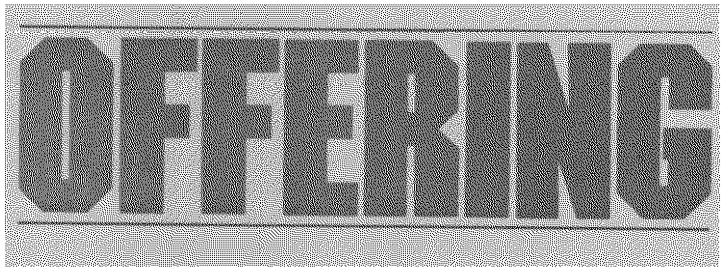

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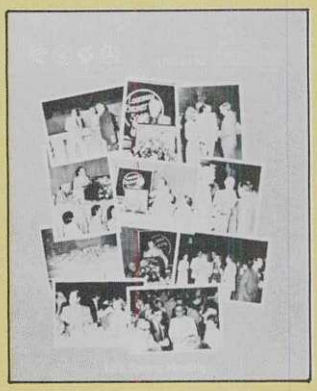
Address LES Communications and Change of Address Forms to LOUISIANA ENGINEERING SOCIETY, P. O. Box 2683, Baton Rouge, La. 70821. Telephone 504/344-4318; 1213 Nicholson Drive, Baton Rouge, La.



THE COVER

Scenes from the LES Spring Meeting. Story and more photos on page 6.

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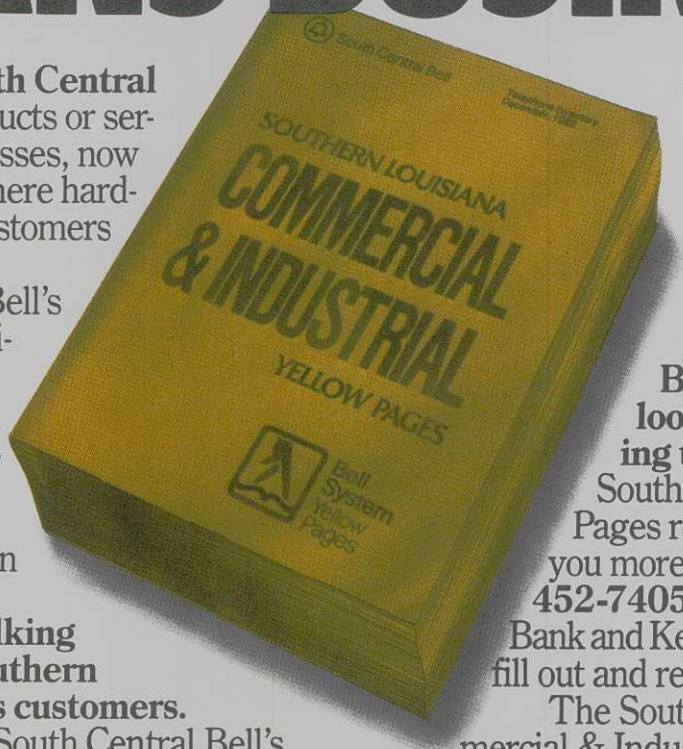

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The Year 1981 - 1982

The final page of the book recording the history of the Louisiana Engineering Society for 1981-1982 is now being drafted. While all of the reports and statistics will not be in for some time, indications are that it will be an excellent year overall with most expectations being met or exceeded. This is simply a reflection of you - the Club Officers, the Committee Chairmen, the Practice Division Officers, the State Directors, the NSPE Director, the Executive Board, the individual members, the ladies' auxiliaries and the State Office - accepting and expeditiously fulfilling the many project assignments required to move an organization forward. All can feel justly proud of their part in the Society for achieving a good year.

It is gratifying to look at the numerous accomplishments over the past twelve months. Some of these are briefly summarized in the following paragraphs.

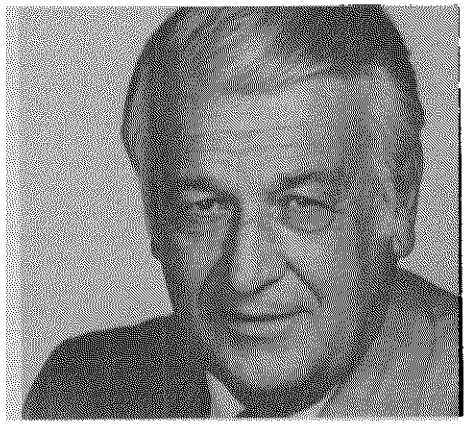
Membership Development

An increase of 325 is projected in this most important area - somewhat short of the 390 target, but still very good. Our total membership is approaching 3,650, the sixth highest in the 54 state and territory societies. As of April 30, 1,654 of our members were also affiliated with the National Society of Professional Engineers, entitling LES to a second National Director for the first time since the present rule for numbers was established. The lead in the state membership contest has periodically changed, but on May 15, the Bayou Chapter, with Jerry Kilby as Membership Chairman, was leading with a whopping 171% of quota. Close behind was Alexandria Chairman Eric Duck with 156%. Four other chapters (Baton Rouge, Monroe, New Orleans, and Lafayette) have surpassed 100%. LES still has a slim chance of winning the NSPE membership contest for the second consecutive year.

LES and NSPE PAC

The committee, chaired by Curtis Dyer and composed of Jerrel Freeman, Vincent Forte, and Lloyd Piper, has almost completed the myriad of details associated with establishing an LES PAC. It has been officially registered with the Secretary of State and the proposed constitution is scheduled for review by the LES Board of Direction on June 4.

The NSPE PAC contributes only to the campaign fund of candidates for Federal public office. This year, $500 each were budgeted for Louisiana House of Representatives' Incumbents John Breaux and Billy Tauzin. LES members A. J. Szabo and Edgar Benoit respectively, personally presented the contributions.



John E. Ritter, President
LES President

LES Directory

The Publication Management Association was authorized by the State Board of Direction to prepare, print, and mail a roster/handbook directory to each Louisiana registered engineer. The book will contain an updated constitution and bylaws, names of award recipients, past presidents, members by chapter, Practice Divisions, etc. The sale of non-objectionable advertising will return a profit to the publishers, as well as $1,000 to LES. The directory should be distributed by September 1.

State Computer

A committee, composed of Edgar Rivera, Dale Hunn, and Chairman John Bergeron, recommended that a computer for the state office costing $12,500 be purchased to primarily handle membership data. This work is currently contracted out at a cost of $5,000/year. The board approved the installation with the financing to be as follows: chapter contributions - $1.00 per member - $3,354; Practice Division contributions - $0.50 per member - $1,608; profit LES Directory - $1,000; cash flow surplus October 31, 1981 - $5,136.00; and overages from contributions and interest - $1,402. The project should be operational by August 1.

Young Engineers

The State Young Engineers Committee, chaired by Eric Duck, P.E., completed the pamphlet named "Professional Engineer?", which was initiated by last year's committee headed by Jack Laws, P.E. The document contains important advice and guidance to persons planning to become professional engineers in the state of Louisiana. Ten thousand copies were printed with the primary distribution being to the graduating engineers in Louisiana.

Engineering Education Crisis

The critical shortage of qualified faculty, the lack of resources necessary to prepare future faculty, and the absence of modern equipment and facilities prompted LES to undertake a study of these and other problems in engineering education at Louisiana universities with ABET accreditation. Currently five outstanding engineers - W. R. Upthegrove, Former Dean, College of Engineering, University of Oklahoma, Norman; E. F. Gloyna, Dean, College of Engineering, University of Texas, Austin; C. V. Foster, Manager, Process Engineering, Continental Oil Company, Ponca City; M. F. Gautreaux, Senior Vice-President and Director, Ethyl Corporation, Baton Rouge; and Otto R. Schweitzer, Professor of Chemical Engineering, University of Southwestern Louisiana, Lafayette, are conducting the study. The recommendations of the committee will be presented to the Board of Regents, the Legislature, university administrators, and others interested in engineering education in Louisiana. The $7,500 cost of the study is being underwritten by business firms and industry in Louisiana.

Similar projects by other state societies have been phenomenally successful in generating industry and legislative support for engineering education. Efforts of the Kansas Engineering Society resulted in the passage of a $900,000 "enrichment fund" to bolster engineering, computer science, and business faculty salaries. On an average, the fund could mean an additional $3,000 per faculty member. The California Society helped secure raises for the entire engineering faculty of the schools in the University of California system. The Alabama Society was instrumental in securing $14 million for a new engineering building at the University of Alabama - Birmingham.

Legislative Committee

Necessity has prompted a high level of activity and many hours of hard work by Chairman Wilfred Barry and the other

Continued on page 19

LES Spring Meeting in Baton Rouge

The LES Spring meeting held April 29, 30, May 1, 1982 at the Royale Rouge Hotel in Baton Rouge was attended by 90 engineers and 45 ladies.

Golf and tennis tournaments were held Thursday afternoon at the Sherwood Forest Country Club. There were 18 golfers and 8 tennis participants.

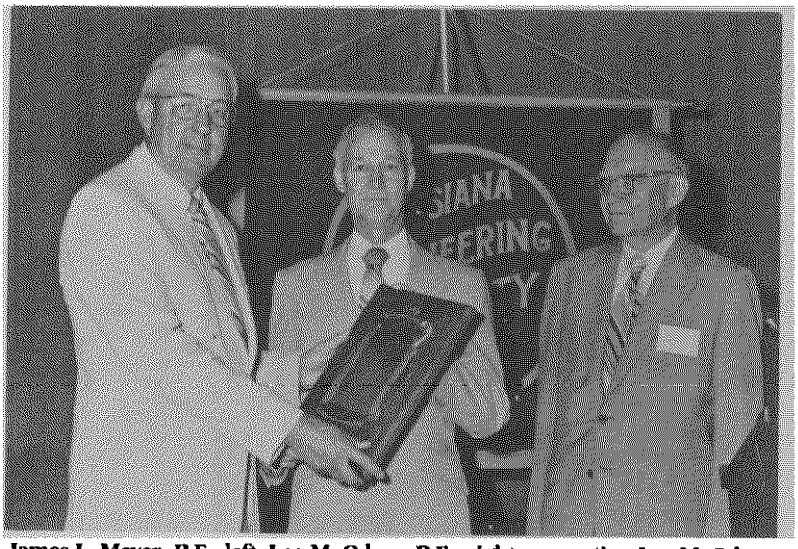
The earlybird cocktails and dinner Thursday evening were enjoyed by over 91 ladies and men. The event was held poolside at the Royale Rouge and with beautiful weather, good fellowship and a delicious barbeque dinner. Tennis awards were presented by Vic Lefeve to the tennis tournament winners: Jean Blanche, first place ladies; Rhoaul Guillaume, first place men: Myra Wintz, second place ladies; and Lewis Farinhold, second place men.

Engineering students from Louisiana Tech, LSU, Tulane, UNO, USL, Southern and McNeese Universities presented excellent papers at a session Friday morning. Carroll Karkalits, P.E., engineering education committee chairman, moderated the session.

Committee meetings were held after the student paper presentations in the morning. Practice divisions, the nominating committee, and the LEF Board of Directors met Friday afternoon.

John E. Ritter, P.E., president, presided during the awards banquet Friday evening where 226 engineers and guests attended. John commented about the LOOP project in LaFourche Parish and its selection as one of the ten outstanding engineering achievements for 1981. He presented an NSPE award plaque to Bill Read, president of LOOP, Inc. The Louisiana Offshore Oil Port is the nation's first deepwater port capable of unloading crude oil from supertankers. Mr. Read discussed the project and then thanked a large number of representatives from engineering firms and contractors who were present at the banquet. Facsimile plaques were presented to representatives from Fluor Ocean Services; Brown & Root; Walk, Haydel and Associates; Fenix and Scission; Petro-Marine Engineering; Continental Page Engineers; Boh Brothers Construction Company; Eagleton Engineers; Odom Offshore Surveys, Inc.; and the LOOP Terminal Authority.

Mr. Ritter introduced Congressman Henson Moore, Louisiana 6th District,



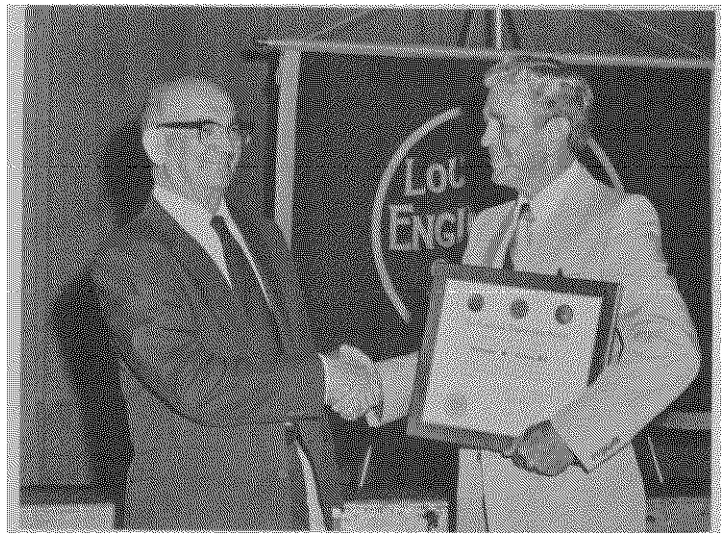
James L. Meyer, P.E., left, Leo M. Odom, P.E., right, presenting Leo M. Odom Award to Francis C. Roy, P.E., center.



John E. Ritter, P.E., left, with Congressman Henson Moore.



Hugh A. Thompson, P.E., left, receiving James M. Todd Technological Accomplishment Award from J. Bres Eustis, P.E.



Waldemar S. Nelson, P.E., left, receiving A. B. Paterson Award from Damon L. Moody, P.E.

who gave a hard hitting talk about Reaganomics and brought the gathering up-to-date on the Washington scene. During his tenure, Congressman Moore has been a tireless fighter in the effort to control government spending and encourage individual savings. He said our nation is suffering with high interest rates, unemployment and too many government regulations. He strongly believes the Reagan plan is the right plan and we must give it time to work.

Francis C. Roy, P.E., chairman of the Honors & Awards committee, assumed the chair for the LES award presentations. Five engineers were honored for their outstanding service to the Society and the profession (photographs shown).

Thirty-two ladies enjoyed a tour of Nottaway Plantation, the nation's largest plantation home, in White Castle. They had lunch at St. Basil's in Plaquemine and then toured the Plaquemine locks and St. John's Church.

The joint breakfast Saturday morning was attended by 55 ladies and men. The 1981 LES Membership Retention Award banner was presented to Tom David, P.E., president of the Alexandria chapter. The Alexandria chapter maintained a 98.5% membership rate in 1981. The Society's overall retention rate was 95%. In addition to the banner, Mr. David was presented a T-shirt with the same words and logo as shown on the banner. The golf tournament winners were announced and presented awards. The winners were:

Lloyd Hoover
low gross
Cecil Raggio
2nd low gross
Oscar Boudreaux
low net
Skip Ritter
2nd low net and closest to pin
Bruce Martin
3rd low net
Bonnie Gautreaux
low score ladies

The Society thanks Bill Harrison, P.E., general chairman of the convention and Florence Forte, chairperson of the ladies activities, and their committees for helping make the meeting so successful and enjoyable.



John E. Ritter, P.E., presenting LOOP plaque to Bill Read, president of LOOP.



Marion Chaney, P.E., presenting Andrew M. Lockett plaque to Rodney M. Vincent, P.E.



Michael V. Aderman, P.E., receiving F. Hugh Coughlin Young Engineer Award from Dale Hunn, P.E.

Our Leaders Say "Yes" to NSPE!

James S. Janssen, P.E.

Several recent LES presidents have made remarks in the LOUISIANA ENGINEER Magazine's column "Presidential Privilege" pointing out the importance of our support of the National Society of Professional Engineers. Jerry Freeman epitomized the influence of NSPE when he described its effects as "not dramatic nor highly visible" (but highly beneficial).

All of our engineering training and practice leads us to want to see our efforts followed immediately by tangible results. Unfortunately, efforts along the lines of promoting professionalism, public relations, improvement in education, better remuneration, working conditions, and similar targets, do not reveal visible results that quickly. But, given time and constant application, they do come. This is even more true on the national level than on the state or local scene.

Francis Roy pointed out that our officers, committee chairmen, and many other members are "giving freely of their valuable time and money in unselfish service to the rest of us." This is so true. Of the 14,000 professional engineers registered in Louisiana, only some 3,000 belong to the Louisiana Engineering Society and of these only about 60% are members of NSPE.

Past President Jim Mayer recounted the anecdote of the non-participating, freeloading engineer who, on his deathbed, asked that engineering society members serve as his pallbearers. When asked why, he answered that those active professional engineers had carried him all during his career and might just as well carry him the rest of the way.

Past President Buddy Moncla reiterated that a practicing engineer has an obligation to participate in professional engineering matters. There is no better way to do this than to belong to the Louisiana Engineering Society and the National Society of Professional Engineers. NSPE does not compete with local associations: its members are also members of their respective state societies.

NSPE does what its name indicates—it gets involved in professional engineering matters on the national level. It works closely with other national engineering groups but leaves matters of a technical nature to the technical societies. It does deal with such matters as ethics, registration, recognition, compensation, career guidance, continuing education and professional development, legislation, and similar subjects.

If these are not sufficiently tangible for non-participants, consider the more direct benefits such as the meetings and publications that membership affords. Skip Ritter has brought our attention to the results of a survey that indicated that 78% of NSPE members responded that they regularly read the NSPE monthly publications. This alone would justify the dues that you would pay as a member. And, bear in mind, these dues are considerably less than those of any trade organization or labor union.

To effect its aims more readily, NSPE works through its officers, through its Board of Directors with members from all states and territories, through its geographical regions, and through its practice divisions. There are five of the latter—Industry, Private Practice, Construction, Government and Education. Louisiana has local sections of every one of these divisions, and several Louisiana engineers are (or have been) active on the national scene in each of them. All LES and NSPE members join the division in which their current activities most aptly place them.

We feel that it is to your best interests to join the National Society of Professional Engineers.

If you are a member of LES, call or drop a note stating that you desire to join NSPE.

If you are *not* a member of LES and NSPE, complete the application below and mail to LES, P.O. Box 2683, Baton Rouge 70821.

Dues for 1982 are prorated for the year and will be less than $36 for LES and $50 for NSPE.

APPLICATION FOR MEMBERSHIP

Complete, detach and mail today!

LOUISIANA ENGINEERING SOCIETY
APPLICATION FOR MEMBERSHIP

GENTLEMEN:

I hereby apply for admission into the Louisiana Engineering Society and agree to comply with the Constitution and Bylaws and the Code of Ethics of the Society. I also apply for admission into the National Society of Professional Engineers, if qualified and if I have indicated 'yes' to question No. 8 opposite.

Please assign me to the Chapter checked below:

Alexandria ☐ Baton Rouge ☐ Bayou ☐
Lafayette ☐ Lake Charles ☐ Monroe ☐
New Orleans ☐ Shreveport ☐
Non-Resident ☐ _____ ☐

Date _____

Signed: _____

_____

FUNCTIONAL DIVISION PREFERENCE
(Check One)

☐ Government ☐ Private Practice
☐ Industry ☐ Education
☐ Construction

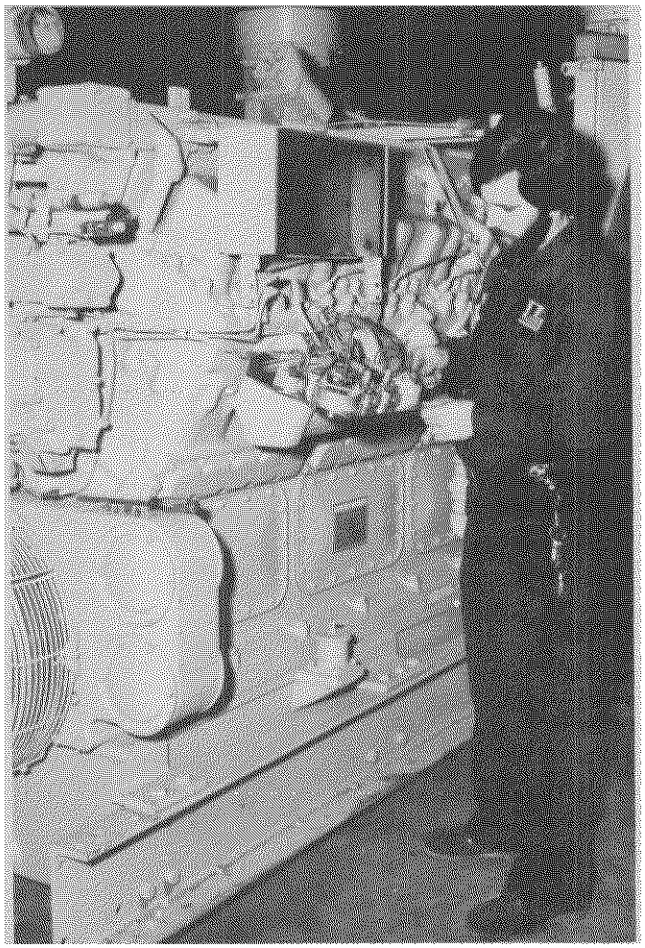
Form No. 100 D

PLEASE COMPLETE THE FOLLOWING SPACES

1. Name _____ (Last / First / Initial)
2. Home Address _____ (Street / City and State / Zip Code)
3. Business Affiliation _____ Position or Title _____
4. Business Address _____ (Street / City and State / Zip Code)
5. Telephone: Home _____ Office _____ Please Send All Mail to: Home ____ Office ____
6. REGISTRATION: PE ☐ LS ☐ EIT ☐ None ☐
   State _____ Reg. No. _____ Branch _____
7. Are you now affiliated with NSPE? Yes ☐ No ☐ If yes, what state? _____
8. If no, do you want to become a member of NSPE? Yes ☐ No ☐
9. Have you ever been a member of LES? Yes ☐ No ☐
10. Birth Date _____ Age _____ Spouse's First Name _____
11. Education _____ (School / Date Graduated / Degree Obtained)
12. Major Engineering Discipline _____

NOTE: If you are a PE, EIT or LS only one LES Member Sponsor is needed, otherwise please list the names of three LES members as your references. A brief professional experience record must be attached if you are not a PE, EIT or LS.

1. _____
2. _____
3. _____



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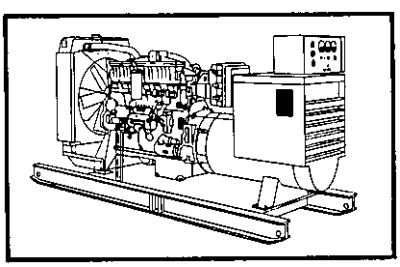

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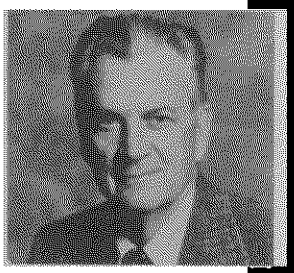

R. C. "Doc" Spears
Executive Director
Louisiana Engineering Society

LES Summer Meeting

The LES summer meeting will be held August 5, 6, 7, 1982 at the Broadwater Beach Hotel, Biloxi.

Practice divisions and committee meetings are planned for Thursday afternoon with an early bird cocktail hour and dinner Thursday evening.

Friday morning there will be a seminar on financial planning led by Philip Long, Little Rock, an expert on estate planning, trusts and tax shelters. Long was one of the financial people who represented the U.S. in economic revitalization planning for Europe and the Far East after World War II. Golf and tennis are planned for Friday afternoon. Installation of LES 1982-83 officers and directors will be held Friday evening at the banquet. Charles H. Samson, P.E., vice president NSPE Southwestern region, will install the officers.

General and Board of Direction meetings will be held Saturday morning. Mark your calendars August 5-6-7, 1982 and join the business and fun on the Gulf Coast. Registration and hotel reservation coupons will be made available in July.

LES-PAC Approved

The Louisiana Engineering Society Political Action Committee (LES-PAC) has been approved as a voluntary, non-profit, unincorporated committee of engineers and others. LES-PAC will make contributions to candidates for local and state public office, who have demonstrated support for the interests of engineers. No LES-PAC money will be used for federal candidates.

All contributors to LES-PAC are members. Contributors of $25 or more are entitled to vote for the Trustees, who will conduct all business of the committee including determining which candidates to support and the amount to be given to their campaign fund.

LES-PAC has obtained a certificate of registration from the State of Louisiana. Your contributions are requested. Contributions to support candidates (hard money) must come from individuals. Corporations may contribute money to administer the program (soft money - stationery, postage, etc.).

1982-83 LES Ballot

A ballot for election of officers, directors and approval or disapproval of amendment to the constitution was mailed to all voting members on May 19. Please vote and return our ballot prior to June 25, 1982.

The nominating committee and Board of Direction slate of officers for 1982-83 are: Dudley Hixson, P.E., President-Elect; Henry E. Markel, Jr., P.E., second vice president; Robert P. Blanche, P.E., secretary-treasurer; Neil H. Klock, P.E. and A. J. Adoue, P.E., state directors.

Officers remaining on the Board for 1982-83 are Lamon L. Moody, P.E., President; T. J. Povinelli, P.E., and Jack W. Roach, P.E., state directors; E. E. "Buddy" Moncla, P.E., national director; and John E. Ritter, P.E., past president.

The proposed constitutional amendment appoints the current president of LES as the second national director when NSPE membership totals allow (LES is allowed one national director for each 1500 NSPE members or fraction thereof). The Board of Direction requests your approval of this change.

Please place your ballot in the plain unmarked envelope furnished. The unmarked envelope shall be placed in the preaddressed envelope, sealed and marked on the back with printed or typed name and signature. In the past, many ballots have been received without the name and signature on the back of the preaddressed envelope and could not be counted.

Engineering Degrees Climb

The number of engineering degrees conferred in 1981 increased for the sixth consecutive year, with the number of bachelor level graduates climbing 8.3%, according to the Engineering Manpower Commission of the American Association of Engineering Societies. The EMC survey reported masters degrees up 5.8% and doctoral degrees 3.3%. Of the masters degrees, minorities received 8 percent, women 6.9 percent and foreign nationals slightly more than 26 percent. Four disciplines (electrical - 22%; mechanical - 21%; civil - 15% and chemical - 11%) accounted for almost 71 percent of all bachelors degrees awarded.

High School of Engineers Program

The Chamber of Commerce Board of Directors formally approved a request from a Chamber task force to talk informally with the East Baton Rouge Parish School Board about establishing a program which prepares high school students for the engineering professions.

Initial inquiries by the Chamber's High School for Engineering Professions Task Force received a favorable response from both LSU, where concern has been voiced about the high percent washout of students in the engineering program, and by members of the business and industrial community, who see the value in pre-college training for promising students who would eventually go to work in local firms.

Task Force members explained to the Chamber Board that should the School Board agree with the concept, an implementation study will be conducted. Initially the Chamber would raise $10,000 for the study, which would recommend curricula, and also determine the amount of support that would be required from local business and industry. The Task Force stressed that not only equipment will be needed, but equally important will be the availability of engineering personnel to train teachers.

The school, which will work closely with LSU and Southern University, will be a school within a school, with the School Board ultimately deciding where the site will be located. Presently no date has been chosen.

Engineers' Median Salary at $39,000

According to the soon-to-be released NSPE Professional Engineers Income and Salary Survey, the median income National Society of Professional Engineers (NSPE) members earned from primary employers reached $39,000 in January 1982. This is an increase of 9.9% in the year since the previous survey. The survey is based on a questionnaire mailed to 70,000 non-student, actively employed NSPE members. The results are based on 19,000 returns.

In a shift of perhaps surprising proportions, NSPE Region 5, encompassing the southwestern states of Wyoming, Colorado, New Mexico, Texas, Oklahoma, Arkansas and Louisiana reported a higher median salary ($40,512) than either the northeast ($40,200) or western states ($40,020), usually the wealthiest regions. The 1981 survey showed Region 5 median at $36,400, in 3rd place. A survey of other NSPE regions revealed 1982 medians of $38,000 (southeast), $37,685 (central) and $36,050 (north central).

Engineer Selection Board

A special ballot was mailed to all registered professional engineers in the state on May 7 to elect two LES members and two CEC/L members to the Engineers Selection Board. Again this year, the LES and CEC/L ballots were mailed together. Principals of firms used both ballots and individual engineers used the LES ballot.

The nominees on the ballots were:

Term July 1, 1982-June 30, 1983
James R. Gore, P.E., Metairie, CEC/L candidate
Richard P. Wright, P.E., Baton Rouge, LES candidate

Term January 1-December 31, 1983
Ronald K. Ferris, P.E., Baton Rouge, CEC/L candidate
Edward I. Lanier, P.E., Sulphur, LES candidate

Space for write-in candidates was made available on the ballots. The return deadline for ballots was June 1, 1982.

NSPE Recommended Engineer Income Ranges Take Big Jump

Following a reevaluation lasting over a year, the 1982 NSPE Recommended Income Ranges for Professional Engineers has just been released with recommended salaries topping $100,000 for the first time. The Pro-

fessional Employment Committee concluded that despite concerns that recommended upper ranges had become too high, a comparison with actual salaries reported by NSPE members indicated that they were not.

Until 1980, the Society's Professional Employment committee released a chart each year describing eight grade levels and salaries for each expressed as a percentage of an "income base rate" which was derived from the best available starting salary data. These percentages ranged from 90% at the lower end of the bottom grade, to 45% at the upper end of grade VIII.

The new Recommended Income Ranges were published in the March *Professional Engineer* magazine and carried an Income Base Rate of $25,200, which represents the predicted national average starting rate for 1982 based on currently reported offers. The Recommended Income Ranges, and the salaries which they represent, are listed below:

1982 Recommended Income Ranges

Engineer Grade	% of $25,200 Base Rate	Recommended Dollar Ranges	Equivalent Federal Grade
I/II	90-130	$22,680-$ 32,760	GS 5-7
III	120-170	30,240- 42,840	GS-9
IV	150-210	37,800- 52,920	GS-11
V	185-255	46,620- 64,260	GS-12
VI	220-300	55,440- 75,600	GS-13
VII	260-360	65,520- 90,720	GS-14
VIII	300-450	75,600- 113,400	GS-15

The full report, *NSPE Professional Engineers Income and Salary Survey - 1982* will be available July 1. Cost is $27.50 for NSPE members and $50 to non-members. Contact NSPE's Information Center, 2029 K Street, N.W. Washington, D.C. 20006.

NSPE Officers 1983-84

Waldemar S. Nelson, P.E., has been nominated by LES for President-Elect of NSPE. Waldemar Nelson is dedicated to the principles of professionalism and professional engineering. He is highly qualified in all areas to lead our national society.

All LES members are requested to write William A. Cox, P.E., chairman of the NSPE nominating committee, P.O. Box 12005, Norfolk, Virgina 23502 stating your approval of Waldemar's candidacy. The NSPE nominating committee plans to begin interviewing candidates on July 17 during the annual NSPE meeting in Omaha, Nebraska.

The NSPE elective offices to be filled for 1983-84 are president-elect, six regional vice presidents and treasurer.

Officers of Engineers Club, New Orleans

The following individuals were elected to the Board of Directors of the Engineers Club of New Orleans:

Howard C. McAfee, President
John J. Avery, Jr., First Vice President
Peter R. Quirk, 2nd Vice President
Charles W. Nelson, Treasurer
R. Emmett Coates, Secretary
J. H. Couturie, Director
Roy E. Johnson, Director
J. Michael O'Hare, Director
Harold Olsen, Director
Carl Bankston, Jr., Director
James Joyner, Director
Oliver S. Delery, Jr., Director
John Michael Pereira, Director
Peter J. Stafford, Director

New Executive Director ASCE

Louis L. Meier, Jr., former Washington counsel of the American Society of Civil Engineers, has been named Executive Director of the Society. Also named was Donald A. Buzzell, former Managing Director for Education and Professional Affairs, as Assistant Executive Director.

Frank D. Musica, formerly Director of Government Affairs, American Institute of Architects, was named Washington Counsel of the American Society of Civil Engineers.

Engineers Club of New Orleans St. Patrick's Day Luncheon

On Wednesday, March 17, the Engineers Club of New Orleans hosted its annual St. Patrick's Day luncheon for club members. This event is held annually to coincide with St. Patrick's Day. St. Patrick is the Patron Saint of engineers.

The group of sturdy Irishmen in attendance sat down to a luncheon of corned beef and cabbage and in true Irish style, everyone talked and no one listened.

An additional feature of the activity was the presence of an artist who developed caricatures of those present.

It was a successful luncheon and a good time was had by all.

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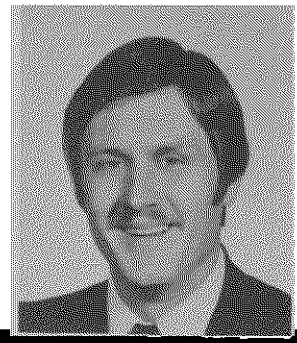

Warren J. Wilder
CEC/L Executive Director

Need for Training Programs and Demand for Drafting Technicians

The following is survey data on the Engineering Technician Training Task Force activities underway by the New Orleans Chamber of Commerce. As the beginning of the report points out, the scarcity of technical personnel has caused the Chamber to come to grips with the problem.

Several businesses in major industrial and commercial sectors of the New Orleans regional economy have experienced problems thwarting their growth as a result of a lack of adequately-trained and qualified technicians in the local labor force. Indeed, the scarcity of technical personnel in some instances threatens the retention of divisional operations of some companies as well as their presence in the Region.

One of the technical occupations frequently cited as lacking an adequate supply of trained/qualified personnel resources is that of *drafting technicians.*

Overview of the Problem

The Economic Development Council/ The Chamber has become aware that business firms with prospective interest in locating to the New Orleans Metropolitan Area have been reluctant to establish operations here due to a shortage of trained and/or qualified drafters in several technical areas.

This condition has also affected existing firms in the Area to the extent that some have begun to consider the relocation of operations to other cities or metropolitan areas. In lieu of relocation, some businesses are reported to have become dependent on out-of-area or out-of-state locations for the performance of much of the technical work involving drafting. Availability of qualified personnel elsewhere versus the lack of such here has made it necessary for companies to place this work with its out-of-area offices or to utilize outside contractural services.

Firms which have maintained local engineering/drafting operations have also become increasingly reliant on out-of-area recruitment to fill these technical positions in their local offices.

Another trend affecting employers locally is the increasing proportion of engineering drafting being done under contract by drafting jobbers. In addition, some companies, particularly the larger firms, have been unable to pursue or to accept new building or manufacturing contracts due to the shortage of qualified drafting technicians in the local labor force.

At the present, many firms indicated that Computer Aided Drafting is taught on an in-house basis or technicians with these skills/experience are recruited from other states.* However, if the Louisiana Vocational-Technical Education System is to provide comprehensive and up-to-date advanced training for industry's requirements, CAD training should be an appropriate component of the curricula adopted and implemented in the system.

Recruiting/Hiring Experience

The companies surveyed were also asked about their experience in recruiting/hiring qualified drafters for positions in their organization. Following is a tabulation showing the percentage distribution of the responses obtained:

Positions are easy to fill.....38%
Moderate effort required to fill.....5%
Positions are difficult to fill.....56%

The majority of responding firms experience a *high degree of difficulty* in filling positions while less than 40% indicated that drafting positions were easy to fill.

In the final analysis, productivity as well as total output for several manufacturers and construction firms in the Region have been impeded to levels below the requirements of demand, assuming the affected firms could increase their output with a supply of properly-trained drafting technicians in the labor force.

Therefore, in order that the New Orleans Region will remain competitive in attracting new industry and retaining existing industry, adequately-expanded and advanced training programs should be implemented immediately within the vocational-technical schools to meet the current and projected demand for technicians in the several fields of drafting required by industry.

Survey by the EDC

Aware of these needs and to obtain greater insight into the present and future demand for drafting technicians, the Economic Development Council (EDC) conducted a survey of 50 randomly-selected member firms of the Chamber which are employers of drafters. These included firms engaged in engineering, architecture, petroleum refining and distribution, oil field services and shipbuilding/repair.

The types of drafting employed by these 50 firms can be classified generally in 3 major disciplinary groups, with some employing personnel for more than one type of drafting, as listed below:

Type of Drafting	Number of Firms Employing	% Distribution of Responses
Civil/Structural/ Architectural and Geological	48	48.5%
Piping/Mechanical/ Marine and Designers	33	33.3
Electrical/Instrumentation	18	18.2
	99	100.0%

Although not listed in the above categories, a number of companies, particularly the larger employers of drafters, also indicated a need for technicians with skills in *Computer Aided Drafting (CAD).* A total of 15 companies of the 50 contacted (30%) responded that CAD was currently being utilized or perceived a need for CAD training of their personnel in the near future. However, due to the relative newness of this form of drafting, projections of demand are considered to be hazardous. On the other hand, firms responding felt strongly that there would be a growing demand for CAD skills.

Average Salary Levels

Employers were also asked for information on the average starting salary levels or ranges for drafting technicians. Tabulations of the results (weighted by the size of the employer's drafting employment) suggest average entry-level salary in the $10,000 to $11,000 per year range for 34 responding firms.*

Projected Demand for Drafting Technicians

The main focus of the survey dealt with past and expected future demand for expansion of the drafting workforces.

Of the 50 firms contacted, 16 or 32% responded that they had expanded their drafting force in the past year, and also expected to add additional drafters in the future.

However, some firms not expanding their drafting personnel in the recent past indicated requirements for additional drafters in the future. As a result, a total of *21 firms (42%)* projected needs for additional drafting technicians over the next 12 months or the next 5 years. Of these 21 firms, *17 firms (34%)* anticipate increases in their drafting personnel both in the short-term (next 12 months) and the long-term (next 5 years) future.

In the survey, information was also collected on the present number of drafting employees and the estimated percentage increase in the number employed during the next 12 months and the next 5 years.

A tabulation was prepared of the responses with respect to projected immediate future (12 months) and long-term (5 years) requirements for additional drafting personnel. Following is a table summarizing the results of the survey:

Total number of firms contacted	50
Total number participating in survey	46
Total drafting employment of participating firms	1,067
Additional drafting technicians needed, next 12 months (21 firms)	354
% increase	40%
Additional drafting technicians needed, next 5 years (excluding next 12 months) by 17 firms	304
Total additional drafting personnel needed, near and long term future	658
% increase	74%

However, it should be noted that the needs of one firm, the largest employer in the survey group, dominate the projections. Therefore, an adjustment was made for this influence, resulting in the following modifications:

Total number of firms indicating future expansion of drafting personnel	20
Total additional number of drafters needed, next 12 months	79
% increase over existing drafting employment	20%
Total additional drafters needed, next 5 years	169
% increase over existing drafting employment	48.7%

A 20% growth rate, therefore, is foreseen by the 20 small-medium sized companies during the next 12 months (1981-1982), while a growth rate of almost 50% is projected over the next 5 years.

Long-term requirements, therefore, based on the projected expansion of existing drafting workforces by the participating companies, are expected to approximate an average yearly growth rate of 10% during 1982-1987 by the 20 small and medium-sized employers in the New Orleans Area.

Although the results of this survey cannot be interpreted for application to all such employers in the 7-parish Region, a general consistency with patterns of experience reported by many other employers has been found.

As such, manpower problems affecting the retention and expansion of several business firms engaged in basic industries of the Region, as described at the beginning of this report, can't be compounded unless appropriate action is taken as soon as possible to institute the necessary *training programs* that will attract and produce qualified technicians in these fields.

(This information was supplied by Peter R. Quirk, P.E., Walk, Haydel & Associates, Inc., New Orleans, La., a member of CEC/L)

*One major employer stated that if CAD-trained drafters were available, their work load could be increased resulting in more employment opportunities in the area.

*Many employers also indicated that their policy is to advance salary levels rapidly for qualified, competent technicians.

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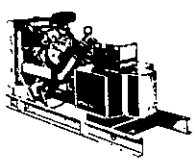

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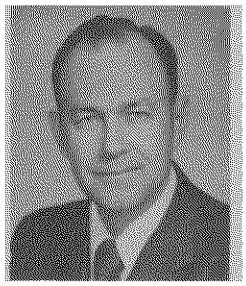
NÔTRE MÉTIER

Paul L. Landry, P.E., Executive Secretary, Louisiana State Board of Registration for Professional Engineers & Land Surveyors.





Surveying

The Board has received a number of complaints and reports of incomplete surveys being made by registrants of the Board. First, we need to remind ourselves that *only* surveyors are allowed to certify surveys. Professional Engineers may *no longer* certify surveys. This practice was disallowed several years ago in the State of Louisiana.

A. J. Brouillette, the one member of the Board who is the Board's designated Land Surveyor member, is looked upon by the other Board members as the expert in the surveyor area. Therefore, the Board directed him to write an article on the subject.

Mr. Brouillette offers the following comments; please take note:

• • •

The Board has on several occasions had charges brought to its attention about land surveys in the recent past. Charges have usually been for surveys that were paper surveys only, improvement surveys, or loan closing surveys. These have taken a considerable amount of the Board's time. Apparently, these improvement or loan closing surveys are a misunderstood task among the surveying profession. Therefore, the Board has directed me to write an article about what a survey of this nature should consist of; that is, the information that should be provided in such a survey. A title examination cannot determine whether improvements are situated on a particular tract of property, the actual quantity or extent of the property, whether there is public access to the property, whether there are any encroachments either way across the property lines, and whether there are any apparent unrecorded servitudes affecting the property. For these and other purposes a survey is essential. The following should be the minimum standards reflected by all improvement surveys and plats:

1. The survey should actually be performed on the ground.
2. The exterior property lines and corners should actually be located, not necessarily in the sense of a formal boundary survey, but at least in the sense that the surveyor in good faith feels he is showing proper lines and corners.
3. The property being surveyed should be tied to an objectively ascertainable corner.
4. Measurements and calls should be provided on all exterior property lines.
5. The plat should always contain a north arrow.
6. The improvements on the subject property should be shown upon the plat in reasonable details, should be properly located thereon with regard to the exterior perimeters, and measurements should be taken and shown on the plat with respect to distances from the improvements to the exterior lines.
7. All encroachments, both unto and from the subject property, should be detailed and described, with dimensions.
8. All recorded servitudes, building setback lines, etc. should be reflected on the plat. This information should be provided by the closing attorney.
9. All apparent servitudes such as electrical lines and pipe line right-a-ways should be properly located and shown on the plat.
10. The relationship of the subject property to streets, public roads, etc. should be shown on the plat.
11. If available, a municipal number or rural route and box number should be shown on the plat.
12. The plat should contain the surveyor's signature and seal, together with any special requirements that a particular lender may require. Some lenders, for example, require a certification as to the elevation of the building slab, or certification whether the property is within a HUD flood hazard zone.

If you conclude from the above that a Surveyor is undertaking a substantial responsibility in preparation of an improvement survey, you are correct. Another frequent violation brought to the Board's attention is the recording of subdivision plats that are not staked out in the field. This is, of course, a violation of the law and does result in expensive disputes. For example, consider that a surveyor is employed to stake a lot somewhere in the middle of an unstaked subdivision - he discovers an error in distances shown on the subdivision plat. Any surveyor can see that many horrible situations can arise from such a predicament. Apparently, there are surveyors who refuse to believe that they could make a mistake in computations and feel that they have satisfied the public need by placing on record a subdivision plat without ever staking any of the lots.

If anyone needs to report a violation to me or the Board - I would like to remind you there is not much point in making an accusation if you cannot sign your letter of grievance.

• • •

Someone once said, "An ounce of Prevention is worth a pound of cure." The "cure" of an incomplete survey is very messy, time consuming, involves the legal profession, and costly. Please reflect on what Mr. Brouillette has brought to your attention. It may not be too late to extend yourself with that "ounce of prevention." If you have not staked out that subdivision that's recorded with your seal, it may be wise to do so now and not wait until your friendly competitor or the Board brings it to your attention.

Merci Beaucoup!

Rules of the Board

Your official copy of the rules of the Board is enclosed in this issue below. Please retain this copy in your permanent files. All registrants of the Louisiana Board of Registration for Professional Engineers and Land Surveyors are held responsible and accountable for abiding by the Louisiana registration law and any rules promulgated by the Board. The attached rules were published in the Louisiana Register on December 20, 1981 and April 20, 1982 and became effective on those dates. It is your legal responsibility to become familiar with these rules and to abide by them. Besides, by doing so, you will be helping yourself, your fellow citizens and the Board. Your knowledge of these rules and cooperation with the Board will go a long way in helping to make the world a safer place to live. Merci!

Firm Renewals

Firm renewals notices were mailed to the firms' last known address in early May as required by Louisiana RS 37:697. Certificates of registration and qualifications of firm expire on June 30 of each year and become invalid after that date unless renewed.

Individual Registrants (Engineers, Land Surveyors, Engineer-in-Training, and Land Surveyors-in-Training) should confirm with their employer that the firm has renewed the firm's qualifications. A registrant of the Board who is employed by a firm who is not registered with the Board places himself in a vulnerable position, because that individual registrant could be aiding and abetting someone in circumventing the law. In addition, a firm offering to provide or providing en-

NOTICE OF ERROR

1982 - BIENNIAL REPORT

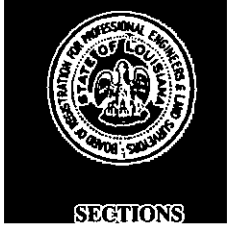
Professional Engineers who are also Professional Land Surveyors were not listed as Professional Land Surveyors in the 1982 Biennial Report.

An addendum will be published and distributed to all recipients of this report.

Louisiana State Board of Registration for Professional Engineers and Land Surveyors

RULES FOR PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS

LAC 19 - 3:1 thru 3:13



SECTIONS

LAC 19 - 3:1	General Provisions
3:2	Definitions
3:3	Certification and Registration of Individuals and Temporary Permits
3:4	Firms that Practice Engineering or Land Surveying
3:5	Applications and Fees
3:6	Branches of Engineering
3:7	Curricula
3:8	Experience
3:9	Examinations
3:10	Use of Seals
3:11	Expiration and Renewals
3:12	Professional Conduct
3:13	Disciplinary Actions

STATE OF LOUISIANA
BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS
1055 St. Charles Ave. Suite 415
New Orleans, LA 70130
(504) 581-7938

LAC 19-3:4 and -3:10 became effective April 20, 1982.

All other rules were effective on December 20, 1981.

NOTICE

BOARD POLICY

All communication with the Board concerning an application filled, the status of an application, the test results, and certification or registration must be secure communication between the Board office and the applicant.

The telephone is not considered to be a secure means of communication. Positive identification cannot be made over the telephone. Please do not call the Board office to request personal information. This information cannot be released over the telephone.

Either write the Board to request personal information or make an appointment to visit the Board office. Appointments will be scheduled over the telephone.

NOTICE

BOARD POLICY

LAC 19-3:1 GENERAL PROVISIONS (37:681) *

1.1 In order to safeguard life, health and property, and to promote the public welfare, any person in either public or private capacity, or foreign or domestic corporation, practicing or offering to practice professional engineering or professional land surveying, shall be required to submit evidence that he/she is qualified to so practice and shall be registered with the Board. Unless specifically exempted by the Act it shall be unlawful for any person to practice or to offer to practice in this state, engineering or land surveying, as defined in the registration law (Louisiana RS 37:681 through 37:703 as amended by Act 568 of 1980) and the Rules of the Board, or to use in connection with his/her name or otherwise assume, use or advertise any title or description tending to convey the impression that he/she is a professional engineer or a professional land surveyor, unless such person has been duly registered under the provisions of the registration law and the Rules of the Board.

1.2 Under the provisions of LA RS 37:688 the Board has the authority to make, adopt, alter, amend, and promulgate rules not inconsistent with the constitution and laws of this state. This is necessary for the proper performance of its duties and the regulations of the proceedings before it.

* The number in the parenthesis makes reference to sections of Title 37, Chapter 8, of the Louisiana Revised Statutes, as amended by Act 568 of 1980.

LAC 19-3:2 DEFINITIONS (37:682)

The words and phrases defined in Section 37:682 of Act 568 of 1980, (The Registration Law) shall apply to these rules. In addition the following words and phrases shall have the following meanings, unless the content of the rule clearly states otherwise:

2.1 "Act" or "Registration Law" shall mean Act 568 of 1980, including any amendments thereto. This act empowers the Board to regulate the practice of Engineering and Land Surveying in the State of Louisiana.

2.2 "Practice of Engineering" is defined in LA RS 37:682. The Board recognizes that in certain fields of practice there is a broad overlap between the work of architects and engineers. This is particularly true in the design of buildings and similar structures. It is recognized that an architect who has complied with all of the current laws of Louisiana relating to the practice of architecture has a right to engage in activities properly classifiable as professional engineering insofar as it is necessarily incidental to his/her work as an architect. Likewise, it is recognized that the Professional Engineer who has complied with all of the current laws of Louisiana and is properly registered in that branch of engineering for which he/she may be qualified has the right to engage in activities properly classifiable as architecture insofar as it is necessarily incidental to his/her work as an engineer. Furthermore, the architect or the professional engineer, as the case may be, shall assume all responsibility for compliance with all the laws or ordinances relating to the designs or projects with which he may be engaged.

The teaching of engineering may be construed as the practice of engineering.

2.3 "Benefits of any substantial nature" and "significant gratuity" as used in the Rules of Professional Conduct, shall mean any acts, articles, money or other material possessions which are of such value or proportion that their acceptance could reasonably be expected to create an obligation on the part of the receivers, or otherwise compromise their ability to exercise their own judgement, without regard to such benefit or gratuity.

2.4 "Fraud, deceit or misrepresentation" shall mean intentional deception to secure gain, through attempts to deliberately conceal, mislead, or misrepresent the truth with the intent to have others take some action relying thereupon, or any act which provides incorrect, false, or misleading information, upon which others might rely.

2.5 "Gross incomptency" shall mean the practice of engineering or land surveying by a registrant who is either incapable of exercising ordinary care and diligence or who lacks the ability and skill necessary to properly perform the duties he/she undertakes. (The practice of engineering in an area other than that in which the registrant has been issued a certificate will not be considered as evidence of gross incomptency, provided the registrant is otherwise qualified by education or experience.) Examples of practice which the Board may consider to constitute gross incomptency include but are not limited to:

2.5.1 The undertaking of assignments other than those for which the registrant is qualified by education or experience in the specific technical fields involved.

2.5.2 The affixing of the registrant's signature or seal to any engineering or land surveying plan or document dealing with the subject matter in which the registrant lacks competence by virtue of education or experience.

2.6 "Gross Negligence" shall mean the practice of engineering or land surveying by a registrant characterized by his/her lack of reasonable care, precaution, or attention to the right, safety, or welfare of others, which could result in injury or damage to life or property or financial loss. Examples of practice which the Board may consider to constitute gross negligence include, but are not limited to:

2.6.1 The preparation of an incomplete or inaccurate engineering or land surveying plan or document that is below acceptable standards, which is released for construction or other lawful purpose, and which could result in financial loss or injury.

2.6.2 Failure of the registrant to exercise reasonable diligence and care in providing professional services, which could result in financial loss or damage or injury.

LAC 19-3:3 REQUIREMENT FOR CERTIFICATION AND REGISTRATION OF INDIVIDUALS AND TEMPORARY PERMIT TO PRACTICE ENGINEERING

3.1 Engineer-In-Training Certification (37:693 B)

A certified Engineer-In-Training shall be a person who is of good character and reputation, who has passed the written examination in the fundamentals of engineering, who was recommended for certification by a registered Professional Engineer, and who was duly certified by the Board at a regular meeting. The additional requirements for certification as an Engineer-In-Training under the several alternatives provided in the Registration Law are as follows:

3.1.1 Graduates of Approved Curricula (37:693 B (1) (a))

The applicant shall be a person who is a graduate of an engineering curriculm of four years or more approved by the Board.

3.1.2 Graduates with Masters Degree (37:693 B (1) (b))

The applicant shall be a person who is a graduate of an unapproved engineering curriculum of four years or more who has obtained a masters degree in an engineering curriculum approved by the Board.

3.1.3 Other Graduates (37:693 B (1) (c))

The applicant shall be a person who is a graduate of an unapproved engineering curriculum or a related science curriculum of four years or more, who has a specific record of four years or more of progressive experience obtained subsequent to graduation, on engineering projects of a grade and character satisfactory to the Board.

3.2 Land Surveyor-In-Training Certification (37:693 B (3))

A certified Land Surveyor-In-Training shall be a person who has met the education and experience requirements established by the Board, who is of good character and reputation, who has passed the written examination in the fundamentals of land surveying, and who has satisfied the requirements of RS 37:694 and who was duly certified as a Land Surveyor-In-Training by the Board at a regular meeting. An applicant for certification as a Land Surveyor-In-Training must be recommended by three personal references. At least one of these references shall be a registered Land Surveyor who has personal knowledge of the applicant's character and abilities. The additional requirements for certification as a Land Surveyor-In-Training under the several alternatives provided in the Registration Law are as follows:

3.2.1 Graduation Plus Examination

The applicant shall be a graduate of a four-year engineering, science, or technology curriculum approved by the Board in which the applicant passed at least six semester hours of approved surveying courses.

3.2.2 Education, Experience, Plus Examination

The applicant shall have passed at least sixty semester hours in a college curriculum approved by the Board, including at least six semester hours of approved surveying courses, and shall have acquired at least two years of combined office and field experience in land surveying, satisfactory to the Board, with a minimum of one year of experience at the level of a party chief under the supervision of a registered land surveyor.

3.2.3 Experience Plus Examination

The applicant shall be a high school graduate, and shall have had at least four years of combined office and field experience in land surveying work with a minimum of two years of combined office and field experience in land surveying, satisfactory to the Board, with a minimum of one year of experience at the level of a party chief under the supervision of a registered land surveyor.

3.3 Professional Engineer Registration (37:693 B (2))

An applicant for registration as a Professional Engineer must be of good character and reputation and recommended by five personal references who are registered Professional Engineers and who have personal knowledge of the applicant's character and abilities. The additional requirements for registration as a Professional Engineer under the several alternatives provided in the Registration Law are as follows:

3.3.1 Engineer-In-Training (37:693 B (2) (a))

Shall be a person who has acquired at least four years of progressive engineering experience, obtained subsequent to being certified as an Engineer-In-Training, in engineering work of a character satisfactory to the Board, and who has passed the written examination in the principles and practice in the branch of engineering in which registration is sought.

3.3.2 Graduates of Approved Curricula (37:693 B (2) (a))

Shall be a graduate of an engineering curriculum of four years or more approved by the Board who has acquired at least four years of progressive engineering experience, obtained subsequent to graduation, in engineering work of a character satisfactory to the Board, who has passed the written examination in the fundamentals of engineering, who has been certified as an Engineer-In-Training, and who has passed the written examination in the principles and practice in the branch of engineering in which registration is sought.

3.3.3 Other Graduates (37:693 B (2) (b))

Shall be a graduate of an unapproved engineering curriculum or related science or related technology curriculum of four years or more who has acquired at least eight years of progressive engineering experience, obtained subsequent to graduation, in engineering work of a character satisfactory to the Board, who has passed the written examination in the fundamentals of engineering, and who has passed the written examination in the principles and practice in the branch of engineering in which registration is sought.

3.3.4 Long Established Practice (37:693 B (2) (d))

On or before December 31, 1984, the Board may register a person who can satisfy the following requirements:

3.3.4.1 The applicant must have had a minimum of twenty years of engineering practice (engineering practice in the Statute is defined as professional service which requires the application of engineering principles and the interpretation of engineering data) not less than twelve years of which must have been in responsible charge of important engineering work. In order to be classed as being of a professional character, the practice must have been carried out in positions that are normally filled by persons with a degree from a school of engineering of recognized standing.

3.3.4.2 The applicant must have had pre-professional education and/or experience equivalent to that required for applicants on the basis of education, experience and examination before experience can be considered to be of a professional character.

3.3.4.3 The experience record must be completely validated by former employers or supervisors who are in a position to have intimate knowledge of the type and the degree of responsibility of work performed. It is not necessary that the applicant's total experience shall have been limited to one branch of engineering, but registration under this provision will be granted only in that branch in which the applicant seems to have obtained the greatest proficiency.

3.3.4.4 The Board will not accept credit for professional experience claimed by the applicant after the effective date of an engineering registration act in that state in which the experience is claimed if the experience was acquired in violation of any of the provisions of the said act.

3.3.4.5 If the applicant is domiciled in a state or territory other than Louisiana, the applicant must be registered to practice professional engineering in that state.

3.3.4.6 The applicant must pass the written examination in the principles and practice of engineering in the branch in which registration is sought.

3.3.4.7 Before approval will be granted to take the written examination, the applicant must appear before the Board or a committee of the Board for an interview and oral examination.

3.3.4.8 The applicant must be of good moral character and shall include in the application the names of five or more personal references who are Professional Engineers registered in Louisiana and who are not relatives or employers.

3.3.5 Reciprocity (37:693 B (2) (c))

The applicant shall be a person who holds a valid certificate of registration to engage in the practice of engineering issued to him/her by proper authority of a state, territory, or possession of the United States, or the District of Columbia, based on requirements that do not conflict with the provisions of the registration law (Louisiana RS 37:681 through 37:703 as amended by Act 568 of 1980) and the Rules of the Board, and which were of a standard not lower than that specified in the applicable registration law in effect in Louisiana at the time such certificate was issued, who is of good character and reputation, and who has satisfied the requirements of RS 37:694, and if the state, territory, or possession, or the District of Columbia, in which he/she is registered will accept the certificates of registration issued by the Board on a reciprocal basis.

3.4 TEMPORARY PERMIT TO PRACTICE ENGINEERING (37:702 (2))

A person who is not a resident of, and has no place of business in Louisiana may be granted a written temporary permit to practice professional engineering when such practice does not exceed sixty consecutive days in any calendar year, provided such person is legally qualified by registration to practice engineering in his/her own state, territory, or possession of the United States, or the District of Columbia, in which the requirements and the qualifications for obtaining a certificate of registration are not lower than those specified in this section and provided further that before beginning such temporary practice in this state, the person shall have applied to the Board, paid the prescribed fee, and received a temporary permit, and upon the conclusion of such work he/she shall advise the Board as to the period of time that he/she has practiced in the state under such temporary permit.

The authority for the Executive Secretary to issue a temporary permit can only be granted by the Board at a regular meeting. Such a permit will be issued for a period of sixty consecutive days. The fee for a temporary permit shall be equal to the fee paid by an applicant applying for registration as a professional engineer.

3.5 Land Surveyor Registration (37:693 B (4))

An applicant for registration as a Land Surveyor must be of good character and reputation and be recommended by five personal references at least three of whom must be registered Land Surveyors. The applicant must appear before the Board or a committee of the Board for an oral examination or interview. The additional requirements for registration as a Land Surveyor under the several alternatives provided in the Registration Law are as follows:

3.5.1 Graduation Plus Examination (37:693 B (4) (b))

The applicant shall be a graduate holding a bachelor of science degree in a curriculum approved by the Board (including the successful completion of at least six semester credit hours in land surveying courses approved by the Board), who has a record of four years or more of combined office and field experience in land surveying (including two years or more experience in responsible charge of land surveying projects under the supervision of a professional land surveyor registered or licensed by appropriate authority), who has passed the oral and written examinations required by the Board, who is of good character and reputation, and who has satisfied the requirement of RS 37:694.

3.5.2 Education, Experience Plus Examination (37:693 B (4) (c))

The applicant shall be a person who has successfully completed two years of formal education in a curriculum approved by the Board, above the high school level, with at least sixty semester credit hours passed, or the equivalent approved by the Board (including the successful completion of at least six semester credit hours in land surveying courses approved by the Board), who has a specific record of six years or more of combined office and field experience in land surveying (including four years or more experience in responsible charge of land surveying projects under the supervision of a professional land surveyor registered or licensed by appropriate authority), who has passed the written examination in the fundamentals of land surveying, who has passed the oral and written examinations required by the Board in the laws, procedures and practice of land surveying, who is of good character and reputation and who has satisfied the requirements of RS 37:694.

3.5.3 Experience Plus Examination (37:693 B (4) (d))

The applicant shall be a person who has a specific record of eight years or more of experience in land surveying of a character satisfactory to the Board (including six years or more experience in responsible charge of land surveying projects under the supervision of a professional land surveyor registered or licensed by appropriate authority), who has passed the written examination in the fundamentals of land surveying, who has passed the oral and written examinations required by the Board in the laws, procedures and practices of land surveying, who is of good character and reputation, and who has satisfied the requirements of RS 37:694.

3.5.4 Reciprocity (or Comity) (37:693 B (4) (e))

The applicant shall be a person who holds a valid certificate of registration to engage in the practice of land surveying issued to him/her by proper authority of a state, territory, or possession of the United States, or the District of Columbia, based on requirements that do not conflict with the provision of the registration law (Louisiana RS 37:681 through 37:703 as amended by Act 568 of 1980) and the Rules of the Board, who has passed a written examination of a duration of four hours or more, in the laws, procedures, and practices pertaining to land surveying in Louisiana, who is of good character and reputation, and who has satisfied the requirements of RS 37:694, and if the state, territory, or possession, or the District of Columbia in which he/she is registered will accept the certificates of registration issued by the Board on a reciprocal basis.

3.5.5 Graduation Plus Engineering Registration (37:693 B (4) (f))

The applicant shall be a person granted a license as a professional engineer on the basis of earning a bachelor of science degree from an engineering curriculum approved by the Board requiring no less than six semester hours of land surveying courses approved by the Board, who is of good character and reputation, and who has satisfied the requirements of RS 37:694 and who has a specific record of two years or more of experience in land surveying work of a character satisfactory to the Board, or who has a specific record of less than two years of experience in land surveying work satisfactory to the Board and has passed the oral and written examinations required by the Board.

LAC 19-3:4 RULES GOVERNING FIRMS THAT PRACTICE ENGINEERING OR LAND SURVEYING (37:689)

4.1 General

4.1.1 The following rules with regard to firms providing or offering to provide professional services shall apply equally to corporations, partnerships, and individual proprietorships, unless otherwise provided.

4.1.2 Unless otherwise provided, individual proprietorships which bear the name of the owner who is a registered professional are exempt from the application of LAC 19-3:4.

4.1.3 Unless otherwise provided, use of the term "professional services" in LAC 19-3:4 will refer to both professional engineering and professional land surveying services.

4.1.4 Unless otherwise provided, use of the term "registered professional" in LAC 19-3:4 will refer to either a registered professional engineer or a registered professional land surveyor.

4.1.5 Joint ventures that provide or offer to provide professional services will not be required to register as separate entities. Nevertheless, any firm (including those individual proprietorships otherwise excluded under 4.1.3) that provides or offers to provide professional services in conjunction with its participation in a joint venture can do so only if it complies with the provisions of these rules. In addition, any supervising professional who participates in a joint venture shall be responsible for assuring that all professional services performed by the joint venture are rendered in conformity with the provisions of these rules.

4.1.6 A firm may provide or offer to provide both professional engineering and professional land surveying services; provided, however, that the firm must qualify separately as an engineering firm and as a land surveying firm, and the requirements of LAC 19-3:4 will apply separately to provision of or offers to provide professional engineering services and professional land surveying services.

4.1.7 A firm may provide or offer to provide both professional services and related licensed professional services, such as architecture and landscape architecture; provided, however, that the firm must be registered under and comply with the provisions of LAC 19-3:4.

4.2 Firm Title

4.2.1 No firm shall provide or offer to provide professional services in the state of Louisiana if it has in its title the name of a living owner of an interest in the firm who is not a registered professional or a related licensed professional either in the state of Louisiana or in the state of domicile or principal place of business of such firm.

4.2.2 Subsection 4.2.1 shall apply to a firm registered only in professional engineering, except that all registered professionals listed in the title must be registered professional engineers.

4.2.3 Subsection 4.2.1 shall apply to a firm registered only in professional land surveying, except that all registered professionals listed in the title must be registered land surveyors.

4.2.4 In the case of a firm registered in both professional engineering and land surveying, Subsection 4.2.1 shall apply, except that at least one registered professional listed in the title must be a registered professional engineer, and at least one registered professional land surveyor. One person may serve as both the registered professional engineer and the registered professional land surveyor, if he is registered as both a professional engineer and a professional land surveyor.

4.3 Supervising Professional - The Designated Registered Professional

4.3.1 In the case of firms providing or offering to provide professional services in the State of Louisiana, all such professional services shall be executed by or under the direct supervision of a registered professional duly registered in this state, and designated by the firm as a supervising professional. Such registered professional shall be a full-time active employee whose primary occupation or employment is with the firm. When the work consists of plans, designs, specifications, reports or maps, such registered professional shall impress them with his seal as required by law. The appearance of a seal on a document of any type shall constitute a representation that such document was prepared by the registered professional or under his supervision.

4.3.2 Nothing in these rules shall be construed to give a professional engineer the power to practice professional land surveying, unless that professional engineer has independently met the requirements for registration as a professional land surveyor.

4.3.3 Nothing in these rules shall be construed to give a professional land surveyor the power to practice professional engineering, unless that professional land surveyor has independently met the requirements for registration as a professional engineer.

4.3.4 It is the intent of these rules to guarantee that all professional work performed by a registered firm is performed under the supervision of or by a registered professional. To this end, the Board may also require a registered firm to identify those registered professionals who will be providing professional services. In addition, the Board may require the individual registrant identified by the registered firm as the responsible professional to acknowledge this responsibility, and assume the responsibility of informing the Board in the event of a change of employment. No registered professional shall be designated as a supervising professional by more than one firm. A failure to comply with any of the provisions of this regulation could subject both the registered firm and the registered professional to disciplinary action by the Board.

4.3.5 Compliance with the above rules will not be met by a contractual relation between the firm and a registered professional or a firm of registered professionals in which such registered professional or firm of registered professionals is available on a consultative basis. Nor will it be considered compliance if a registered professional is related to the firm solely in a nominal or inactive capacity.

4.4 Professional Identification

4.4.1 Letterheads, business cards, advertisements and other similar identifying items issued by firms providing or offering to provide professional services in the State of Louisiana shall reflect clearly that such firms have full-time employees who are registered professionals in this state. In the ordinary case, the name of the Professional Engineer related to the firm should appear on business cards, letterheads, and similar material with initials P. E. following the name to indicate his professional status, or with the initials to indicate the branch in which he practices such as C. E., M. E., etc. In the ordinary case, the name of the Professional Land Surveyor related to the firm should appear on business cards, letterheads, and similar material with initials P.L.S. following the name to indicate his professional status. In the case of large firms which contain a considerable number of registered professionals, compliance with this regulation may be accomplished by the use of the registered professional's seal or by his signature with the identifying initials thereafter on correspondence or other similar materials which do not require the seal.

4.5 Enforcement

4.5.1 In the event that a firm providing or offering to provide professional services within the State of Louisiana shall fail to comply with these rules, the Board, after investigation of the facts, will take whatever action is necessary against such firm to require compliance or to enjoin further practice or offers to practice professional engineering or professional land surveying.

4.5.2 Any firm that has qualified with the Board in accordance with the above rules shall be deemed to be a registrant and therefore shall be subject to those disciplinary provisions providing for reproof (privately or publicly), suspension or revocation of the right to practice its profession in the State of Louisiana.

LAC 19-3:5 APPLICATIONS AND FEES (37:694)

5.1 APPLICATIONS

Applications for registration as Professional Engineer or Land Surveyor shall be typed on forms furnished by the Board, shall contain statements made under oath showing the applicant's qualifications, and the names and addresses of persons who can verify such statements and in addition, the names and addresses of five personal references. All of the five personal references furnished by an applicant for registration as a professional engineer shall be registered professional engineers. Three or more of the five personal references furnished by an applicant for registration as a land surveyor, shall be registered land surveyors.

5.1.2 Applicants who have attended college must have certified transcripts of their college work forwarded to the office of the Board.

5.1.3 Each applicant will be required to submit a one or two page typewritten resume of the experience record he/she has presented in the application. Forms will be provided by the Board. Copies of this resume will be sent to the personal references the applicant has listed in his application.

5.1.4 Requests for registration in more than one branch must be submitted on separate application forms.

5.1.5 An application for registration will not be considered by the Board, nor will an applicant be admitted to a written examination, until the information submitted in the application has been investigated and replies have been received from references. The Board may require additional information and documents it considers necessary for the proper evaluation of an application.

5.2 FEES

Application fees, examination fees, renewal fees and all other fees shall be established by the Board by a majority vote at a regular meeting. The fees so established shall be in accordance with the limits specified in the Registration Law.

LAC 19-3:6 BRANCHES OF ENGINEERING (37:693)

6.1 Section 37:693 of Act 568 of 1980 provides for professional engineering registration in the following branches:

1. Agricultural	4. Electrical	7. Metallurgical
2. Chemical	5. Industrial	8. Mining
3. Civil	6. Mechanical	9. Petroleum

6.2 These branches reflect important engineering specialties which are taught in a substantial number of ABET accredited engineering programs in the United States and which have been determined by the Legislature to be of importance in Louisiana.

6.3 Section 37:693 also permits the Board to establish additional branches as needed to safeguard life, health, and property, to promote the public welfare, and to establish and maintain high standards of integrity and practice.

6.4 The Board may add branches in accordance with the following criteria:

6.4.1 There must be a probable need in the State of Louisiana for specialized engineering expertise in the new branch area.

6.4.2 There must exist at least fifteen (15) ABET accredited engineering curricula in the United States corresponding to the new branch area.

6.4.3 Examinations in the Principles and Practice of the branch of engineering must be offered on a regular basis by NCEE or by at least fifteen (15) State Boards.

6.5 On the basis of the above criteria, the Board, by majority vote at a regular meeting, may establish a new branch of engineering for the purpose of registration. Within one year after the Board establishes a new branch, the Board may waive the principles and practice examination in that branch for all registrants who present evidence that they are qualified by experience and education to practice in that branch.

6.6 The Board will not add branches to correspond to job titles or job functions, such as corrosion engineer, air conditioning engineer, construction engineer, automotive engineer, safety engineer, sales engineer, traffic engineer, or planning engineer.

LAC 19-3:7 CURRICULA (37:693)

7.1 Approved Curricula

7.1.1 The Board shall determine which curricula are to be recognized under the provisions of the Act as approved curricula for the registration of persons as Professional Engineers and Land Surveyors.

7.1.2 In general, the Board will recognize as approved all engineering curricula of four years or more accredited by the Accreditation Board for Engineering and Technology (ABET). The Board may recognize as approved an engineering curriculum that was not accredited at the time of the applicant's graduation, but became accredited within the following two years.

7.1.3 Based on an investigation by a committee of the Board, the Board may, by a majority vote at a regular meeting, recognize as an approved curriculum an engineering curriculum of four years or more from a school of satisfactory standing that does not meet the specifications of Section 7.1.2. The Board shall keep a record of the engineering curricula thus approved.

7.1.4 The Board may recognize as approved for the registration of Land Surveyors under Section 37:693 B (4) (b) of the Act all approved engineering curricula that contain at least six semester credit hours, or equivalent, of satisfactory surveying courses.

7.1.5 The Board, by a majority vote at a regular meeting, may recognize a curriculum of a college or university of recognized standing, leading to a Bachelor of Science degree, as an approved curriculum for the registration of Land Surveyors under Section 37:693 B (4) (b) of the Act provided the curriculum contains at least six semester credit hours, or equivalent, of satisfactory surveying courses.

7.1.6 The Board may recognize that the formal education of an applicant for registration as a Land Surveyor meets the requirements of Section 37:693 B (4) (b) of the Act if he/she has passed sixty semester hours, or the equivalent, of courses above the high school level, including at least six semester hours, or the equivalent, of satisfactory surveying courses.

7.2 Other Curricula

7.2.1 To qualify for certification as an engineer-in-training, graduates of unapproved engineering curricula, or related science curricula, must present evidence of experience of such quality and extent that the Board believes that the applicant has obtained engineering knowledge and skills at least equivalent to that obtained by education in an approved four-year engineering curriculum. Curricula must be of four years or more from a college or university of recognized standing.

7.2.2 Chemistry and Physics are generally considered to be related science curricula. Other science curricula may be considered if the applicant can convince the Board that a strong relationship exists between the curriculum and a branch of engineering approved by the Board.

7.2.3 Related technology curricula shall be those four-year technology curricula approved by the Board. Such curricula shall be accredited by the Accreditation Board for Engineering and Technology (ABET) or equivalent to such curricula. Unaccredited technology curricula outside of Louisiana are not approved.

7.3 Equivalent Experience Credit for Education

See LAC 19 3:8 Experience.

LAC 19-3:8 EXPERIENCE (37:693)

8.1 The Board will not recognize experience acquired by an applicant in violation of the registration law of any state.

8.2 The Board may allow experience credit for engineering education at the graduate level. A maximum of one year of experience may be allowed for a masters degree in engineering or the equivalent. A maximum of three years of experience may be allowed for a doctorate degree in engineering or the equivalent. No applicant shall receive credit for more than three years of experience for graduate education in engineering.

8.3 The Board may consider the satisfactory completion of each year of an approved undergraduate curriculum equivalent to a year of land surveying experience, provided the applicant has completed at least six semester credit hours, or equivalent, in surveying courses approved by the Board. No applicant shall receive credit for more than four years of land surveying experience for his/her undergraduate education (RS 37:692).

8.4 No applicant will be allowed more than one year of experience for work and education during one calender year.

8.5 Only experience obtained subsequent to receiving a Bachelor of Science degree will be considered as engineering experience. This paragraph does not apply to persons applying under the provisions of RS 37:693 B (2) (d) (long established practice).

LAC 19-3:9 EXAMINATIONS (37:693)

9.1 General

9.1.1 Only persons of good character and reputation who have received permission from the Board will be allowed to take any examination offered by the Board. For all examinations, applications must be timely filed with the Board.

9.1.2 Examinations in the fundamentals of engineering, fundamentals of land surveying, the principles and practice of engineering, the principles and practice of land surveying and the laws, procedures and practice of land surveying will be offered at least once a year at times and places designated by the Board. Descriptions of typical content of the examinations will be made available to applicants by the Board through its office or through the office of the National Council of Engineering Examiners (NCEE).

9.1.3 When permitted, textbooks, handbooks, bound references, battery-powered, non-printing, silent calculators (programmable or non-programmable) and sliderules may be used. Examinees will NOT be permitted to exchange, lend, or borrow any information, books, calculators, reference material or aids during the examination. NO loose sheets, writing tablets, unbound tables or charts, or unbound notes (including notes in loose-leaf ring binders) will be permitted in the examination room. The use of scratch paper will be prohibited. Test books and answer sheets will be provided.

9.1.4 Applicants will be informed by mail only as to whether they passed or failed an examination. Passing the examination will constitute a credit toward registration for a period of ten years after the date of the examination.

9.2 Approval to Take the Fundamentals of Engineering Examination

9.2.1 Graduating seniors of four-year engineering curricula (approved or unapproved) may be permitted to take the examination in the fundamentals of engineering during their last two semesters.

9.2.2 A graduate of a four-year engineering curriculum, (approved or unapproved) or a graduate of a related science or related technology curriculum who has obtained a masters degree in an engineering curriculum approved by the Board may be permitted to take the examination in the fundamentals of engineering.

9.2.3 An applicant who is a graduate of a four-year related science or related technology curriculum and who has four years or more of satisfactory experience obtained subsequent to graduation, may be permitted to take the examination in the fundamentals of engineering.

9.2.4 A graduate student enrolled in a Louisiana school, who has successfully completed at least two years of a three-year program leading to a doctorate degree in engineering or the equivalent, may be permitted to take the examination in the fundamentals of engineering.

9.3 Approval to Take the Examination in the Principles and Practice of Engineering

An applicant who meets the other requirements for registration as a Professional Engineer may be permitted to take the examination in the principles and practice of engineering in the branch in which he/she seeks registration. The Board may permit an applicant to take this examination one year before the applicant is eligible for registration.

9.4 Approval to Take the Fundamentals of Land Surveying Examination

An applicant who meets the other requirements for certification as a Land Surveyor-In-Training may be permitted to take the examination in the fundamentals of land surveying.

9.5 Approval to Take the Examination in the Principles and Practice of Land Surveying and in the Laws, Procedures, and Practice of Land Surveying

An applicant who meets the other requirements for registration as a Land Surveyor may be permitted to take the examinations in the principles and practice of land surveying and in the laws, procedures, and practice of land surveying.

9.6 EXAMINATION FOR RECORD PURPOSES

The National Council of Engineering Examiners prepares examinations in the "Principles and Practice of Engineering". The Board provides the opportunity for engineers who are registered in Louisiana to take the National Council's examination in the branch of their registration without affecting their registration status with this Board. These examinations are offered at times and places designated by the Board. Each applicant will be charged a fee for this service.

9.7 Minimum Passing Scores and Grades on Examinations

After examinations have been scored the Board will review the results and by a majority vote, specify the score that is equivalent to the minimum passing score.

9.8 Re-Examinations

9.8.1 A person who fails an examination for the first time is eligible to apply to retake the examination.

9.8.2 A person who has failed an examination on two occasions, regardless of the elapsed time between exams, will not be eligible to apply to retake the examination until two years after his/her last failure. Upon application he/she is expected to present evidence

that he/she has made a serious effort to increase his/her knowledge of the subject matter covered by the examination.

9.8.3 A person who has failed an examination three times or more than three times will not be eligible to apply to retake the examination until four years after his/her last failure. Upon application he/she must present evidence that he/she has made a serious effort to increase his/her knowledge of the subject matter covered by the examination. Before the applicant is given approval to retake the examination he/she must appear before the Board or a committee of the Board for an interview and oral examination.

LAC 19-3:10 RULES GOVERNING THE USE OF SEALS (37:696)

The following rules for the use of seals to identify work performed by a registered Professional Engineer or Professional Land Surveyor shall be binding on every registrant:

10.1 Each registrant professional engineer or professional land surveyor, upon registration, is authorized to obtain an official seal. It shall be unlawful for such registrant to affix or to permit his seal and signature to be affixed to any document after the expiration of a certificate or for the purpose of aiding or abetting any other person to evade or attempt to evade any provision of the act.

10.2 The seal shall be of a size and design authorized by the board. When the seal is applied, the registrant's written signature shall be signed adjacent to the seal. No further words or wording are required. A facsimile signature will not be acceptable.

10.3 The seal and signature shall be placed on specifications, reports, plats, drawings, design information and calculations, whenever presented to a client or any public or governmental agency.

10.4 The application of the registrant's seal and signature shall constitute certification that the work thereon was done by him or under his control.

10.4.1 Drawings and Plats - In case of multiple sealings, the first or title page shall be sealed and signed by the registrant or registrants involved. In addition, each sheet shall be sealed by the registrant or registrants responsible for each sheet. In the case of a firm, partnership or corporation, each sheet shall be sealed and signed by the registrant or registrants involved. The principal in responsible charge shall sign and seal the title or first sheet.

10.4.2 Specifications, reports, design calculations and information - In the case of specifications of multiple pages, the first or title page, of each document shall be sealed and signed by the registrant or registrants involved. Subsequent revisions shall be dated and initialed by the principal in responsible charge whose seal and signature appears on the first or title page. Preliminary documents, so marked, need not be so sealed and signed. In the case of a firm, partnership or corporation the principal in responsible charge shall sign and seal the title or first sheet.

10.5 The seal and signature shall be used by professional engineer or professional land surveyor registrants only when the work being sealed was performed under the registrant's complete direction and control.

10.6 In the case of a temporary permit issued to a registrant of another state, the registrant shall use his state of registration seal and shall affix his

signature and temporary permit number to all his work.

10.7 In the case of an individual registrant checking the work of and taking the professional responsibility for an out of state individual registrant, the Louisiana registrant shall completely check and have complete dominion and control of the design. Such complete dominion and control shall include possession of the sealed and signed reproducible construction drawings, with complete signed and sealed design calculations indicating all changes in design.

10.8 The design of the seal as determined by the State Board shall have the following minimum information:

State of Louisiana

Registrant's Name

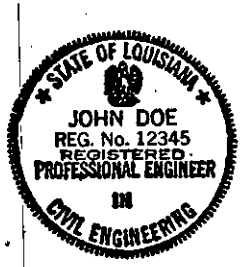
Registrant's Registration Number

Contain the words "Professional Engineer in

_____Engineering" or

"Registered Professional Land Surveyor"

Indicated below is a sample of the seal design authorized by the Board. Seals of two different sizes will be acceptable, a pocket seal, the size commercially designated as 1-5/8 inch seal, or a desk seal, commercially designated as a 2 inch seal. Rubber stamps of the same design and size are acceptable for use.





LAC 19-3:11 EXPIRATION AND RENEWALS (37:697)

Certificates of registration and certification for individuals shall expire on December 31 of each year and shall become invalid after that date unless renewed. Certificates of registration and qualifications of corporations and other firms shall expire on June 30 of each year and shall become invalid after that date unless renewed.

LAC 19-3:12 RULES OF PROFESSIONAL CONDUCT FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS (37:698)

In order to safeguard life, health and property, to promote the public welfare, and to establish and maintain a high standard of integrity and practice, the following Rules of Professional Conduct shall be binding on every REGISTRANT. These Rules of Professional Conduct deal primarily with the relationship between REGISTRANTS and the public, and should not be construed as a substitute for codes of ethics of the various professional and technical societies.

ALL REGISTRANTS under Louisiana Revised Statutes 37:681 through 37:703 As amended by Act 568 of 1980 are charged with having knowledge of the existence of these Rules of Professional Conduct, and shall be deemed to be familiar with their provisions and to understand them.

In these Rules of Professional Conduct, the word "REGISTRANT" shall mean any engineer, land surveyor, engineer-in-training, land surveyor-in-training, domestic or foreign corporation holding a license or certificate issued by this Board.

12.1 REGISTRANTS shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.

12.1.1 REGISTRANTS shall at all times recognize that their primary obligation is to protect the safety, health, property, and welfare of the public. If their professional judgment is overruled by non-technical authority, they will clearly point out the consequences, notifying the proper authority of any observed conditions which endanger public safety and health.

12.1.2 REGISTRANTS shall approve and seal only those design documents and surveys which are safe for public health, property and welfare, which are complete and accurate, in conformity with accepted engineering and land-surveying standards or practice; and which conform to applicable laws and ordinances.

12.2 REGISTRANTS shall perform services only in the area of their competence.

12.2.1 REGISTRANTS shall undertake assignments only when qualified by education or experience in the specific technical fields of engineering or land surveying involved.

12.2.2 REGISTRANTS shall not affix their signatures or seals to any plans or documents dealing with subject matter in which they lack competence, nor to any such plan or document not prepared under their direction and control.

12.2.3 REGISTRANTS may accept an assignment outside of their fields of competence to the extent that their services are restricted to those phases of the project in which they are qualified, and to the extent that they are satisfied that all other phases of such project will be performed or supervised by registered, qualified associates, consultants, or employees, in which case they may then sign and seal the documents for the total project.

12.2.4 In the event a question arises as to the competence of a REGISTRANT in a specific technical field which cannot be otherwise resolved to the State Board's satisfaction; the State Board, either upon request of the REGISTRANT or on its own volition, shall admit the REGISTRANT to an appropriate examination.

12.3 REGISTRANTS, if in compliance with LAC 19-3:12.1 shall further act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.

12.3.1 REGISTRANTS shall disclose all known or potential conflicts of interest to their employers or clients by promptly informing them of any business association, interest, or other circumstances which could influence their professional judgment or the quality of their professional services.

12.3.2 REGISTRANTS shall not accept compensation, financial or otherwise, from more than one party for professional services on the same project, or for professional services pertaining to the same project, unless the circumstances are fully disclosed to, and agreed to, by all interested parties.

12.3.3 REGISTRANTS shall not solicit or accept, directly or indirectly, benefits of any substantial nature,[1] or significant gratuity,[1] from any supplier of materials or equipment, or from contractors, their agents, servants or employees or from any other party dealing with the REGISTRANT'S client or employer in connection with any project on which the REGISTRANT is performing or has contracted to perform engineering or land surveying services.

12.3.4 When in public service as a member, advisor or employee of a governmental body or agency, or under contract to provide consultation, advice, technical reviews and recommendations to a governmental body or agency, REGISTRANTS shall not participate in considerations or actions with respect to professional services provided by them or their organization to that governmental body or agency.

[1] The phrases "benefits of any substantial nature" and "significant gratuity" are defined to mean acts, articles, money or other material possessions which are of such value or proportion that their acceptance could reasonably be expected to create an obligation on the part of the receivers, or otherwise compromise their ability to exercise their own judgment, without regard to such benefit or gratuity.

12.3.5 REGISTRANTS shall not solicit or accept an engineering and/or surveying contract from a governmental body of which a principal, or officer of the REGISTRANT'S organization serves as a member, except upon public disclosure of all pertinent facts and circumstances and consent of appropriate public authority.

12.4 REGISTRANTS shall avoid improper solicitation of professional employment.

12.4.1 REGISTRANTS shall not falsify or permit misrepresentation of the REGISTRANT'S or any associate's academic or professional qualifications; the misrepresentation or exaggeration of the REGISTRANT'S degree of responsibility in or for the subject matter of prior assignments or the misrepresentation of pertinent facts concerning employers, employees, associates, joint ventures, of the REGISTRANTS or their organization's past accomplishments with the intent and purpose of enhancing their qualifications and their work.

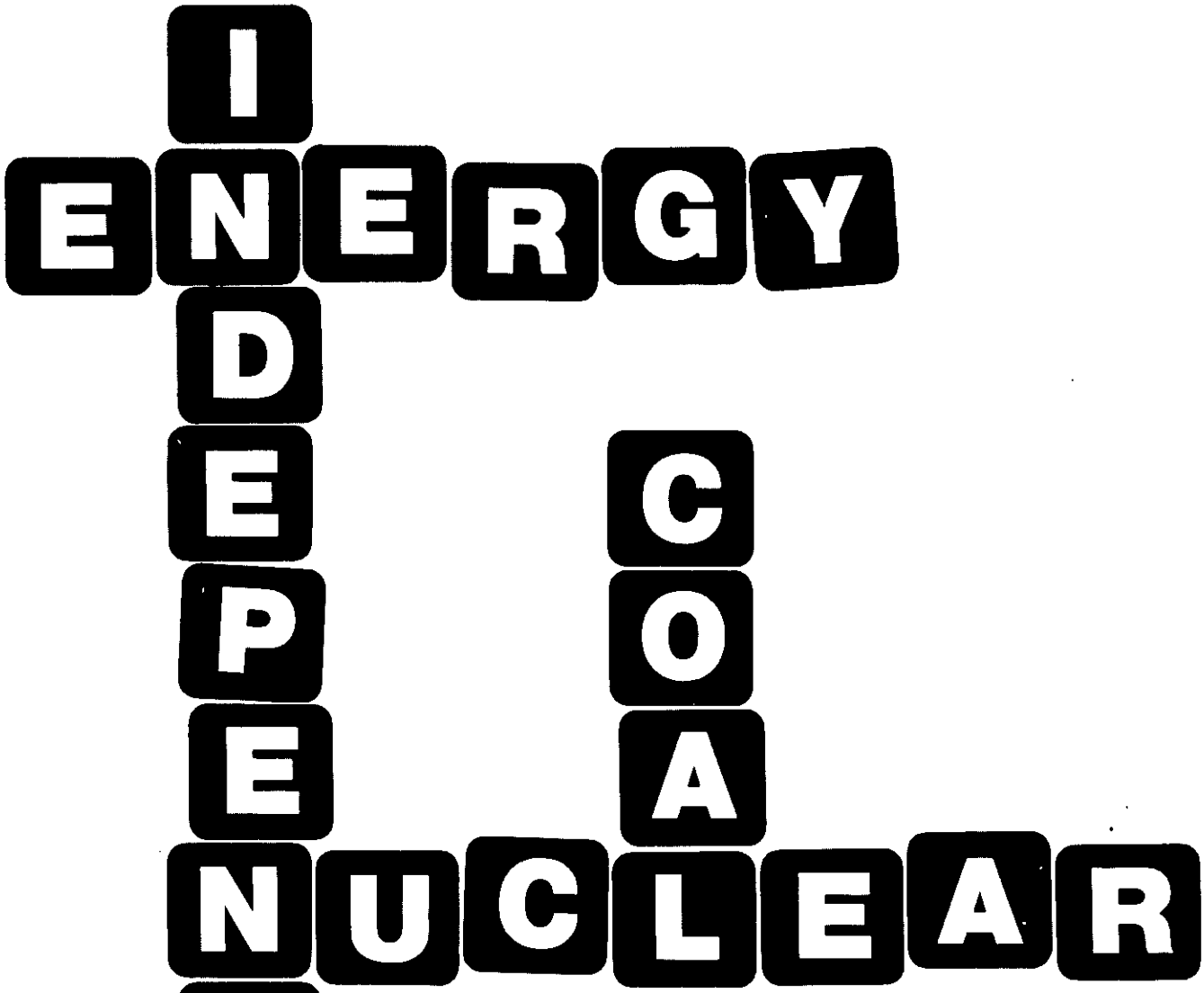
12.4.2 REGISTRANTS shall not pay or offer to pay, directly or indirectly, any commission, or gift, or other valuable consideration in order to secure work, except under the following circumstances:

12.4.2.1 Securing salaried positions through employment agencies.

12.4.2.2 As a bona fide employee, or a bona fide established commercial marketing agency retained by them.

LAC 19-3:13 DISCIPLINARY ACTIONS

13.1 All disciplinary actions initiated by the State Board will be governed by the substantive and procedural provisions of LA. REV. STAT. ANN. 37:681 et seq. (Establishing the powers and structures of the State Board of Registration for Professional Engineers and Land Surveyors) and by the provisions of LA. REV. STAT. ANN. 49:903 et seq. (The Louisiana Administrative Procedure Act.)



Nuclear Power and Coal are the answers.

It is estimated that during the next decade the U.S. demand for electricity will increase by 36%. Ultimately, the declining supply and skyrocketing prices of oil imports will make it necessary for us to rely on other sources of energy.

For years, your investor-owned utility companies have been working to develop alternative energy sources. From beneath the sea, from inner earth and from the sun. The commercial development of solar energy is one of our primary targets, but even solar advocates admit that as far as widespread use is concerned, it will take from twenty-five to thirty years to overcome the technical and economic problems inherent in solar energy production.

Obviously, we must rely on existing technology to make the transition, and the majority of scientists and energy leaders agree there is little hope of having enough energy in the years ahead without a major contribution from nuclear power and coal.

LOUISIANA'S INVESTOR-OWNED ELECTRIC COMPANIES
—INVESTING IN YOUR ENERGY FUTURE

Central Louisiana Electric Company *Gulf States Utilities Company* *Louisiana Power & Light Company* *New Orleans Public Service Inc.* *Southwestern Electric Power Company*

NOTRE METIER

Continued from page 14

gineering or land surveying services in violation of the statutes and regulations of the Board places the firm and all registrants employed by the firm in a vulnerable position since the failure to register could also violate other state and federal laws. Please *reassure* yourself that you are not serving an employer who may be in violation of the statutes and rules of the Board.

Incorporating an Engineering or Land Surveying Firm

Many of you may have given some thought to incorporating. I don't think it is my place to give you my thoughts on the advantages or disadvantages of incorporation. Depending upon your personal situation it may be to your advantage to incorporate. You may want to speak to a CPA or an attorney and get their advice before acting. However, I can offer some helpful hints about following the technical procedures for incorporating an Engineering or Land Surveying firm. Incorporating an Engineering or Land Surveying firm in Louisiana is a "Catch 22" exercise. A firm may not be granted a charter by the Secretary of State until a waiver is received from the Board. The Board may not register a firm until a charter has been granted by the Secretary of State. Dr. Vliet, my predecessor, being an experienced Naval officer, worked out very simple procedures with the Secretary of State.

They are:

1. The individual or his attorney writes a letter to the Board requesting the issuance of a waiver to the Secretary of State.

   The Board needs to know:

   a. The firm's name and address.

   b. The names of the professional engineers or land surveyors employed full time by the firm, who are registrants of the Board.

2. The Board has given the Executive Secretary the authority to grant a waiver. A waiver is issued to the Secretary of State, thereby making it possible for the firm to receive a Charter.
3. Upon receipt of the Charter, the firm applies to the Board for Registration. The firm will receive a confirmation letter that it may now offer to provide or provide professional services. At a later date the firm will receive a certificate of registration.

Unlike individual registration, the registration of a firm to practice engineering or land surveying in Louisiana can be done quickly—in about thirty days. The registration fee for firms is now $35.00 and the renewal fee is $15.00. Firms offering to provide or providing engineering *and* land surveying services must be registered for *both* ($70.00 registration and $30.00 renewal fee).

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1982 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1982	1983
	Jan. 24 & 25
July 27	Mar. 22
Sept. 28	May 24
Nov. 23	July 26
	Sept. 27
	Nov. 22

1982 Engineering Management Courses at LSU

FACULTY

The courses will be taught by regular faculty members of the LSU College of Business Administration and engineering or by able, qualified professors from other universities in the state.

CERTIFICATE

Upon completition of four acceptable courses and a certificate application form, the participant will be awarded a Certificate in Engineering Management by the Division of Continuing Education. An Advanced Certificate will be awarded to students who take a total of six courses.

COST

The fee per participant is $200 for each course and includes the cost of textbooks.

REGISTRATION

To insure that each student will have an opportunity to participate in discussion, enrollment in each section will be limited to 30 students.

Please complete the following form and return it to the address below if you are interested in the fall program. (Classes will begin during the week of Aug. 30, 1982.)

MAIL FORM TO:
Dr. L. Mann
Industrial Engineering Dept., CEBA Bldg.
Louisiana State University
Baton Rouge, Louisiana 70803-6409

Name _____

Address _____ Phone _____

City & State _____ Zip _____

Classes will be organized Mon., Aug. 16, 1982 in Room 122A, LSU Medical Center, New Orleans - 7:30 PM and on Tues., Aug. 17, 1982 in Room 3136 CEBA Bldg., LSU, Baton Rouge - 7:30 PM.

Class sessions will be held in the University Medical Center at New Orleans, on the Baton Rouge campus, and in other cities throughout the state where there is adequate demand. To preregister for the classes complete the attached form and return.

AVAILABLE COURSES

Course A — Modern Management
Course B — Project Management with CPM/PERT
Course C — Engineering Economy
Course D — Financial Decision Making
Course E — Automation and Computer Aided Manufacturing
Course F — Basic Engineering Statistics
Course G — Human Relations
Course H — Cost Estimating
Course I — Microcomputers for Decision Making

I wish to preregister for the course indicated. (Please show your first choice with a 1, second with a 2, etc. Show a single location choice only.

COURSES OFFERED

( ) Management
( ) Project Management
( ) Engineering Economy
( ) Finance
( ) Automation
( ) Statistics
( ) Human Relations
( ) Cost Estimating
( ) Microcomputers

LOCATIONS

( ) Baton Rouge
( ) New Orleans
( ) Monroe

I cannot attend on the following nights:
M____T____W____Th____

NEW MEMBERS

NON-RESIDENT

S. Wesley Van Natta, Jr., EIT
707 El Dorado Blvd.
Houston, TX 77062
Industry

Gary R. Hude, EIT
2211 Summer Oak
Orange, TX 77630
Construction

Firoozeh M. Nabavian, EIT
6228 Parallel Lane
Columbia, MD 21045
Private Practice

George L. Eitel, Jr.
9569 W. 83 Ave.
Arvada, CO 80005
Industry

Mark C. Drew
% Mobil
P. O. Box 510
4001 Stavanger, Norway
Industry

Danny J. Rea
3311 Rustling Pines
Spring, TX 77380

Mahmoud M. Aljamal
2045 Flournay Lucas, #257
Shreveport, LA 71118
Construction

Herbert L. Arnold, EIT
3601 Dee St. Apt. 513
Shreveport, LA 71105
Government

William F. Cummer, P.E.
552 Wilkinson
Shreveport, LA 71104
Industry

Richard E. Gardner
Southwestern Laboratories
7238 Greenwood Rd.
Shreveport, LA 71103
Industry

Richard A. Jones
6312 Frondosa
Shreveport, LA 71119
Construction

Robert D. Lovell, EIT
3102 June Lane
Bossier City, LA 71112
Industry

Paul Lee
4213 Lakeshore Dr. #205
Shreveport, LA 71103
Industry

Fred W. Schaefbe
304 High School St.
Mansfield, LA 71052
Industry

Thomas F. Ruffin
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Arthritis warning signs:

1. persistent pain and stiffness on arising

2. pain, tenderness or swelling in one or more joints

3. recurrence of these symptoms, especially when they involve more than one joint

4. recurrent or persistent pain and stiffness in the neck, lower back, knees and other joints

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Continued from page 5

members of the Committee. Engineers take pride, and justly so, in their technical competency, but most completely ignore the political field. Government sets stringent regulations, requires many superfluous reports, and continuously taxes. All have a serious impact on our lifestyle, as well as almost making the cost of services to clients prohibitive. Legislators seek input and the feel of their constituents. They are generally influenced by the loudest voice. This year the members voluntarily contributed a total of over $5,700 above dues to finance the extensive legislative program.

In the current session of the legislature, a LES introduced bill has passed the Senate by 36-2 and is proceeding to the House. This provides for a revision to the registration law to increase the fees charged to corporations and individuals for examination, application for profession registration, and registration renewals. The additional monies were needed to insure the continued operation of the essential State Board of Registration. Another bill to be aggressively handled would permit engineering firms to offer and contract to provide architectural services if the work is done or supervised by a licensed architect. Of course, we are continuing to file friends of court briefs where decisions could adversely affect engineers and to closely monitor proposed legislative acts. Appropriate action will be initiated against those not in the best interest of our profession.

Conventions

These have been excellent from all standpoints. Credit is richly deserved by the many people contributing to their success. Billy Moore was the Chairman for the annual convention at the Toro Hills Hotel, July 23-24-25, 1981. At the 25th Annual Chapter Officers Training Conference, September 17-19, 1981, Neil Klock, Jr. was the overall Convention Chairman with the ladies' activities being handled by Betty Fillette, Joy Meyer, and Jo Ann Shriver. Bill Harrison was Convention Chairman for the Spring Convention on April 29-30 and May 1, 1982 at the Royale Rouge Hotel in Baton Rouge. Florence Forte was in charge of the ladies' activities.

Financial Position

The April 30 statement showed that we were in good shape with expenditures exceeding income by only $612 on an annual budget of $163M. Many items varied widely from projection, but thus far, the pluses offset the minuses.

Obviously the additional monies obtained from contributions for the engineering crisis study, legislative program, and the computer purchase were a must.

NSPE Officers

This year Arthur DeFraites served as Vice-President of PEPP; Waldemar Nelson was unanimously nominated for 1983-1984 President-Elect by the Louisiana Engineering Society and Buddy Moncla has been nominated by the society for the 1983-1984 Nominating Committee.

Miscellaneous

The Scholarship Program, with Paul Hale as Chairman, completed one of the best years ever. The chapters received a total of 121 applications from high school seniors for NSPE engineering scholarships. This list was pared to 31. Final selections for all of the national winners have not been completed.

The Baton Rouge chapter submitted a winning nomination for one of the 10 1981 outstanding engineering awards selected annually by NSPE. This was the LOOP - Louisiana Offshore Oil Port in Lafourche Parish. James C. Webb provided all of the data and materials for the nominations.

Verdi Adam was appointed by Governor Treen to the Louisiana State Board of Registration for Professional Engineers and Land Surveyors from a list provided by LES.

The Constitution and Bylaws Committee, chaired by Carl Thomas, has been active. The board approved a bylaw permitting practice divisions to be represented on the Legislative Committee. Another that will probably be passed on June 4 relates to ladies auxiliaries. A constitutional amendment defining the method of electing National Directors will be voted on by the membership this year.

Fortunately, the Ethics Committee, under the direction of Al Adoue, did not receive any cases to review.

Club Presidents

Yes, it was a great year with many accomplishments. Special credit should go to the chapter presidents - listed on page 3. Collectively, they comprise one of the best leadership groups we have ever had. I recognize that every LES president feels his team is the best, but this year's record speaks for itself. All gave generously of his time, talent, and money to elevate the status of LES and each has that rare trait of initiativeness. Any of the presidents are well qualified and capable of taking the next step in the organization and I hope many will take this route. The State should benefit for many years from these men of vision and action.

Auld Lang Syne

It has been a great honor and privilege to serve as your President. The great reward the President enjoys is observing an entire organization actively going about dedicating itself to advancing the society to its maximum potential.

There is absolutely no way to thank each of you for your magnificent efforts. I hope our paths will continue to cross.

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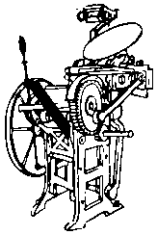

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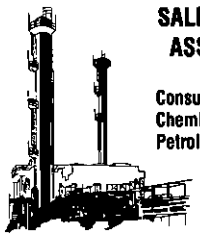

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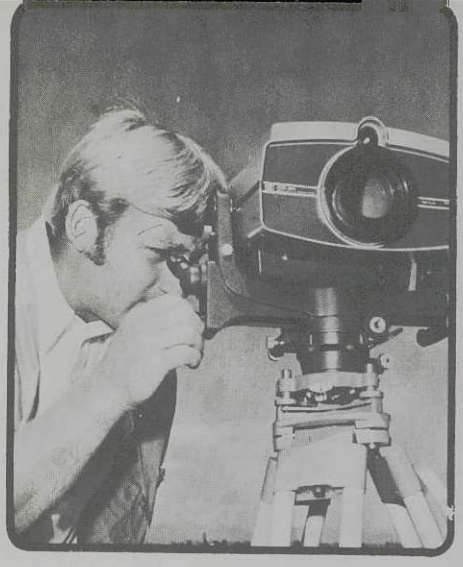

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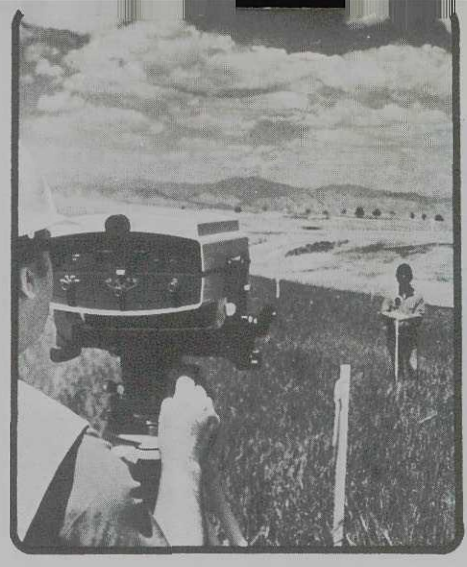

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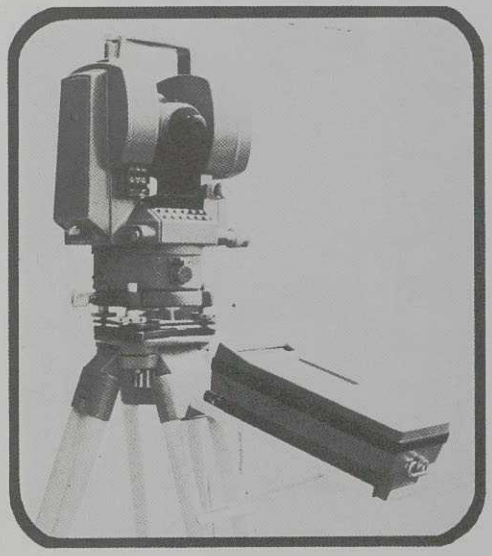

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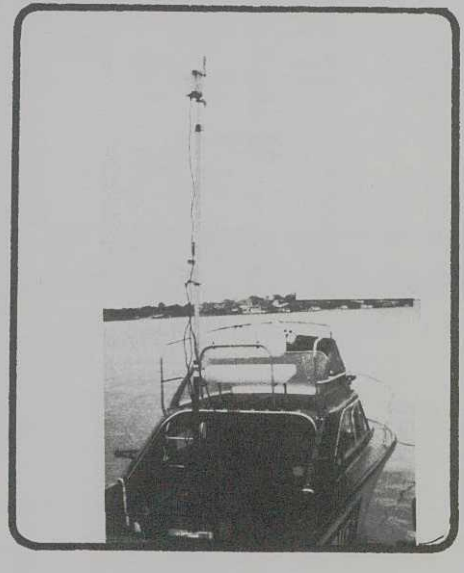

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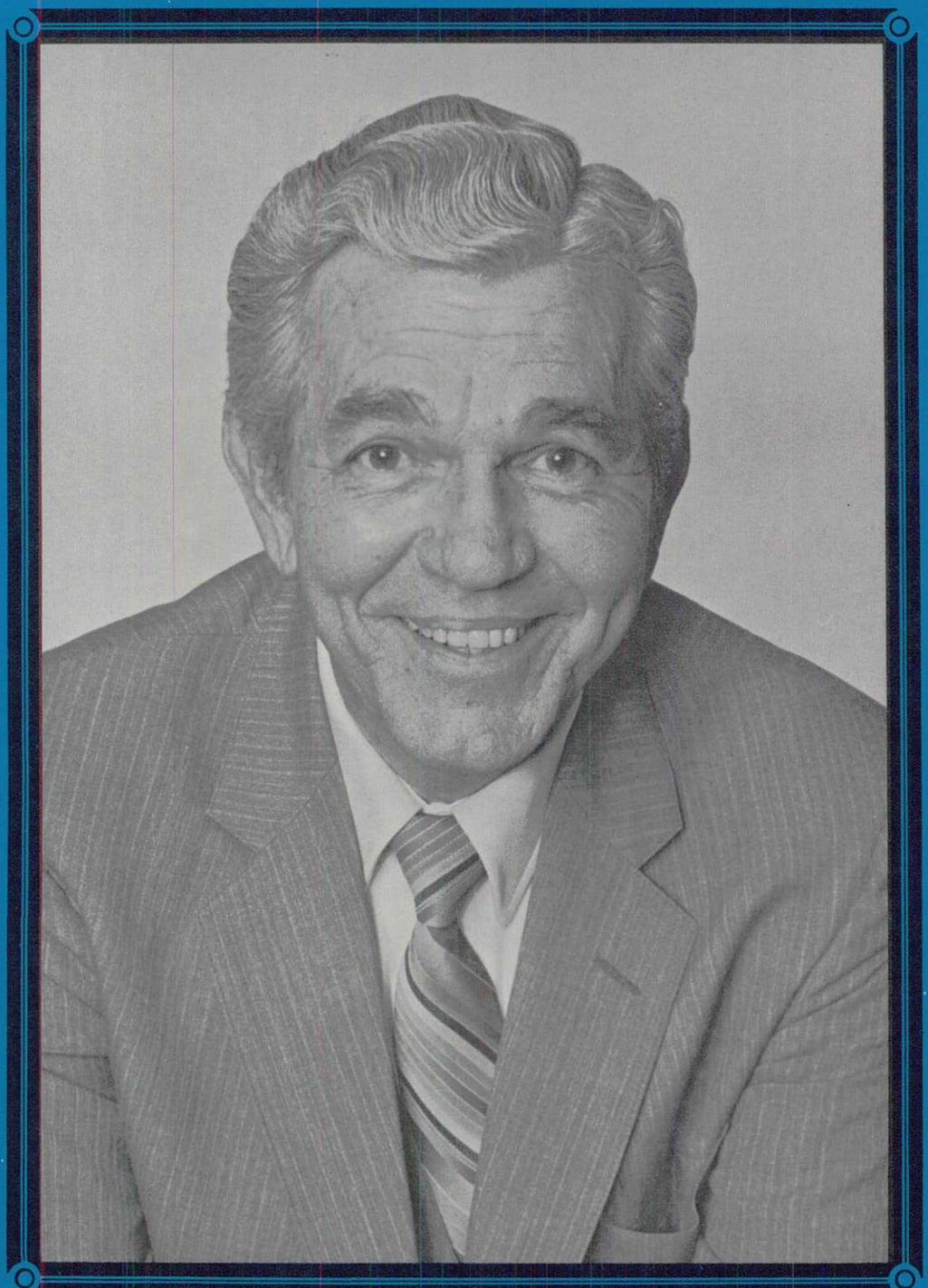

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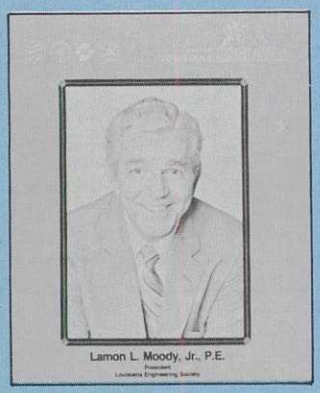
The LOUISIANA ENGINEER is the official publication of the Louisiana Engineering Society and the journal of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The magazine is published in February, April, June, August, October and December. Subscription $1.00 per year for engineers registered in Louisiana and non-registered members of the Louisiana Engineering Society. One dollar of each LES member's annual dues is set aside for six issues of the LOUISIANA ENGINEER. Second class postage paid at Baton Rouge, La. The Louisiana Engineering Society and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors do not guarantee the accuracy of statements made or necessarily concur with opinions expressed in this publication. ISSN : 0024-6794

Address LES Communications and Change of Address Forms to LOUISIANA ENGINEERING SOCIETY, P. O. Box 2683, Baton Rouge, La. 70821. Telephone 504/344-4318; 1213 Nicholson Drive, Baton Rouge, La.



ABOUT THE COVER

The new president of the Louisiana Engineering Society is Lamon L. Moody, Jr., P.E. His biography appears on page 5.

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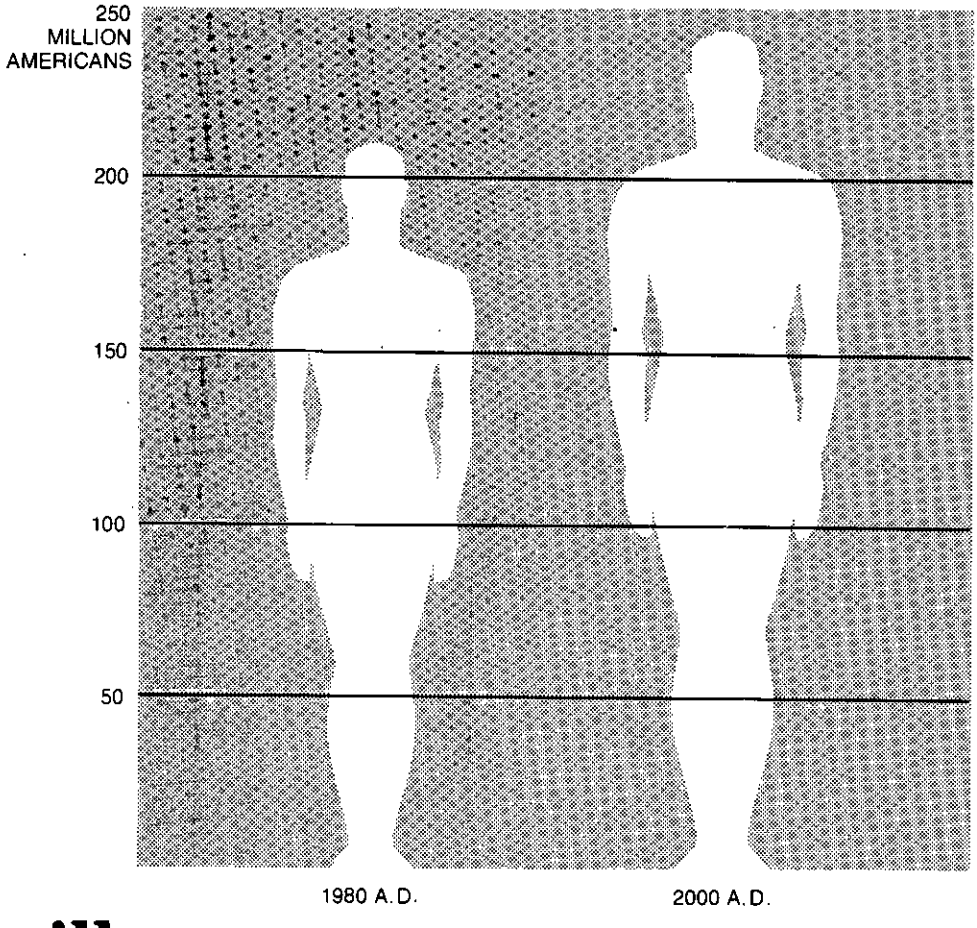

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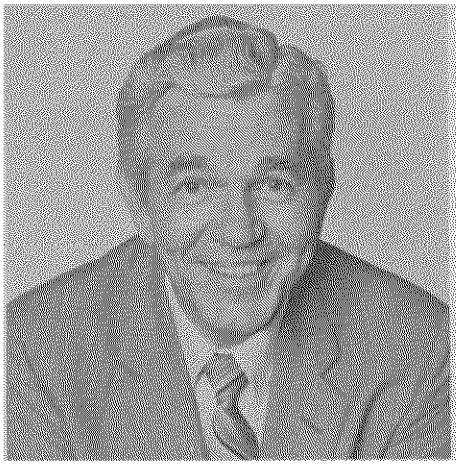
PRESIDENTIAL PRIVILEGE

We have all been taught to "Seek, and ye shall find; knock and it shall be opened unto you." We have begun our new Society year, and on the behalf of all the officers, directors, committee chairmen and members on the state and chapter levels, I want all of our LES members to know that we are seeking your help. I have always had a strong conviction that every engineer and land surveyor should give of themselves to the betterment of their professions. It all starts with charity, for true charity is the desire to be useful to others without the thought of recompense.

We have been elected and selected by you to serve you, and now that we have accepted the responsibilities of leadership of the Society we will need your help and guidance in performing our duties on the highest level of accomplishment so traditional to our respective predecessors. Due to the present economic conditions in the nation and state, the greatest challenge facing us today is membership in the LES and the NSPE. Every member of the LES must concentrate his or her efforts not only in obtaining new members but retaining our present members.

What more noble cause can we have than to serve each other in our profession and thereby serve our fellow man? The goals of our Society are the professional improvements of its members, the encouragement of social intercourse among engineers, and the advancement of engineering in our beloved state and nation.



Lamon L. Moody, Jr., P.E.
LES President

The LES is primarily a volunteer organization and every member must contribute time, efforts, and talents to get things done. Our membership covers all disciplines of engineering, land surveyors, and the employee as well as the employer. Our professional staff in the state office is, in my considered opinion, the most excellent in the nation. It takes money as well as volunteer efforts to run the LES and we therefore need active dues-paying members to survive. The better the financial picture, the better we survive, and the better we accomplish our goals.

When was the last time you asked a fellow engineer to join the LES? When was the last time you attended a LES chapter meeting? When was the last time you asked one of your chapter officers to appoint you to a committee? When was the last time you asked your wife to join the Ladies Auxiliary? When was the last time you attended your Technical Society meeting? I urge you to do a little soul searching and decide for yourself whether you are contributing to the betterment of the profession you have chosen and love.

Our state and nation are still facing critical problems in energy, natural resources, environment, education, national defense, etc. Engineers, by our education and training, have logical and analytical minds and we are therefore best suited to take a leadership position in resolving these problems by actively applying our individual and collective efforts.

Our voices are being heard in the state capitals and in Washington. Much improvement is needed and we must work to amplify our voices in these areas and in every community of the state and nation. Let's work together to show the general public that we of the engineering profession are ready, willing and able to serve them for the improvement of their health, safety and welfare.

Through this message, the LES state and chapter officers and committee chairmen have knocked on your door, and have extended a warm invitation to all members to get involved and active, and to all non-LES members to join us in our efforts to improve our profession and to do our part in making this a better world to live in. PLEASE OPEN YOUR DOOR!

Lamon L. Moody, Jr.... A Biography

Lamon Lamar Moody, Jr., born in Bogalusa, Louisiana, on November 8, 1924; son of Lamar Lamon Moody and Vida Seal Moody; married Eve Thibodeaux, September 22, 1954; children - Lamon Lamar III (born August 30, 1955), Jennifer Eve (born December 19, 1957) and Jeffrey Matthew (born January 7, 1962);

Served with the U.S. Marines in the South Pacific during World War II, 1943 - 46; wounded in action and received Purple Heart and other decorations;

Received Bachelor of Science Degree in Civil Engineering from the University of Southwestern Louisiana in 1951; completed course in Business and Management with the Alexandria Hamilton Institute;

Employed by the Texas Company (Texaco, Inc.) in New York City from 1951 - 52 as Project Engineer; became Engineering Manager in headquarters of African Petroleum Terminals (subsidiary of the Texas Company); served as Projects Manager and Chief Engineer of African Petroleum Terminals in the French and British Colonies of West Africa from 1952 - 56 in charge of designing and constructing ocean terminals and bulk depots throughout West Africa; employed by Kaiser Aluminum and Chemical Corporation, Baton Rouge, Louisiana, as Project Engineer, Chief Construction Engineer and Chief Engineer from 1956 - 63;

Founder of consulting engineering firm, Lamon Moody and Associates, in 1963, later incorporated as Dyer & Moody, Inc., Chairman of the Board of Directors and President;

Life Member of the LES, Fellow in the American Society of Civil Engineers and American Congress of Surveying and Mapping, Member of the Louisiana Land Surveyors Association, Member and National Director of the National Society of Professional Engineers, and Member of the Consulting Engineers Council;

Registered Civil Engineer in Louisiana, Arkansas, Mississippi and Texas. Registered Land Surveyor in Louisiana and Texas;

Assisted in establishing Student Chapter No. 1 of the Louisiana Engineering Society at the University of Southwestern Louisiana in 1949; President 1950; President of the Blue Key National Honor Society at USL in 1951;

Continued on page 20

Coal - Not Just Another Fuel

Coal, the fuel that helped spawn the Industrial Revolution over two hundred years ago and powered the first locomotives across the United States over one hundred years later, was toppled from its position of emminence by other, cheaper fossil fuels - oil and natural gas. Once the source of 90 percent of this country's energy, coal now produces less than 20 percent.

But coal is making a comeback - a comeback that is effecting sweeping changes in the coal industry as more and more firms with high technology (know-how) come to the realization that coal, not oil or natural gas, is the most logical fuel to meet the industrial world's long-term energy requirements. Yet all too many do not really understand coal - *and coal requires understanding.*

The economic implications of a coal boom for the United States are enormous. About one third of the total world supply of coal is in the U.S. Over three hundred fifty billion short tons of coal can be recovered using mining technology - enough to last over 250 years even if consumption were to double immediately.

The shift to coal could bring a tremendous influx of dollars to coal producers, transporters, and port operations, help the balance of payments and stabilize the world energy situation.

In order to achieve these goals, however, careful long range planning by everyone involved in the industry - from producer to consumer - will be required. Just as its use presents solutions to some problems, large scale, high technology utilization of coal presents problems of its own - problems that will require a large increase in planning as well as coal technology. Even with all our coal, it must be efficiently used. While today we know more about how to get the most B.T.U.'s out of each ton of coal, nonetheless we still are lacking a great deal of information about coal as a mineral.

To understand the industry in general, how the increasing demand for coal and how new, high-technology applications are affecting this industry, it is first necessary to understand the *mineral,* coal.

Coal - The Mineral

The origin of coal extends over several hundred thousand years into the past. Decaying plant and animal remains, known as biomass, were gradually covered by the earth. The weight of this covering, along with natural forces within the earth, compressed the biomass, creating heat which drove out the hydrogen and oxygen from the decaying material. The resulting solid is coal.

Variations in the composition of the biomass, the pressure and heat involved, the movement of the earth's surface, and the length of time the biomass was under pressure all affected the finished product. It is these variations that create some of the problems that the coal industry must solve.

Coal is placed into four broad classifications for grading purposes - lignite, subbituminous, bituminous, and anthracite. Figure No. 1 depicts the physical properties of each general classification.

At the bottom of the ladder is lignite. Lignite, high in moisture, has the lowest BTU value of all the coals. Today, several large power plants are being built to use lignite coal. Significantly, all are located at the mine site.

Next up the list is subbituminous coal. Most subbituminous coal is low in sulphur, thus easing pollution problems. Subbituminous coal contains roughly 9,500 BTU's per pound.

Bituminous coal is the most widely used coal in this country, producing about 12,000 BTU's per pound. And anthracite coal has the highest energy content of the four, producing 14,000 BTU's per pound. Some anthracite coal is also metallurgical coal. It is usually high in sulphur and is more difficult to mine. Use of anthracite coal is not expected to grow significantly in the future.

The four grades often overlap, and within these general divisions water, sulphur, metals, clay and other impurities can cause considerable variation. These variations are shown graphically in the following illustrations. Figure No. 2 indicates the process which takes place to form coal as nature changes organic material from peat to anthracite coal if sufficient time, heat and pressure are present. The value of Figure No. 2 is its ability to indicate the range of chemical differences which can exist for any classification of coal. To illustrate this point, draw a vertical line at any point on the horizontal scale for the bituminous coals. Figure No. 3 gives the chemical composition of the ash in selected coals. Figure No. 4 provides information as to the ash content and ash fusion temperatures values for several coal specimens.

Coal is constantly changing from the time it is taken out of the ground until it is consumed. The chief culprits are moisture and oxidation. Almost always shipped in open railroad cars and barges, and stored in the open, coal is at the mercy of the elements. A hot sun can dry the moisture out of coal, increasing its BTU value per pound. Conversely, adverse weather conditions such as snow and rain can add moisture to the coal, decreasing its value per pound. Such changes are rarely uniform. While the top layer may be dried out by the sun, the bottom of the load may be much higher in moisture content. Coal, when mined, can come to the surface with its temperature ranging from 80° to 140°. This temperature is a result of the chemistry of the coal and the geology surrounding the mined coal seam. The temperature at which spontaneous combustion of coal takes place will also vary for each coal and is related to the temperature at which it is mined. The specific coal being handled must be considered in establishing shipping and handling practices to avoid spontaneous combustion prior to its final use.

Coal - Technology is Creating Change

Modern fireboxes are designed for a specific duty and to operate on a specific quality of coal for optimum operating efficiency. Using the wrong coal in a modern firebox is no different than using the wrong fuel in an automobile. A coal with a particular sulfur level, and ash

with high metal content, shipped to two different power plants of different design and service requirements will not necessarily be acceptable for both plants. For example, the operating temperature could be higher for one thus fusing the slag as well as causing metal salts present in the ash material to vaporize and foul the convection section of the plant. European and Asian importers have long been complaining of the failure of some American coals to meet contract specifications. One of the root problems is that Japanese and European boiler designs require a narrow specification for the quality of coal used thus differing from American boiler requirements. To avoid these difficulties with customers, testing facilities designed with the specific needs for specification coal in mind are necessary at both the mines and shipping terminals. This is one area where essential changes must take place in the industry as the U.S. becomes the pre-emminent coal exporting nation in the world.

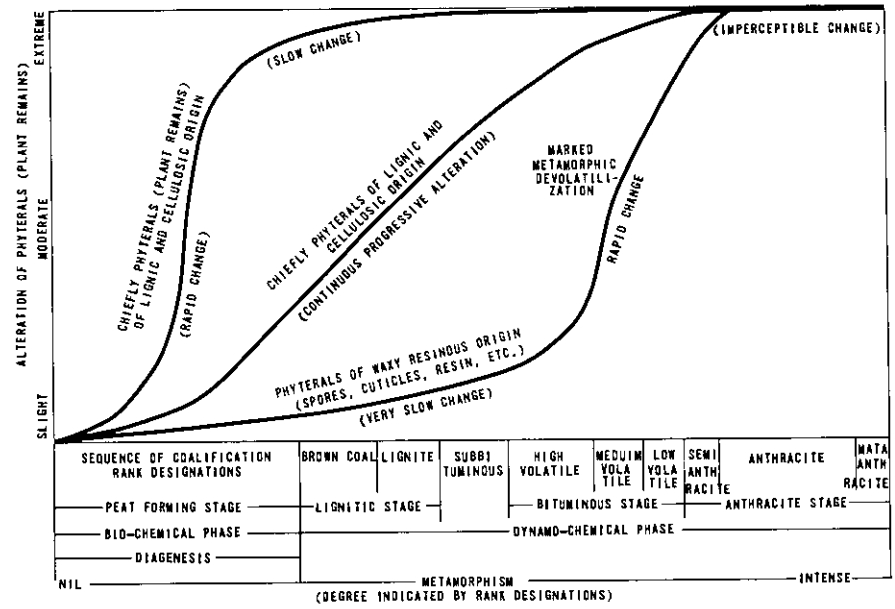
Because of the growing dependence of industry on specification coal, many of the older coal contracts are being renegotiated and the most recent contracts now specify a range of acceptable values for a given shipment. When the quality falls below a specified level, the price reduces according to a previously agreed-upon schedule. If the quality is above a specified level, the price increases. Such clauses protect both buyer and seller from the uncertainties of coal quality. To make this type of contract work, an acceptable method of testing must be agreed upon beforehand. Coal should be tested at the mine, at the terminal, and again at final destination. The optimum method is a continuous sampling device which provides the best indication of quality. Producers, ports, and terminals with an eye to the future are installing such devices. Indications are that importing nations more and more are directing their purchases for coal to producers who can control and verify quality.

Testing isn't the only area of the coal business where technology is creating

CLASSIFICATION OF COALS BY RANK

CLASS	GROUP	Fixed Carbon Limits, % (Dry Matter-Free Basis) EQUAL OR GREATER THAN	LESS THAN	Volatile Matter Limits, % (Dry, Mineral-Matter-Free Basis) GREATER THAN	EQUAL OR LESS THAN	Caloric Value Limits, Btu per lb (Moist, Mineral-Matter-Free Basis) EQUAL OR GREATER THAN	LESS THAN	AGGLOMERATING CHARACTER
I. Anthracitic	1. Meta-anthracite	98			2			
	2. Anthracite	92	98	2	8			Nonagglomerating
	3. Semianthracite	86	92	8	14			
II. Bituminous	1. Low-volatile bituminous coal	78	86	14	22			
	2. Medium-volatile bituminous coal	69	78	22	31			
	3. High-volatile A bituminous coal		69	31		14,000[d]		Commonly agglomerating
	4. High-volatile B bituminous coal					13,000[d]	14,000	
	5. High-volatile C bituminous coal					11,500 10,500	13,000 11,500	Agglomerating
III. Subbituminous	1. Subbituminous A coal					10,500	11,500	
	2. Subbituminous B coal					9,500	10,500	Nonagglomerating
	3. Subbituminous C coal					8,300	9,500	
IV. Lignite	1. Lignite A					6,300	8,300	Nonagglomerating
	2. Lignite B						6,300	

FIGURE 1



METAMORPHIC ALTERATION OF PHYTERAL CONSTITUENTS

FIGURE 2

CHEMICAL COMPOSITION OF COAL ASH

Mine Locations of Selected Coals	SiO_2	Al_2O_3	Fe_2O_3	CaO	MgO	Na_2O	K_2O	SO_3
Alabama,								
Tuscaloosa County	48.2	28.4	15.1	1.8	0.8	0.3	1.2	2.4
Colorado,								
Moffat County	34.8	22.7	6.0	12.8	2.0	3.0	0.3	15.1
Illinois,								
Kankakee County	36.0	20.5	35.4	1.8	0.8	0.6	1.8	1.2
Stark County	42.1	20.1	22.8	6.6	1.1	0.5	1.9	2.0
Schuyler County	48.0	14.7	18.7	10.4	0.6	0.2	1.8	2.1
Kentucky,								
Pike County	52.0	34.5	6.4	1.9	0.6	0.5	3.3	0.8
Bell County	46.9	28.4	12.0	2.7	2.0	0.2	2.0	4.5
Ohio County	49.3	19.4	27.4	1.8	0.7	0.2	1.9	0.2
North Dakota,								
Mercer County	23.8	10.5	10.1	16.6	5.1	8.2	0.6	23.5
Ward County	15.0	13.0	6.1	36.0	10.8	0.9	0.3	16.6
Ohio,								
Belmont County	42.4	19.6	27.5	4.8	1.2	0.2	1.6	2.0
Jefferson County	50.4	23.2	21.9	1.9	0.5	0.1	1.0	0.4
Noble County	36.7	19.9	37.8	1.8	0.6	0.2	1.4	0.7
Pennsylvania,								
Bedford County	57.7	32.1	5.1	1.7	0.9	0.2	2.6	0.2
Allegheny County	49.2	24.8	20.3	1.8	0.5	0.2	3.6	1.3
Butler County	26.9	18.2	52.5	1.2	0.4	0.2	1.0	0.8
West Virginia,								
Barbour County	52.5	35.6	6.1	1.8	0.6	0.2	1.9	0.9
Fayette County	48.5	30.1	13.6	1.8	0.8	0.7	2.6	1.3
Kanawha County	37.9	23.8	31.4	2.0	0.5	0.5	0.5	2.9

FIGURE 3

change. Coal producers are turning to "prep plants" and computer controlled blending to produce coal shipments that consistently meet contract specifications. This is necessary because of the variation in coal and the need to upgrade. Prep plants are facilities designed primarily to reduce sulfur and other materials and metals which tend to reduce BTU value as well as create an ash that must be disposed by the consumer after the coal is burned. A 200 tph plant near Beckley, West Virginia, has installed computer control and reports significant improvement in quality and profitability of the coal produced when comparisons to manual operations are made. Britain's Coal Board is testing computer controls on several prep plants and is reported to be sold on the results. Foxboro Instrument Company has recently exported their technology to one of the U.S.'s greatest coal competitors (Australia) to computerize a new prep plant. A truly modern prep plant can tailor its output much like an oil refinery can control its product. Prep plants are now being tested to significantly reduce the moisture level of lignite thus raising its BTU value, lowering its shipping cost and reducing the required firebox size. Prep plants are also looking at subbituminous coal with the objective of raising it to bituminous value. While this increases the unit cost per ton of coal, it is becoming apparent that the on line time for boilers can be longer and that the actual cost per BTU measured at the buss bar can be less, even though the initial cost per ton is more.

Another technological advance being applied by the coal industry is computer modeling. Computer modeling is becoming more and more a means for determining which is the best coal for a specific plant. The wide range of existing boiler design in this country can be expected to place more emphasis on specially prepared coal for specific uses. In fact, this approach is being taken a step further. Once the fuel source is settled on for a new plant, the design is developed from a computer model.

Today, the terminal is the point in the system where adjustment can best be made by blending grades of coal which have not been put through a prep plant to meet customer specifications. This is the last point in the system before reaching the customer. Customer demands for coal to meet purchase specifications are making it necessary for terminals to sample all receipts, thus helping to insure that the quality of their mine shipments will enable the terminal to meet customer demands. The limitations of presently designed terminals, the all too often occurrence of hot coal, will force even the most reluctant in the coal industry into further technological changes and advances. The use of programmable controllers is already greatly expanding the blending capabilities of some terminals.

Possibly the most important process currently envisioned for coal use is insitu combustion. Burning coal where it lies in the ground would help recover a large portion of coal reserves (about 20%) which cannot be economically extracted using current mining methods. Insitu combustion of coal is currently approaching commercial application in America. Russia has used it for some time, and Australia is getting a test project started. The product of insitu combustion of coal is methane gas. One need only look at the flow sheet of a synfuel plant to see how the process is simplified by starting with methane vs. coal. This does not even consider the tremendous difference in capital investment. In addition, a major part of the environmental problems of the front end of a coal synfuel plant are left in the ground. It is only a matter of time before this approach to converting coal to gas and/or liquids becomes commercial in America.

ASH CONTENT AND ASH FUSION TEMPERATURES - VALUES FOR SEVERAL SPECIMENS

Coal Specimen	High-volatile bituminous	Sub-bituminous	Lignite
Seam	No .6		
Location	Illinois	Wyoming	Texas
Ash (MF), wt%	17.36	6.6	12.8
Sulfur (MF), wt%	4.17	1.0	1.1
Analysis of ash, wt%			
SiO_2	47.52	24.0	41.8
Al_2O_3	17.87	20.0	13.6
TiO_2	0.78	0.7	1.5
Fe_2O_3	20.13	11.0	6.6
CaO	5.75	26.0	17.6
MgO	1.02	4.0	2.5
Na_2O	0.36	0.2	0.6
K_2O	1.77	0.5	0.1
Total	95.20	86.4	84.3
Ash fusibility			
Initial deformation temperature, °F			
Reducing	2,000	1,990	1,975
Oxidizing	2,300	2,190	2,070
Softening temperature, °F			
Reducing	2,160	2,180	2,130
Oxidizing	2,430	2,220	2,190
Hemispherical temperature, °F			
Reducing	2,180	2,250	2,150
Oxidizing	2,450	2,240	2,210
Fluid temperature, °F			
Reducing	2,320	2,290	2,240
Oxidizing	2,610	2,300	2,290

FIGURE 4

In this regard, but with a different technological approach, at one point in World War II, the German war machines depended entirely on coal as their source for fuel - even aviation gasoline was derived from coal. At least two of America's leading chemical companies have major research programs underway to do the same, but utilizing more advanced and sophisticated processes.

Soon to come on the market are two, and possibly more, projects for burning cleaned up powdered coal in fireboxes designed for either coal or gas with some derating of the efficiency of the boiler as compared to presently used fuels. Although many industrial and utility boilers are designed for oil or gas fuel, test runs to date support the position that these boilers can be converted to alternate slurry fuels such as coal-oil, coal-water, and coal-alcohol mixtures as part of a dual system to fire the boilers during off peak periods. In Germany, powdered coal has been successfully fired directly to the boiler. Alternate slurry fuels cause the boiler to be derated over the primary fuel performance. One large utility company is planning to convert their oil and gas fired boilers to coal-oil mixture fuel for approximately 85% of their load, at which time the boiler would be switched to oil or gas for peak load periods. The percentage of operating time at or below 85% loading makes the dual fuel approach attractive.

Coal - The Challenge

The single most important challenge facing the U.S. coal industry is future planning. If coal is going to provide a significant amount of world energy within ten years, work must begin now to increase mining capacity, increase the capabilities of prep plants and blending operations, and improve shipping capabilities. If we wait until the heavy demand is on before planning and building such facilities, we are sure to fall behind other coal exporting nations in the race to supply the world coal market. Supply and demand, and ultimately the consumer dictate the market place. How large the ultimate U.S. export tonnage will be depends on the speed with which the U.S. can meet world competition at competitive prices. This is an exciting challenge for the industry and for the engineering profession.

Again, "Coal is King" and the domestic and export markets hold great promise for this industry. It would, however, behoove those investors and operators planning to build new or expanded operations in order to capitalize on the expanding coal markets to give full consideration to the changes taking place, as well as the nature of the product. Coal is by no means just another fuel.

Harry D. Hoskins, Jr., senior vice president, Long Range Planning, Walk, Haydel & Associates, Inc., New Orleans, is a graduate of the Colorado School of Mines with a degree in mining engineering. He is registered in Louisiana in Mining and Mechanical engineering.

This article is a result of Mr. Hoskins' work with coal producers shipping terminal operators, the Bureau of Mines, and the Department of Energy.

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Executive Director
Louisiana Engineering Society



Two Louisiana Students Successful In NSPE Scholarship Program

NSPE made available 137 scholarships and grants to high school seniors interested in pursuing engineering careers in the 1981-82 program.

From the 31 finalists in Louisiana, two students were chosen for awards in the program:

NSPE Regional Grant - $1,000
George W. Treese
738 Columbia Street
Shreveport, La. 71104

NSPE-University of Texas, Austin - $3,000
Anita B. Ortiz
3820 Jackson Street
Shreveport, La. 71109

The 1982 recipient of the LES $1,000 scholarship, who will be attending LSU in the fall, is:

Kevin P. McClanahan
11545 Robin Hood Drive
Baton Rouge, La. 70815

Congratualtions to each of these students and "well done" to the Scholarship Committee and chapters involved in this most worthwhile program.

Alexandria Chapter Wins 1981-82 Membership Contest

The Alexandria Chapter won the 1981-82 membership contest with a 216.7 percent gain in membership. They have 23 new members, 16 of whom joined NSPE, against a quota of 18 members.

The Bayou Chapter edged out the Monroe Chapter for second place with 188.2 percent gain versus Monroe's 188.0 percent.

Overall, the Society gained 324 new members, 80.2% of the 390 quota. After crediting chapters with one point for each new NSPE member, the Society contest percentage gain was 133, the lowest since 1972-73.

Congratulations to the Alexandria Chapter and to Eric Duck, E.I.T., chapter membership committee chairman.

Election of Officers for 1982-83

The ballot for officers, directors and approval/disapproval of an amendment to the constitution were mailed to all 3,281 voting members on May 19. The election closed on June 25.

The Tellers Committee composed of Paul D'Antoni, P.E., Baton Rouge; David Donavan, P.E., New Orleans; and W. J. Lechtenberg, P.E., Lake Charles counted the ballots on June 28.

The results showing votes received:

Dudley Hixson, P.E., President-Elect	775
Henry Markel, P.E., 2nd Vice President	776
Robert Blanche, P.E., Secretary-Treasurer	778
Neil Klock, P.E., State Director	770
Al Adoue, P.E., State Director	764

The proposed amendment to Article III of the constitution, which makes the LES president the second national director when NSPE membership exceeds 1500 members, passed by a vote of 689 for to 65 against.

A total of 779 correct ballots and 15 illegal ballots were received. The majority of the illegal ballots did not have name printed or typed and signed on the back of the envelope containing the ballot.

LES Wins NSPE Membership Contest

The Louisiana Engineering Society was the winner of the NSPE 1982, Group IV, membership contest. The award plaque was presented to Lamon Moody, P.E., president-elect, at the national meeting in Omaha, Nebraska on July 16.

LES moved from 1,355 NSPE members in November 1980 to 1,635 members at the close of the contest on May 1, 1982.

NSPE commended LES for its work and accomplishments in membership growth and extended its best wishes to all members of the Society for their efforts in gaining this recognition.

NSPE Group IV is comprised of the states of Colorado, Iowa, Minnesota, Georgia, Indiana, Louisiana, North Carolina and Tennessee.

New Position for Blaise Carriere

Blaise M. Carriere, P.E. has been named director of business development for the Baton Rouge office of the international consulting firm of Howard Needles, Tammen and Bergendoff. His area will include Louisiana, Mississippi, Alabama and Tennessee. Previously, Carriere was director of streets for the City of New Orleans.

Carriere has been a member of the Louisiana Engineering Society since 1963. He was recipient of the F. Hugh Coughlin Young Engineer Award in 1973; president of the New Orleans chapter in 1979-80; and member and chairman of the Engineers Selection Board in 1982.

Barnard and Burk Group, Inc. Moves Corporate Headquarters to Baton Rouge

The corporate headquarters of Barnard and Burk Group, Inc. returned to Baton Rouge from Pasadena, California, where it was moved in 1978 after the 1973 acquisition by Aerojet-General Corporation. The move back followed the purchase of Barnard and Burk from Aerojet-General late in 1981 by Matthew Hall & Co., Ltd., London, England.

Exams for EIT, PE, LSIT, & LS

Examinations for engineers-in-training, professional engineer, land surveyor-in-training and the Principles and Practice of Land Surveying will be given on October 30, 1982. The next date for the Laws and Procedure of Land Surveying, offered once a year, is April 16, 1983.

For further information contact Louisiana State Board of Registration, 1055 St. Charles Avenue, New Orleans 70130.

Fire Marshals Plan Review Fee

Beginning July 1, 1982, the Fire Marshal's plan review fee shall be $5.00 per sheet with a $10.00 minimum, in accordance with Act 493, 1979 Louisiana State Legislature. Two sets of drawings shall be submitted, the charge is for one set *only*. A cost of $2.00 for postage and handling will be added.

Les Membership Potential

In July 1982, a comparison of professional engineer and engineer-in-training members was made with the State Board of Registration roster of PE's and EIT's residing in the state. The comparison shows that LES membership is 32 percent of the total potential membership. The total LES registered members is 2,798 and the State Board of Registration is 8,839. This shows LES with 6,041 potential members out there who need recruiting.

The Alexandria chapter leads all chapters with a ratio of persent members to potential members of 51%. The Bayou chapter shows 43% and Monroe 40%. Other chapters: Lafayette - 35%; Lake Charles and Shreveport - 32%; and Baton Rouge and New Orleans - 29%.

Dallas builds lifelines for the future with Concrete Pressure Pipe.

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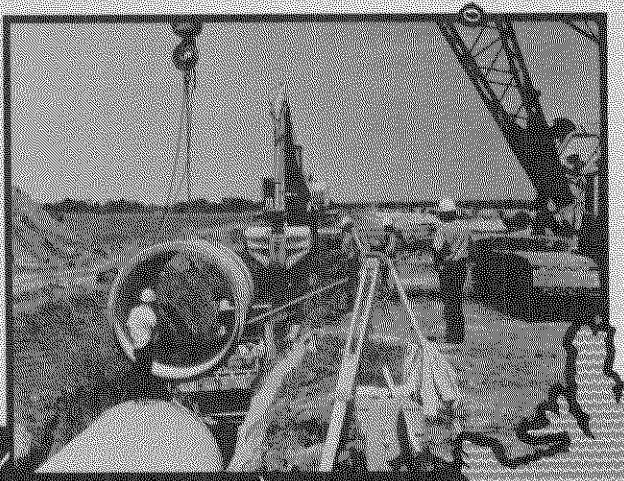

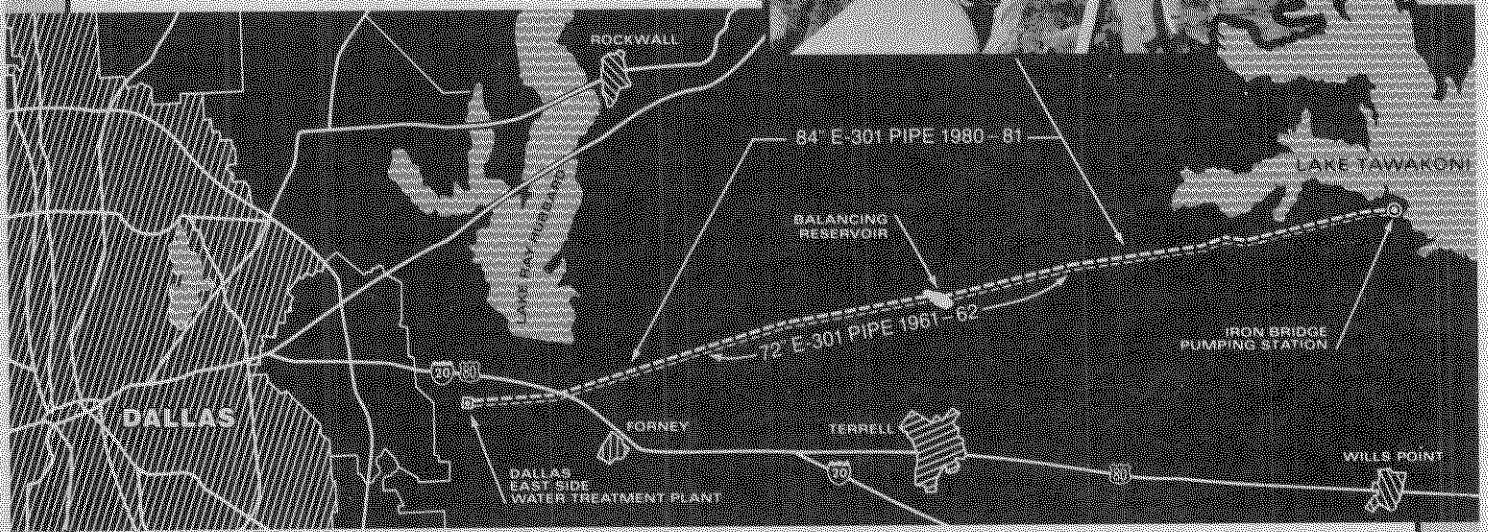

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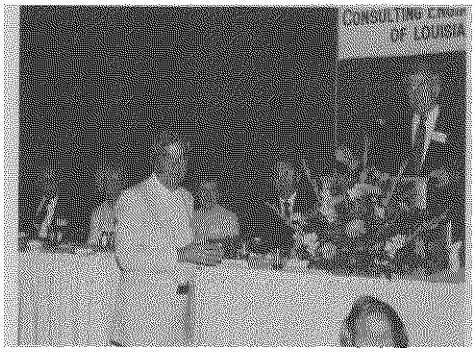
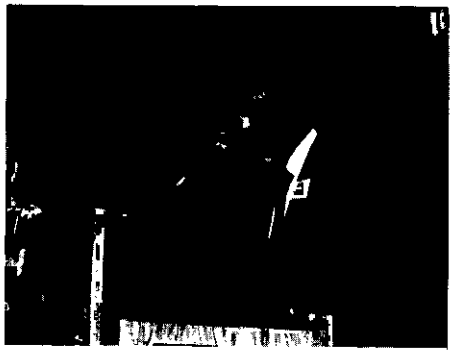
1982 CEC/L Annual Meeting

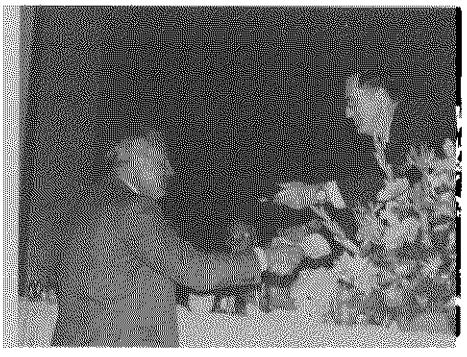
Consulting Engineers Council of Louisiana recently held its 1982 Annual Meeting in Baton Rouge, Louisiana, at the Hilton Hotel. CEC/L sponsored its first golf tournament and tennis tournament in conjunction with the meeting. Each event has about 20 participants. Golfing was handled by Raoul Levy, while Larry McKee was in charge of the tennis matches. The ladies toured and lunched at Mount Hope Plantation, one of the oldest plantation sites in the Baton Rouge area. They then toured the LSU Rural Life Museum. The Awards Banquet concluded the day's activities. Special guests at the function included Lew Hoffman, ACEC Vice President, and his wife, Juanita; Norman Koonce, president of the Louisiana Architects Association; R. C. "Doc" Spears, Executive Director of the Louisiana Engineering Society, and his wife, Mary; and John Ritter, president of the Louisiana Engineering Society.

Outgoing president, Robert W. McKenzie, welcomed everyone and introduced his retiring Board members, presenting each with a plaque of appreciation. Raoul Levy and Larry McKee awarded trophies to the winners of the sports events.

The A. E. Wilder, Jr., Award was presented this year to Warren G. Moses. This award, in memory of CEC/L's former Ex-





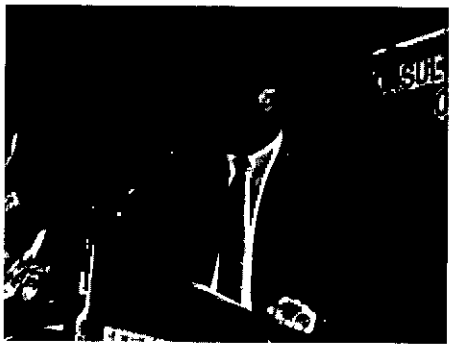


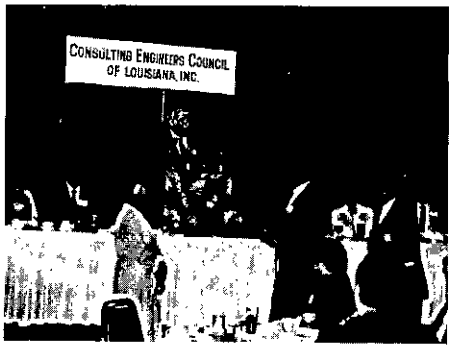


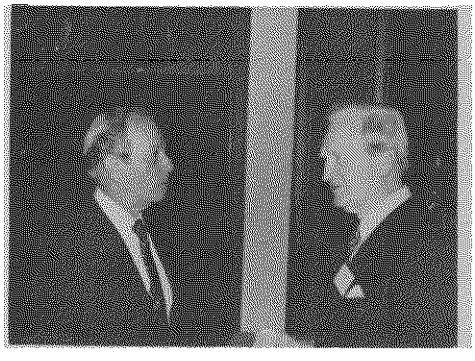
















ecutive Director who passed away in early 1976, is presented each year to a CEC/L individual who has contributed outstanding service to the organization. Warren Moses was very active in getting CEC/L started over 30 years ago when it was then called the Gulf Institute of Consulting Engineers. Moses also was the only man ever to have served as president of this organization twice, once when it was the GICE and once when it was CEC/L.

As a special feature, Mr. Wilder's widow, Adele, was on hand to present the award to Moses.

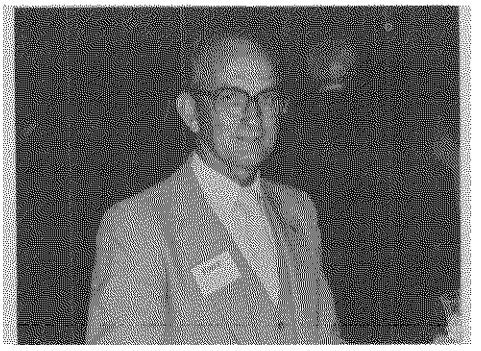
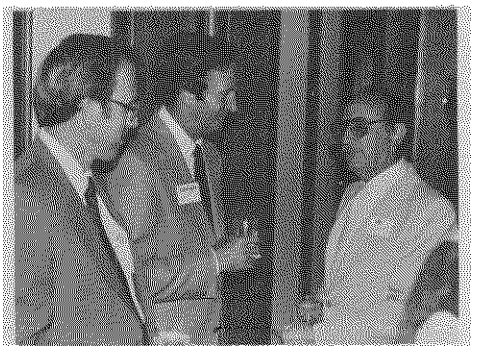
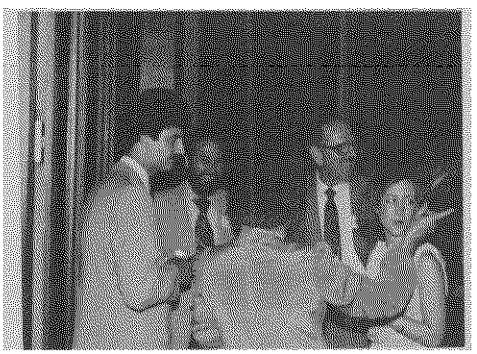
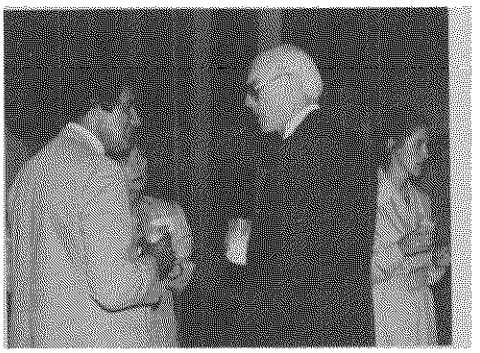
At this point in the program, President McKenzie retired his position and handed the gavel over to incoming president, Peter R. Quirk, who then introduced his 1982-1983 Board of Governors.

CEC/L's Executive Director, Warren Wilder, presented both retiring president McKenzie and retiring national director, Robert Fenner, each a plaque of silver ingots as a token of appreciation for their years of work as well as to commemorate the American Consulting Engineers Council's 25th Silver Anniversary. To conclude the evening, the group was treated to a morale boosting talk by LSU basketball coach, Dale Brown. It appeared that everyone who attended enjoyed the day.



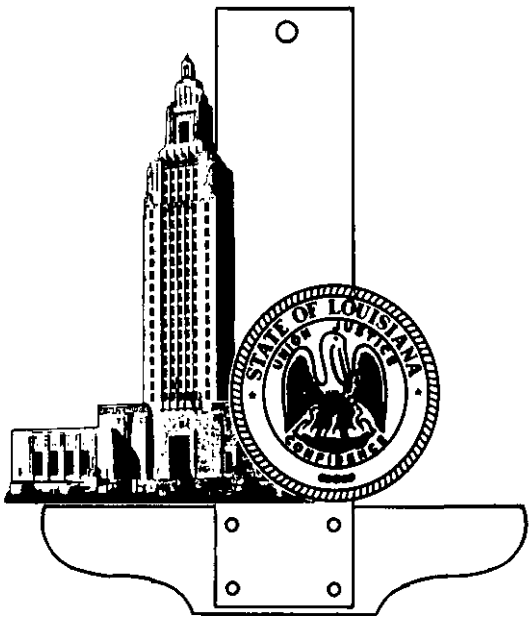





1982 Legislative Update

Wilfred B. Barry, P.E.
Chairman, Legislative Committee



The State Legislature adjourned July 12 and of the 2600 bills submitted, some 950 bills were passed. Of those, two bills the Louisiana Engineering Society sponsored were passed. Several bills being opposed were successfully amended to lessen the impact on the profession. A description of the bills LES sponsored, as well as some of the other important bills affecting our profession, are as follows:

Increase of Registration and Renewal Fees for Professional Engineers and Land Surveyors: Senate Bill No. 710 passed both houses without amendments and is expected to have the Governor's signature soon. As previously mentioned in other alerts, the bill will increase revenues to the Board marginally and in stages such that the Board is assured of a solid financial footing for the next two years.

Resolution of A/E Corporate Practice Restraints: After the Architects Licensing Board contacted our Registration Board about joining together to study the problems involved in offering and providing architectural and engineering services, a concurrent resolution was drawn up. The resolution provided that three members from each board would form a study committee with a seventh independent unaffiliated member to be chosen by the previous six. The seven man committee would be charged with studying the problems posed by the present law requiring majority ownership held by Architects in order for a corporation to offer and contract to provide architectural services. The Committee is to make a report with recommendations and proposed legislation for the 1983 legislative session.

After much deliberation on the matter from the Board of Registration and the LES Board of Directors, it was decided that a negotiated and peaceful solution worked out in an equitable manner was far more attractive than slugging it out with the architects in front of the Legislature. The House Concurrent Resolution No. 188 was passed by the Legislature, and as a result, the bills legalizing A/E practice for engineering corporations were not brought up in committee.

Liability Protection for Engineers Employed in Local Government: House Bill No. 1205, indemnifying engineers employed by local government from claims of liability for acts of negligence, was amended in committee and on the House floor. The Louisiana Municipal Association, the Police Jury Association and Representative Dischler, the author, all had problems with the amendments. As a result, the bill was put back on the House calendar, never brought up again, and died.

The Gomez Bills: House Bills Nos. 583, 584, 585, 587, 589,591,594, 595, 596 were all passed by both houses. Almost all of these bills were opposed. Some were amended by the combined efforts of the Louisiana Architects Association and LES to minimize the adverse impact on the design profession. Some of the important changes affected by the bills are:

- Ability to specify a particular product or construction technique to coordinate with existing materials, inventory or construction was severely limited.
- Buildings of $125,000 in cost, including slab but not land costs, can be constructed without licensing requirements.
- State will become owner of plans prepared for state projects and subject to re-use. The original designer, if not contracted for preparing the re-use plans, is specifically indemnified from any liability on the re-use.
- Arbitration proceedings between the State and the Contractor and between the State and the Design Professional can be joined together at the discretion of the state. Such combined proceedings must follow the rules of the American Arbitration Association for the Construction Industry.

House Concurrent Resolution No. 188. Passed both houses and signed. This is the resolution that establishes a seven man committee made up of three members of each the Engineers' Registration Board and the Architects' Licensing Board, charged with studying the A/E corporate practice problems and to make a report with recommendations and legislation to resolve them.

A recap of all bills referred to in the Legislative Alert of June 1, 1982 is available from your legislative committee chairman or the state office.

The LES Legislative Committee has had considerable voluntary help in reviewing and tracking these bills, but in order for legislative efforts to be truly effective in protecting the interests of all engineers in this state, the Committee has found it necessary to employ a lobbyist to be present in the legislature when volunteers are unavailable. In addition, the law, and the bills that propose to change them, are continually in need of examination by an attorney qualified to give us opinions on how passage or non-passage will affect our profession.

This is the first year of having a lobbyist assist us. To offset the expense to the LES budget, the Society asks that contributions be made to Legislative Committee funds. We would appreciate your making a donation to the LES Legislative Fund - 1982 and mailing such contribution in any amount to the LES state office at P.O. Box 2683, Baton Rouge, Louisiana, 70821!!



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Mr. A.J. Favata
Exhibit Manager
American Society of Civil Engineers
345 East 47th Street
New York, NY 10017

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NAME _____

TITLE _____

COMPANY _____

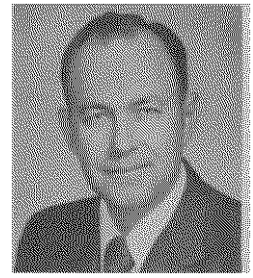
ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

NÔTRE MÉTIER

Paul L. Landry, P.E., Executive Secretary, Louisiana State Board of Registration for Professional Engineers & Land Surveyors.



Rules of the Board

A copy of these rules was distributed in the last issue of the LOUISIANA ENGINEER. A few questions have come up requesting an interpretation of these rules and how they might not apply in specific cases. The question which comes up repeatedly is—"Do I really have to seal each drawing when a design packet might have many drawings?" The answer is YES—LAC 19-3:10.4.1 states in part "—each sheet shall be sealed by the registrant or registrants responsible for each sheet." The next comment I hear over the phone is—"That's a lot of work—why does the Board have this rule?". My best answer, in my opinion, is that the Board does not know of a better way to protect the public than to require *registrants* of the Board to clearly identify all of their work.

Then the next point made is—"But my client, employer, or supervisor could care less if I stamped my drawings or not." Further discussion usually reveals that the client, employer, or supervisor is not a registrant of the Board, not an engineer or surveyor, and may or may not have the best interest of the public in mind.

I hear repeatedly that Clerks of Court throughout the state will record any and everything brought in to be recorded. Professional Land Surveyors find plats recorded which were not sealed by a registrant of the Board. How valid are these plats in litigation? This is a serious problem and a solution for correcting this problem immediately or in the near future has not been forthcoming. Registrants of the Board can assure the public that the professional is accountable. Your seal is your identity—use it.

Corporations

Corporations (domestic and foreign) who provide or offer to provide professional engineering, land surveying, or professional engineering and land surveying services, must be registrants of the Board.
(LA RS 37:689).

Certificates of registration and qualification of corporations and other firms, expires each year on June 30 and are thereafter invalid unless renewed. The following firms have not renewed their certification:

Delinquent Engineering Firms

A & M Tax Services, Inc.
Metairie, La. 70002
Acadian Engineering Co., Inc.
Baton Rouge, La. 70821
Allied Engineering Corporation
New Orleans, La. 70113
Alpha Energy Conservation, Inc.
Baton Rouge, La. 70816
Robert B. Anderson
New Orleans, La. 70119
Applied Geomechanics, Inc.
Baton Rouge, La. 70808

B. E. & C. Engineers, Inc.
Seattle, WA. 98124
BWT-Furlow/Philbeck, Inc.
Lafayette, La. 70508
Baker CAC, Inc.
Belle Chasse. La. 70037
Barron, Heinberg & Brocato
Alexandria, La. 71301
Baskerville-Donovan Engineers, Inc.
Pensacola, FL. 32501
Frank Beaullieu III & Associates
Lafayette, La. 70501
Berger Engineering Company
Dallas, TX. 75220
Brassette Engineering Corporation
Lake Charles, La. 70605
Bridgefarmer, Brown & Associates
Dallas, TX. 75240
Ron B. Bridges & Associates
New Orleans, LA. 70114
Broadmoor Corporation
Metairie, La. 70011
Daniel Brown & Associates, Inc.
Colfax, La. 71417

Caffery, Pate & Reaux
Lafayette, La. 70501
Camp Dresser & McKee, Inc.
Boston, MA. 02108
Castle Engineering, Inc.
Metairie, La. 70002
Charles Collins & Associates, Inc.
Lafayette, La. 70505
Con-Eng, Inc.
Rayne, La. 70578

Delta Design, LTD
Gretna, La. 70053
Design Analyst: Engineers & Consultants
Lafayette, La. 70504
Development Engineering Co., Inc.
Baton Rouge, La. 70808
Digital Engineering Services, Inc.
Baton Rouge, La. 70805
Du Bois, Carman & Associates, Inc.
New Iberia, La. 70560

Electronic Engineers & Designers
Baton Rouge, La. 70802
Encon, Inc.
New Orleans, La. 70119
Engineered Maintenance Consulting Co., Inc.
Ponchatoula, La. 70454
Engineering Affiliates, Inc.
Baton Rouge, La. 70809
Engineering Specialties, Inc.
Covington, La. 70433
Engineering Technology, Inc.
New Orleans, La. 70113

Karl Finch Engineers, Inc.
Baton Rouge, La. 70815

Gannett Fleming Corddy & Carpenter, Inc.
Camp Hill, PA. 17011
General Engineering & Construction, Inc.
Scott, La. 70583
Gillen Engineering Co., Inc.
Metairie, La. 70002
Godwin Consulting Services, Inc.
New Iberia, La. 70560
Gonzales Plaza, Inc.
Baton Rouge, La. 70808

H & P Engineering Co., Inc.
Metairie, La. 70005
Haller's A/C Maintenance & Engineering Service Company, Inc.
New Orleans, La. 70126
Hamilton, Meyer & Associates, Inc.
Metairie, La. 70004
Harris & Varisco
Metairie, La. 70002
Hawkins Engineering, Inc.
Ferriday, La. 71334
Carl Heck Engineers, Inc.
Thibodaux, La. 70301
Herpeche Construction Co., Inc.
New Iberia, La. 70560
Hill Engineering Co., Inc.
Gulf Breeze, FL. 32561
Hudson Engineering Corporation
Houston, TX. 77036
Huffmaster & Associates, Inc.
Baton Rouge, La. 70809

I.P.C. Inc.
Broussard, La. 70518
Iberville Engineering, Inc.
Plaquemine, La. 70764
Ideal Engineering, Inc.
Houston, TX. 77074
In-Line Engineering, Inc.
Arcadia, La. 71001

James Engineering, Inc.
Baton Rouge, La. 70816
Joffrion & Associates, Inc.
Baton Rouge, La. 70816

Kemp Engineering Co., Inc.
Addison, TX. 75001

Legardeur International, Inc.
Belle Chasse, La. 70037
Linfield, Hunter & Gibbons, Inc.
New Orleans, La. 70130
Lotz Designers, Engineers & Constructors, Inc.
Horsham, PA. 19044
Luke Engineering Corporation
Lafayette, La. 70505

McCain and Associates
Baton Rouge, La. 70806
McCormick and Associates, Inc.
New Orleans, La. 70126
McDermott, Inc.
New Orleans, La. 70112
W. L. McMullen Engineering Co., Inc.
Brookhaven, MS. 39601
M. J. G. & Associates, Inc.
Kenner, La. 70062
Maloney-Crawford Corporation
Tulsa, OK. 74101
Marrero, Couvillion & Associates, Inc.
Baton Rouge, La. 70806
Russell A. Matherne, Inc.
Baton Rouge, La. 70898
Mel, Inc.
Baton Rouge, La. 70805
A. F. Meyer & Associates, Inc.
Shreveport, La. 71101
Monroe Design Services, Inc.
Swartz, La. 71281

Nesbit Engineering, Inc.
Baton Rouge, La. 70821
Nesbitt & Purtle
Shreveport, La. 71101

Nile Engineering, Inc.
Abbeville, La. 70510
North Lake Engineers, Inc.
Lacombe, La. 70445

Osborn & Associates, Inc.
Baton Rouge, La. 70806

PRC Consoer Townsend, Inc.
Chicago, IL. 60601
Page Communications Engineers, Inc.
New Orleans, La. 70112
E. Lionel Pavlo Engineering Co.
New Orleans, La. 70112
Peddada, Gilo & Assocs.
Alexandria, La. 71301
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Lafayette, La. 70508
Petro-Chem Construction Corporation
Sulphur, La. 70663
Pollock Engineering Co.
Lafayette, La. 70505
Prescott Follett & Associates
New Orleans, La. 70112

Regan & Luckett, Engineers
Jackson, MS. 39206

S.I.P. Engineering Corporation
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S.I.P, Inc.
Houston, TX. 77034
S.S. Engineers, Inc.
New Orleans, La. 70119
Salmon & Associates, Inc.
Baton Rouge, La. 70809
Samborn, Steketee, Otis and Evans, Inc.
Toledo, OH. 43624
Sargent & Lundy
Chicago, IL. 60603
Shilstone Engineering Testing Laboratory, Inc.
Houston, TX. 77007
Smith Engineering and Construction Co., Inc.
Long Beach, MS. 39560
Smith & Rich, Consulting Engineers
Monroe, La. 71201
Arnold R. Smythe, Jr.
Consulting Structural Engineer, Inc.
Metairie, La. 70001
Soil Testing Engineers, Inc.
Baton Rouge, La. 70810
Southern Engineering Services, Inc.
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Stan-Lane Engineering Consultants, Inc.
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Superior Engineering Company, Inc.
Port Allen, La. 70767
Surpco Engineers
Covington, La. 70433

Tiger Engineering, Inc.
Bowig, La. 70343
Timmerman Engineers, Inc.
Houston, TX. 77024
Trine Engineering Co.
Lafayette, La. 70505

Universal Engineering of Maplewood, Inc.
Sulphur, La. 70663
Universal Engineering & Supply, Inc.
Sulphur, La. 70663

W & A Engineers, Inc.
Metairie, La. 70010
Weatherby Engineering Co.
Houston, TX. 77057
Westinghouse Electric Corporation
New Orleans, La. 70179
Herbert G. Whyte Associates, Inc.
Gary, IN. 46402
H. E. Wiese, Inc.
Baton Rouge, La. 70821
Williams-McWilliams Co., Inc.
New Orleans, La. 70152
L.S. Womack, Inc.
Baton Rouge, La. 70809

Zervigon Associates, Inc.
New Orleans, La. 70118
Zumwalt & Vinther, Inc.
Dallas, TX. 75201

Delinquent Land Surveying Firms

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Metairie, La. 70002

Caffery, Pate & Reaux
Lafayette, La. 70501
Con-Eng, Inc.
Rayne, La. 70578

Delta Land Surveys, Inc.
Metairie, La. 70001
Frank Dunaway, Civil Engineer
Picayune, MS. 39466

Gonzales Plaza, Inc.
Baton Rouge, La. 70808

Continued on page 20

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its regular meetings at 1055 St. Charles Avenue-Suite 415, New Orleans, La. 70130 on the following dates:

1982	1983
Sept. 28	Jan 24 & 25
Nov. 23	Mar 22
	May 24
	July 26
	Sept. 27
	Nov. 22

EXAMINATION SCHEDULE	SPRING	FALL
	Apr. 16, 1983	Oct. 20, 1982
	Apr. 14, 1984	Oct. 29, 1983
		Oct. 27, 1984
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practice of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least 90 days prior to examination date.

FEE SCHEDULE
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APPLICATION FOR REGISTRATION:	
Professional Engineer	$75.00
Land Surveyor	75.00
Engineer-in-Training	25.00
Land Surveyor-in-Training	25.00
TEMPORARY PERMIT:	
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RENEWALS:*	
Professional Engineer	$20.00
Land Surveyor	20.00
Corporations	20.00
Engineer-in-Training	10.00
Land Surveyor-in-Training	10.00
Civil Engineer-Public Employee	20.00
CERTIFICATE REPLACEMENT:	
Professional Engineer	$10.00
Land Surveyor	10.00
Engineer-in-Training	10.00
Land Surveyor-in-Training	10.00
ROSTERS:	
Professional Engineer	$10.00
Foreign & Domestic Corporations	10.00
Land Surveying Compendiums	2.00

*Renewal fees are due not later than December 31 for individual registrants and for corporations no later than June 30. Fees for delinquent payments are twice the normal amuont the first six months delinquent and three times the normal fee thereafter.

LES-PAC

What Is LES-PAC?

LES-PAC is a voluntary, non-profit, unincorporated committee whose membership consists of engineers, their spouses, and others who are involved in political action.

Why Was LES-PAC Organized?

To meet an unmet need - providing the engineering profession with an opportunity to assume a more active and effective role in the election of State public officials. LES is prohibited by law from providing financial assistance to candidates for public office.

Is LES-PAC Affiliated With Any Political Party?

No. It is not bound by party affiliation. The program and platform of the individual candidate determines who LES-PAC supports, *not* the candidate's party affiliation.

Is LES-PAC a Permanent Organization?

YES. Engineers must have a well-planned progressive and consistent program of political expression, carried on vigorously year in and year out. Coordinated, continued effort on a permanent basis is imperative.

Who Directs LES-PAC Activities?

LES-PAC's activities are directed by an eight-member board of trustees composed of professional engineers. Six are elected by the members of LES-PAC. The other two are ex-Officio members, one being the LES legislative committee chairman and the other a member of the LES Board of Direction.

How Will LES-PAC Use Its Financial Resources to the Best Effect?

Financial contributions will be made to selected candidates for state office. Selection of worthy candidates will be based upon thorough and reliable analysis and realistic political appraisal by the trustees.

Why Would I Contribute to LES-PAC and not Directly to the Candidate?

Ideally, engineers would do both. However, in a practical sense, contributions for LES-PAC to a candidate for State office are interpreted as "Engineering" support. Political action of this kind is later translated into improved legislative action by LES. Contributions from individuals are generally considered to be just that - a friend helping a friend - and have less legislative impact in the future.

How Can I Become a Member of LES-PAC?

Complete the attached membership contribution form, attach your check - made out to LES-PAC - and mail today. Remember, annual contributors of $25 or more are eligible to vote for trustees.

LES-PAC Please make check payable to: **LES-PAC**
(Corporate checks cannot be written off as business expense)

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City _____ State _____ Zip _____

Occupation _____

Amount of Contribution $ _____

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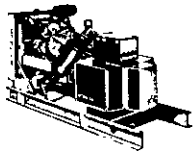

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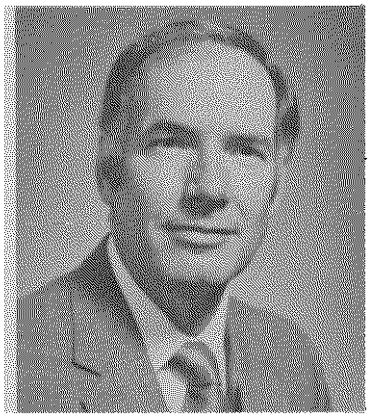

New Dean of Engineering, Louisiana Tech University

C. Ray Wimberly, P.E., Professor and Head of Department of Mechanical Engineering and Engineering Technology, Montana State University, has been appointed Dean of the College of Engineering at Louisiana Tech University, effective July 1, 1982.

Dr. Wimberly holds a BS degree in aeronautical engineering from Texas A&M University; MS mechanical engineering, University of Alabama; and a PhD in mechanical engineering from Texas A&M. He is a registered professional engineer in Texas and Mississippi, licensed private pilot, and a member of ASME, AIAA and ASEE. We expect his application for LES membership in the near future.

Previous employment of Dr. Wimberly in addition to Montana State includes professor of mechanical engineering, University of Mississippi; assistant professor of mechanical engineering at Virginia Military Institute; senior specialist LTV Aerospace Corporation; aerospace and project engineer, NASA, Marshall Space Flight Center; senior engineer, The Boeing Company; consultant for Computer Science Corporation, Battelle Memorial Institute; and a summer faculty fellow at NASA Manned Spacecraft Center.

Dr. Wimberly is married and has two children. He replaces Dr. Jack Thigpen at Tech, an outstanding engineer and member of the Louisiana Engineering Society since 1948. Except for periods of leave, Jack Thigpen's is service as a faculty member at Louisiana Tech has been continuous since 1947.

The shoes you fill at Tech, Dr. Wimberly, are large, but the Society wishes you success and happiness and we stand ready to assist you in any way we can.

Retirement Ends Colorful Engineering Career of 52 Years

Harry Dula, a member of the Louisiana Engineering Society since 1950, whose colorful engineering career began in the depths of the depression of 1929 with the North Carolina Highway Department, retired in June 1982 from Domingue, Szabo & Associates, Inc., Consulting Engineers of Lafayette.

Dula reports that his most traumatic engineering assignments were at Pearl Harbor within a year after it was bombed by the Japanese and in Munich, Germany immediately after the end of World War II. The devastation caused by the bombing of Pearl Harbor and Hickam Field was evident when he reported to Pearl Harbor in 1942. As a civilian engineer with the War Department in Munich, Germany, in 1946, he was in charge of demolishing underground ammunition facilities.

Dula holds a B.S. degree in civil engineering from the University of Kentucky and is a professional engineer and land surveyor in Louisiana. He is also a member of the American Waterworks Association, the National Defense Executive Reserve (Water), and the Society of Military Engineers.

He plans to remain in Lafayette at 748 Girard Park Drive, where he lives with his wife, the former Myrtice McNulty.

Wright and Lanier Elected to Engineers Selection Board



Richard P. Wright



Edward I. Lanier

Richard P. Wright, P.E., Baton Rouge, and Edward I. Lanier, P.E., Sulphur, have been elected to the Engineers Selection Board. Wright will serve from July 1, 1982 to June 30, 1983. Lanier will serve from January 1 to December 31, 1983.

Wright has a BS degree in civil engineering from LSU. He works as Right-of-Way and Office Engineer for the East Baton Rouge Department of Public Works. He replaces Blaise Carriere, P.E., New Orleans, on the Board.

Lanier has a BS general engineering degree from McNeese State University. He is secretary-treasurer and general manager of Bevel Corporation-Steel Fabrication, Sulphur. Lanier will replace Ken Perret, P.E., Baton Rouge, on the Board.

The two engineers elected by CEC/L on the Board were: James R. Gore, P.E., Metairie, July 1, 1982 to June 30, 1983 and Ronald K. Ferris, P.E., Baton Rouge, January 1 to December 31, 1983.

Consulting Engineers Council Plans Mexico Meeting

Consulting Engineers Council of Louisiana will be holding their 1983 Annual Meeting in CANCUN, MEXICO, on APRIL 22-25, 1983, at the HYATT HOTEL. We are arranging a charter flight originating in New Orleans, La. The Planning Committee and the Board of Governors have agreed to open the meeting up to all engineers and architects. Since this meeting is being held abroad, we need an early commitment from you. If you are interested in joining us in Cancun, please complete the form below and return it to the CEC/L Office, P.O. Box 1549, Baton Rouge, La. 70821, no later than August 31, 1982. A packet of information will be sent to you, including prices, schedules, and available tours.

(Tear out and return to: CEC/L
P.O. Box 1549
Baton Rouge, Louisiana 70821

YES! I am interested in going to Cancun, Mexico with CEC/L. Please send me more information.

NAME _____

FIRM _____

ADDRESS _____

_____

Continued from page 17

Gore Engineering, Inc.
Metairie, La. 70002
Ellis L. Jones, Inc.
New Iberia, La. 70560
Koger & Boxill, Inc.
Baton Rouge, La. 70809
Louisiana Surveys, Inc.
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McCain & Associates
Baton Rouge, La. 70806
McDermott, Inc.
New Orleans, La. 70112
E. L. Palmer, Incorporated
Many, La. 71449
Peddada, Gilo & Assocs.
Alexandria, La. 71301
S. S. Engineers, Inc.
New Orleans, La. 70119
Smith Engineering and Construction Co.,
Long Beach, MS. 39560
Smith & Rich, Consulting Engineers
Monroe, La. 71201
Delinquen firms may renew their certification by paying the required fee.

LAMON L. MOODY, JR.

Continued from page 5

Became Member of the Louisiana Engineering Society, June 30, 1957; served in all of the offices of PEPP, Baton Rouge Chapter; served as State Chairman of PEPP, 1969 - 70; served as State Director on LES Board 1970 - 72; served on many LES Committees and was Chairman of the State Ethics and Professional Conduct Committee, and has served on LES Legislative Committee and served as State Chairman for three years; received LES Charles M. Kerr Award for Public Relations in 1971; Received LES A. B. Paterson medal for 1981, Engineer in Management; Served as Second and First Vice-President of the LES and held offices on Chapter and State levels of the Louisiana Land Surveyors Association and was President in 1968 - 69, and served as State Chairman of Legislative Committee from 1970 to 1981; received LLSA Surveyor of the Year Award in 1975; received American Congress on Surveying and Mapping award for National Surveyor Excellency in 1972;

Was made a fellow of the President's Council of the American Institute of Management;

Held all offices of Greater Baker Association of Commerce and was President in 1977; served as Chairman of Baker Industrial Development Committee 1974 - 75, and awarded Outstanding Business Leader of the Year in 1975;

Member of Kiwanis Club (Director 1964 - 65);

Active in Boy Scouts and served as Commissioner of Istrouma Area Council of Boy Scouts of America;

Assisted in initiating and holding Free Enterprise Week in the Sixth Congressional District, and presently Chairman of the Free Enterpriser of the Year Award Committee;

Active in the Public Affairs Research Council of Louisiana, Inc., and presently serving on the Executive Committee; member of LABI; served on Committee on Energy and Natural Resources of the Louisiana Priorities for the Future in 1978; long standing active member of the Louisiana Good Roads and Transportation Association and member of the Executive Committee;

Member of the First Baptist Church of Baker; Thirty-Second Degree Mason and Knights Templar; Registered Democrat but votes Independent; has been listed for many years in Marquis Who's Who in the South and Southwest; and has been listed for several years in Who's Who in Engineering.

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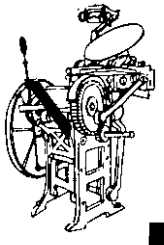
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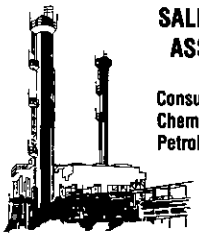

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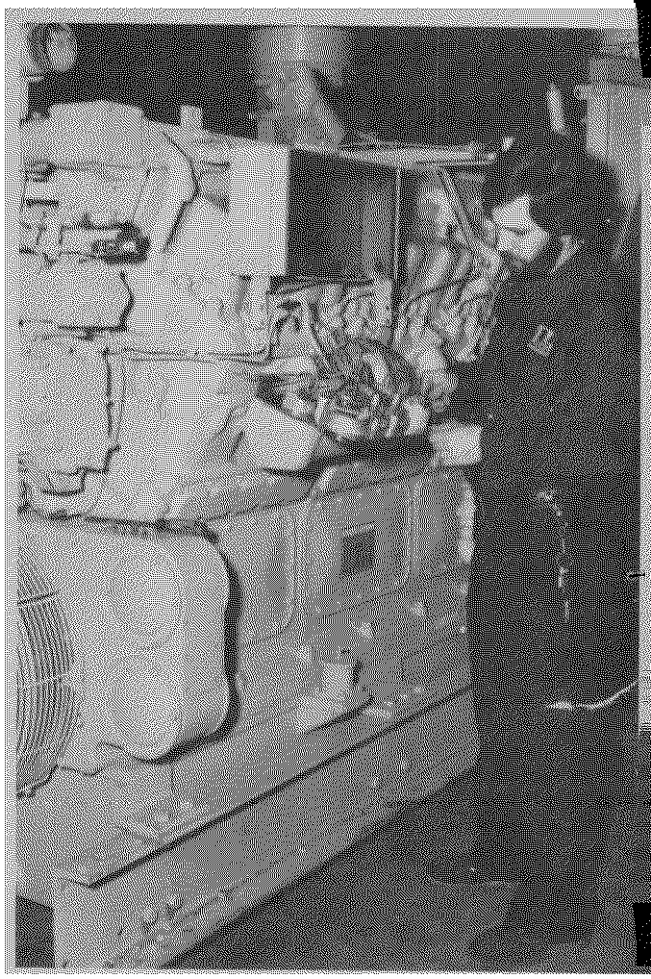

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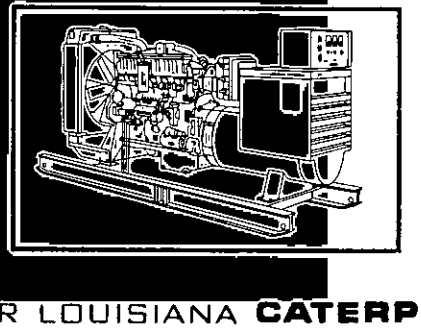

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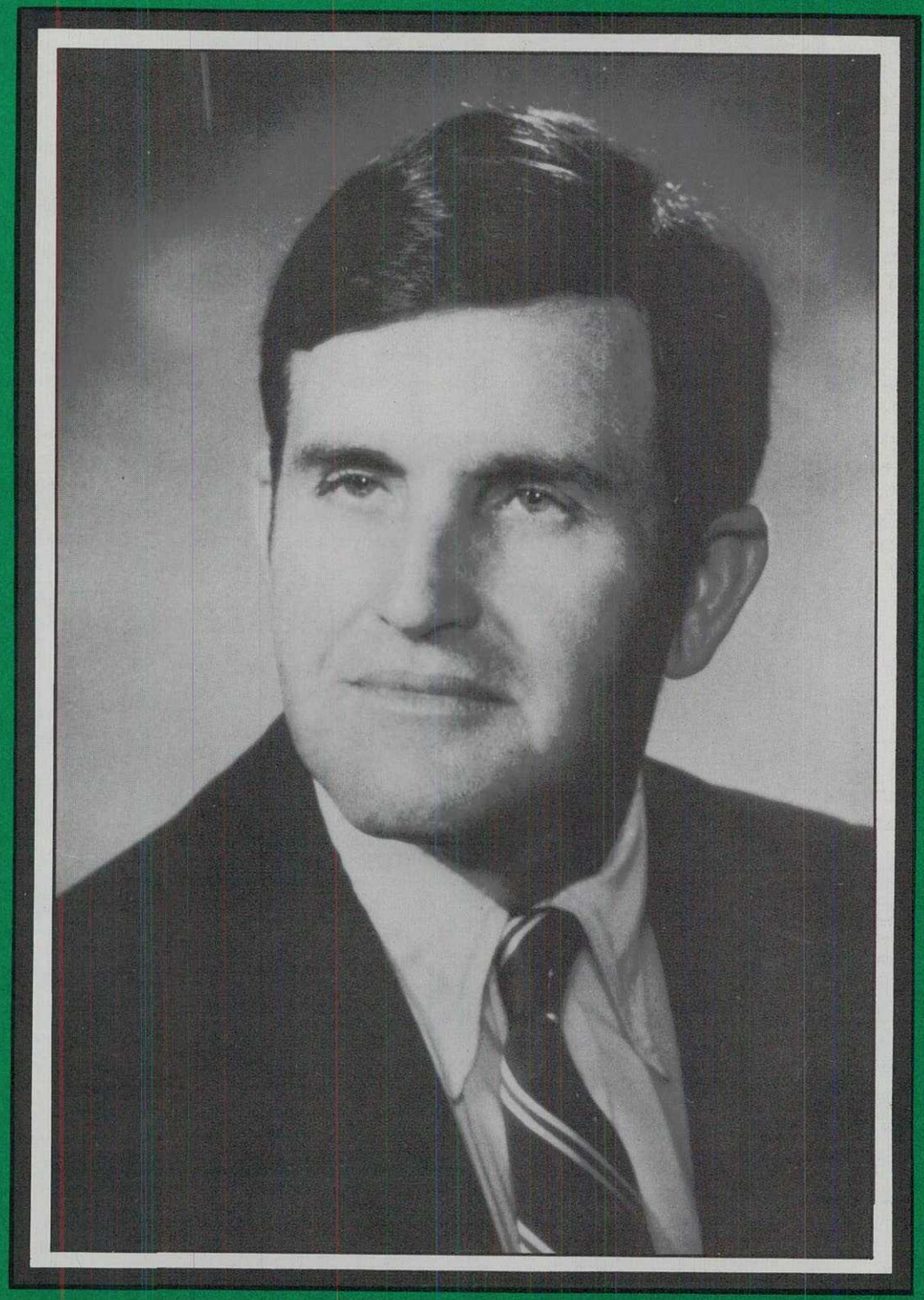

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Signed: _____

FUNCTIONAL DIVISION PREFERENCE
(Check One)

☐ Government ☐ Private Practice
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5. Telephone: Home _____ Office _____ Please Send All Mail To: Home _____ Office _____

6. REGISTRATION: PE ☐ LS ☐ EIT ☐ None ☐

State _____ Reg. No. _____ Branch _____

7. Are you now affiliated with NSPE Yes ☐ No ☐ If yes, what state? _____

8. If no, do you want to become a member of NSPE? Yes ☐ No ☐

9. Have you ever been a member of LES? Yes ☐ No ☐

10. Birth Date _____ Age _____ Spouse's First Name _____

11. Education _____
School Date Graduated Degree Obtained

12 Major Engineering Discipline _____

NOTE: If you are a PE, EIT or LS only one LES Member Sponsor is needed, otherwise please list the names of three LES members as your references. A brief professional experience record must be attached if you are not a PE, EIT or LS.

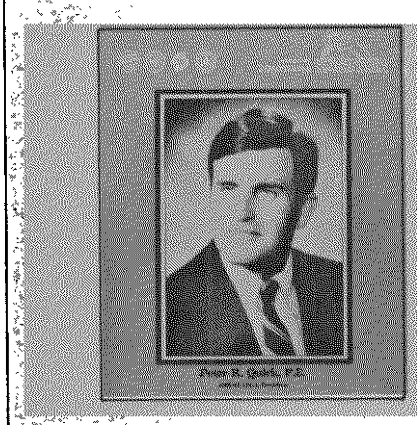
1. _____ 2. _____ 3. _____

October, 1982

LOUISIANA ENGINEER

The LOUISIANA ENGINEER is the official publication of the Louisiana Engineering Society and the journal of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The magazine is published in February, April, June, August, October and December. Subscription $1.00 per year for engineers registered in Louisiana and non-registered members of the Louisiana Engineering Society. One dollar of each LES member's annual dues is set aside for six issues of the LOUISIANA ENGINEER. Second class postage paid at Baton Rouge, La. The Louisiana Engineering Society and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors do not guarantee the accuracy of statements made or necessarily concur with opinions expressed in this publication. ISSN : 0024-6794

Address LES Communications and Change of Address Forms to LOUISIANA ENGINEERING SOCIETY, P. O. Box 2683, Baton Rouge, La. 70821. Telephone 504/344-4318; 1213 Nicholson Drive, Baton Rouge, La.



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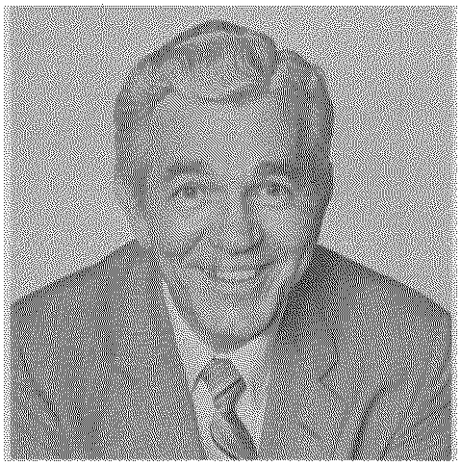


Lamon L. Moody, Jr., P.E.
LES President

For over nine years, our beloved Executive Director, R. C. "Doc" Spears, has given of himself over and beyond the call of duty to our engineering profession. And so has his lovely wife, Mary. Doc has made his mark on the engineering profession on the state and national levels through his successful contributions to the LES and the NSPE.

I first met Doc while serving on the LES Selection Committee for an Executive Director. The LES kinda took Doc away from the NSPE where he was working in Washington, D.C. I have always honored, admired and respected him for his capabilities and accomplishments in our Society work. I always think of him as an "old salt" (being a retired Commander from the U.S. Navy) with a little gruff exterior, but with a big, warm heart for his fellow man.

As of October 1, 1982, Doc will have attained retirement status, at his request, from full time service with the LES. However, he will be around for another year serving on a Consultant basis to the LES. Doc and Mary plan to spend a little more time together, see more of their children and relatives, spend a few months in Scotland next Spring, play a little more golf (yes, Mary too!) and just enjoy a life of leisure.

On behalf of all of our members, I wish to express our heartfelt appreciation and congratulations to Doc for a job well done, and wish him and Mary happiness.

During the LES Board of Direction's meeting on September 18, 1982, we officially accepted Doc's resignation from full time service, appointed him on a Consultant basis for the next year, and appointed Mrs. Leta Bueto as the Executive Director of the Society. Leta's appointment is effective October 1, 1982, seven years to the day that she became associated with the LES. Thus, Leta joins five other women in a rather exclusive group of Executive Directors of state engineering societies in the United States.

During the seven years Leta has been with us, we have seen her grow from an efficient secretary in the State Office to being Doc's right arm. She is very efficient, industrious and aggressive and knows our Society work from the inside out. She is a very gracious lady, wife and mother. Anyone who has ever called on her knows that she is extremely helpful and always willing to go the extra mile in promoting the engineering profession as well as our Society work.

On behalf of all of our members, I wish her every success and happiness in her duties as our Executive Director.

State Training and Planning Conference

We held our 26th Annual Chapter Officer's Training Conference and State Planning Conference in Alexandria on September 16 through 18, 1982. We were extremely pleased with the attendance at the Conference. We were also extremely pleased with the dedication and enthusiasm of those attending. We are thankful to the speakers, the chairmen and vice-chairmen of the many committees, the chairmen of the practice divisions, the committee members, the chapter presidents and officers, Doc Spears and Leta Bueto, and the members of the Alexandria Chapter for the hard work they did making the conference a highly successful one. The Alexandria Chapter and its Ladies Auxiliary were, as usual, most gracious in hosting the conference.

Our training and planning for the current Society year has been completed. We must now move forward with execution of the plans for individual member and Society growth and development. To our members and non-members I again appeal to you to get involved with your Society and let's move the engineering profession to a higher plane! I again urge you to attend your chapter meetings and do a little soul searching and decide for yourself whether you are contributing to the betterment of the profession you have chosen and love.

About Leta Green Bueto



Leta was born and reared in Franklin Parish, Louisiana, one of 11 children. She has been married 19 years to Carson Bueto, a Captain with East Baton Rouge Parish Sheriff's Department and they have a daughter, Debra, 14. She is a member of the North Acadian Church of God. Tennis is her hobby.

Leta began her professional career in 1962 handling confidential credit records and accounts receivable in the local office of a national chain store. In 1965 she was employed in the Baton Rouge office of a national consulting engineering firm as Secretary to the Manager, assisted the accountant in maintaining financial records including project costs control, and typed engineering specifications and general correspondence.

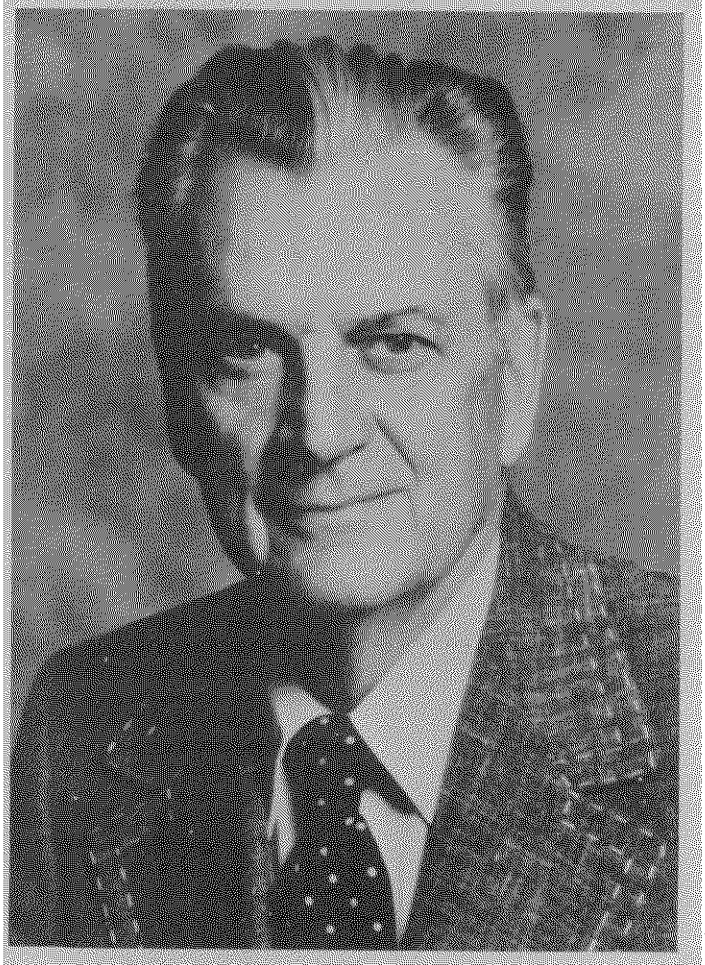
In 1971 Leta was employed as secretary/bookkeeper for the Consulting Engineers Council of Louisiana where she assisted the Executive Director in maintaining records for a membership of 80 consulting engineering firms.

Since October 1, 1975 she has been employed by the Louisiana Engineering Society as Office Manager and Assistant to the Executive Director in administering to the professional organization consisting of approximately 3,700 members, comprised of eight geographic chapters. During her years with the Louisiana Engineering Society, Leta has been involved in all aspects of the State Office, assisting the Executive Director in such areas as public relations, publications, legislative, planning state meetings of the membership and Board of Direction, maintenance of office activities, etc.

As Leta assumes the position of Executive Director on October 1, 1982 she will take over the duties and responsibilities of the position under the management of the Societys' Board of Direction in accordance with the Constitution and By-Laws.

We wish her every success in her new position with the Society.

R. C. "Doc" Spears Retires



Doc Spears is uneasy when talking about himself. For over nine years he has served the engineering profession in the state as Executive Director of the Louisiana Engineering Society. He has spoken before many groups—legislative committee hearings, state agencies, numerous local, state and regional meetings.

He takes his time recounting the accomplishments for which he is most proud during his tenure with LES. It's not that he can't remember them; he is just too modest.

Doc has a lot to be proud of, however. For one, he has seen the membership in LES increase from about 2,000 members nine years ago to the current level of 3,700 members. He has always felt that professional engineers should participate in and support their local, state and national organizations, and he has always preached that in his talks. And, you have to remember that, before coming to LES, Doc was staff director of the Professional Engineers in Industry section of the National Society of Professional Engineers in Washington.

He's quick to point out that many LES members have joined NSPE in the last nine years and that Louisiana now has two directors on the NSPE Board. With increased membership in National has come increased participation by Louisiana engineers at National meetings. Louisiana has won the NSPE membership contest three times during Doc's administration.

The creation of the Engineer Selection Board is another achievement Doc points to with pride. Too often in the past major engineering jobs in the state were awarded on the basis of political contributions to the administration in office, and a dozen or so engineering firms in the state controlled the largest state engineering projects. With the formation of the Engineer Selection Board, professional engineers now oversee the selection of firms on a more equitable basis and, now, many more firms have a chance to receive state work.

The formation of the Louisiana Engineering Foundation is a major accomplishment the Society has achieved during Doc's tenure. The LEF was incorporated in 1978 as a charitable, educational and scientific organization. Major objectives are the granting of scholarships and providing guidance to students in engineering, supporting programs for education, disseminating engineering information of benefit to the public, and establishing and maintaining an engineering center.

Doc feels the Engineering Education Study Committee, new underway, will have a wide-reaching impact on the state in future years. The report will make recommendations regarding the faculty shortages, salaries, and facilities and equipment of the engineering schools in the state.

The LES Political Action Committee will channel the resources of engineers to assume a more active and effective voice in the election of public officials.

There are numerous internal, administrative improvements Doc has directed. In some past years LES had to make short term loans to finish its fiscal year. Doc is pleased with the fact that the Society is on a more solid footing with its finances.

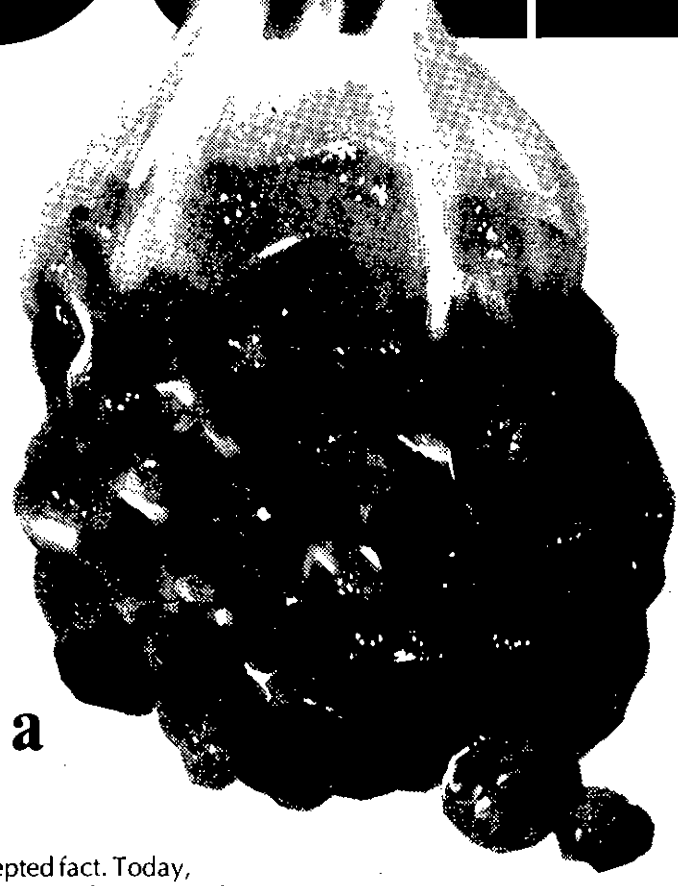
The installation of a computer in the State Office, he feels, will be a valuable help. All membership information, financial accounting, dues notices, etc. will be handled by this new equipment.

There are many more no-less impressive accomplishments during Doc's tenure:

- Passage of the revised 1980 Registration Law, updating and streamlining the law.
- Establishment of the first engineering membership directory.
- Publication of an orientation manual for members.
- Closer liaison with the Louisiana Association of Business and Industry.
- Formulated ideas with the La. Commerce & Industry Board to give engineering work in Louisiana to Louisiana engineers.
- Increased activity of National Engineers Week.
- Increased recognition by state agencies prior to selecting engineers for important government committees.

It's easy to see that LES members, as well as all professional engineers in Louisiana, have greatly benefitted from Doc Spears' dedication to his job. He will be missed, but not forgotten.

Coal



...burning brightly as a future energy source.

The importance of electricity to Americans is an accepted fact. Today, electricity represents 25% of all the energy used in the United States. And by the year 2000, it will represent almost 50% of all energy used. Clearly, electricity will become increasingly important in the years to come, and clearly we should not rely on a single source of fuel to provide it. That's why your investor-owned utility companies are sponsoring research and development programs to find better ways to generate electricity.

An important factor in any solution would be the use of coal. Unlike our oil and gas reserves, coal is in plentiful supply. In fact, many geologists say that at the present rate of consumption there is enough coal to last our country 500 years. Even though all energy costs are going up, environmentally clean nuclear power combined with coal will be the most reliable and economic means of providing electricity for many decades into the future. And your investor-owned electric utility companies think that's important in order to insure you of dependable electric service at a reasonable cost.

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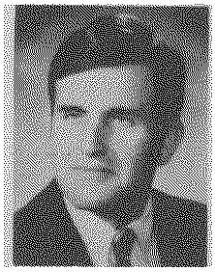

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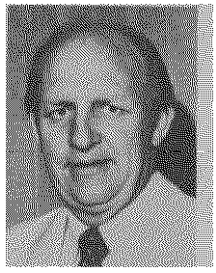

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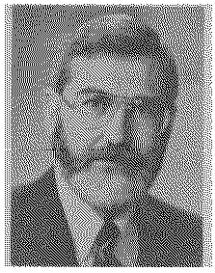

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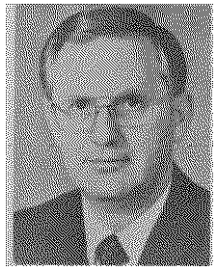

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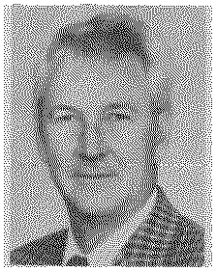

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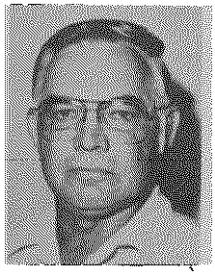

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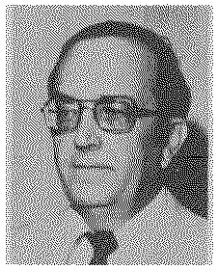

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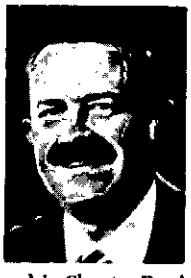

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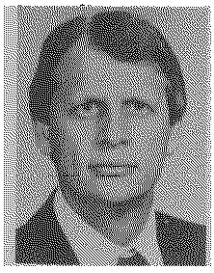

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PETER R. QUIRK, P.E. - A PROFILE

Peter R. Quirk, P.E., has been elected 1982 - 1983 President of the Consulting Engineers Council of Louisiana, Inc. Quirk is Executive Vice President of Walk, Haydel & Associates, Inc., a multi-discipline consulting engineering firm headquartered in New Orleans, Louisiana, with branch offices in Baton Rouge, Louisiana and Mobile, Alabama.

He received his BS in Electrical Engineering from Louisiana State University in 1959. Quirk holds membership in several professional organizations, including the National Society of Professional Engineers, Louisiana Engineering Society, the Instruments Society of America, and the Engineers Club of New Orleans. He served on the Engineers Club's Board of Directors from 1978 through 1981. He is a member of the Plimsoll Club and is Vice President of the Serra Club of New Orleans. He served as Section Chairman for the 1979 - 1980 United Way campaign.

Quirk is married to the former Marilyn Montalbano and they have six children.

CEC/L Looks at Rule 1

Consulting Engineers Council of Louisiana sent a letter recently to the Governor, Lieutenant Governor and each member of the Louisiana Board of Commerce & Industry expressing the Council's displeasure with the progress being made by that Board in the enforcement of Rule 1. For those of you who may not know exactly what Rule 1 says, it is printed verbatim below. Incidentally, you will note that the words "architects" and "engineers" have been included in the text of the rule. This is the result of a CEC/L request to the Commerce & Industry Board to specifically include these two groups of professionals. Here is the rule:

RULE 1. Use of Louisiana Contractors, Labor and Supplies

The Board of Commerce and Industry requires manufacturers and their contractors to give preference and priority to Louisiana manufacturers and, in the absence of Louisiana manufacturers, to Louisiana suppliers, contractors, **architects, engineers,** and labor, except where not reasonably possible to do so without added expense or substantial inconvenience or sacrifice in operational efficiency or the absence of expertise in the particular industry or field of competency involved. In considering applications for tax exemption, special attention will be given to those applicants agreeing to use, purchase and contract for machinery, supplies and equipment manufactured in Louisiana, or, in the absence of Louisiana manufacturers, sold by Louisiana residents, and to the use of Louisiana contractors, **architects, engineers,** and labor in the construction and operation of proposed tax exempt facilities. It is a legal and moral obligation of the manufacturers receiving exemptions to favor Louisiana manufacturers, suppliers, contractors, **architects, engineers,** and labor, all other factors being equal.

CEC/L has long been aware that the majority of engineering work required in connection with new plant facilities, for which tax exemptions are given, continues to go to out-of-state firms. However, only a small amount of the work going to out-of-state firms is of a type for which no expertise exists in Louisiana.

Louisiana engineering firms continue to not be given even the opportunity to submit proposals or to be otherwise seriously considered by plant owners in connection with many large capital programs.

CEC/L feels that the language of Rule 1 is explicit in that it requires "preference and priority" be given to Louisiana firms if tax exemptions are to be expected.

Until the Commerce & Industry Board actually denies the tax exemptions to some of those not soliciting Louisiana engineering firms, then these plant owning companies really have no incentive to develop the use of Louisiana engineering services.

The letter written to the Commerce & Industry Board was, in effect, an invitation to meet with the Board, either as a group or individually, to discuss this problem. CEC/L has had responses from some of the Board members already. One member will suggest to C & I Board chairman, Jimmy Fitzmorris, that he appoint a committee for the express purpose of determining whether or not Rule 1 could be made more effective, either through change of terminology, or method of enforcement, or through some other means. Chairman Fitzmorris has called CEC/L expressing a desire to meet with a delegation of CEC/L members to discuss the matter. A meeting has been set for a CEC/L group to meet with Lieutenant Governor Bobby Freeman. We will keep you informed as progress is made.

In a related matter, CEC/L requested Senator Ken Osterberger, Baton Rouge, to introduce a Senate Concurrent Resolution (which was numbered SCR 97 when it was introduced) during the latter part of this past regular session of the Legislature. SCR 97 directs all agencies of state government to contract for professional services with firms within the state, except when such services cannot reasonably be performed with the state. The resolution successfully passed through the Senate and the House, was signed by the Governor, and is now in effect. It is printed here for your information.

Regular Session, 1982

SENATE CONCURRENT RESOLUTION NO. 97, BY MR. OSTERBERGER

A CONCURRENT RESOLUTION

To direct all agencies of state government to contract for professional services with firms within the state, except when such services cannot reasonably be performed within the state.

WHEREAS, it is recognized that the economy of the state of Louisiana is enhanced when money is spent for labor or materials within the state; and

WHEREAS, the legislature has in the past recognized this fact by legislation; and

WHEREAS, a large number of contracts for consulting services are made with out-of-state firms for professional services which could be provided by in-state consultants.

THEREFORE, BE IT RESOLVED by the Senate of the Legislature of Louisiana, the House of Representatives thereof concurring, that henceforth, all agencies of state government shall contract for professional services with firms which will perform work within the state, except when such services cannot reasonably be performed within the state, in which case the administrator selecting such out-of-state contractor shall certify in writing that to the best of his knowledge no consultant within the state can render such specialized services. Provided however that this resolution shall not apply to professional academic program review in higher education.

BE IT FURTHER RESOLVED that a copy of this Resolution be transmitted to the head of each department of state government.

SIGNED

Consulting Engineers Council of Louisiana will be holding their 1983 Annual Meeting in CANCUN, MEXICO, on APRIL 22-25, 1983, at the HYATT HOTEL. We are arranging a charter flight originating in New Orleans, La. The Planning Committee and the Board of Governors have agreed to open the meeting up to all engineers and architects. Since this meeting is being held abroad, we need an early commitment from you. If you are interested in joining us in Cancun, please complete the form below and return it to the CEC/L Office, P.O. Box 1549, Baton Rouge, La. 70821, no later than October 31, 1982. A packet of information will be sent to you, including prices, schedules, and available tours.

(Tear out and return to: CEC/L, P.O. Box 1549, Baton Rouge, Louisiana 70821

YES! I am interested in going to Cancun, Mexico with CEC/L. Please send me more information.

NAME _____

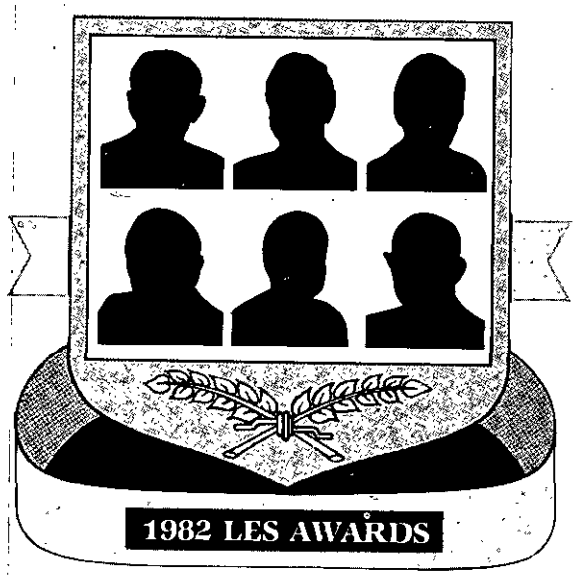
FIRM _____

ADDRESS _____

LES AWARDS PROGRAM

Jerrel J. Freeman, P.E., Chairman
Honors and Awards Committee

Recognition of fellow engineers has always been an important program of the Louisiana Engineering Society. It is the Society's feeling that honors and awards should be given deserving members so that public recognition of their attainments will inspire others.



The Society has six basic awards:

- The Andrew M. Lockett medal for Civic Activities
- The A. B. Paterson Medal for an Engineer in Management
- The Charles M. Kerr Public Relations Award
- The James M. Todd Technological Accomplishment Medal
- The F. Hugh Coughlin Young Engineer Award
- The Leo M. Odom Professional Service Award

Nominations for recipients of the six basic awards may be made by:

- Any elected officer of the State Society or one of the Chapters.
- By the Board of Direction of the Society.
- By the Executive Committee or equivalent body of the Chapter.
- By three or more members of the Society.
- By the individual Chapter Honors and Awards Committee.

Nominations may be submitted to a member of the Honors and Awards Committee, or to the Honors and Awards Committee in care of the State Office, no later than December 1, 1982. Nominations for the awards must be submitted on the appropriate form. These forms were delivered or mailed to each Chapter on September 17. The nomination forms should be supported by:

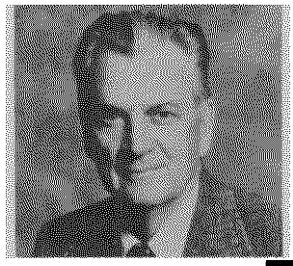
1. A full statement of the formal academic training, experience, progress, and notable technical or engineering contributions made by the nominee.
2. A statement of the basic reasons for submitting the nomination, and for believing that the nominee is eligible for the honor.
3. Such other information and references as may be of assistance to the Board of Direction in considering and acting upon the case.
4. It is essential that such documentation carry the present title and company connection of the nominee, and set forth clearly and concisely why he should be named for the award recommended.
5. A photograph of the nominee.

It is time for the Chapters to screen and select worthy candidates. Nominations for the awards must be in the hands of the Executive Director by December 1, 1982.

Awards will be presented during the Society's spring meeting on April 8, 1983 in Lake Charles.

POTPOURRI

R. C. "Doc" Spears
Executive Director
Louisiana Engineering Society



Au Revoir, Adios, Sayonara

This October issue is my last as editor of Potpourri and as executive director of the Louisiana Engineering Society. I would be remiss if I did not thank the readers of the magazine for their comments both approving and critical over the past nine years. It is with mixed emotions that I leave LES. It has been an enjoyable experience and I consider it a rare privilege to have worked with the wonderful engineers in Louisiana. My sincere thanks and "Godspeed" always.

My replacement, Mrs. Leta Bueto, is experienced and well qualified to guide the Society and I request that you support her as well as you have supported me.

LES Members on 1982-83 NSPE Committees

Waldemar S. Nelson, P.E., New Orleans, is chairman of the Management Information Committee and alternate on the International Affairs Council of the National Society of Professional Engineers.

Art Defraites, Jr., P.E., Houma, is a member of the Committee on Federal Procurement of A/E Services and past chairman of NSPE-PEPP.

E. E. "Buddy" Moncla, P.E., Monroe, is a member of the National Construction Industry Council.

David Edgar, P.E., Monroe, is vice chairman Southwestern Region of NSPE-PEC.

Hurstell Honored

Malcolm R. Hurstell, P.E., vice president of engineering and production, NOPSI, was presented the Edward R. Freitag Award from the New Orleans Section of the Institute of Electronics and Electrical Engineers. The award was presented to Hurstell in recognition of his outstanding service to the Section as well as his many technical, professional and community service achievements.

Hurstell has been a member of the Louisiana Engineering Society since 1950. He was president of LES in 1975-76 and recipient of the LES A. B. Paterson Award for an Engineer in Management in 1980.

ASCE Sets Major Convention in Louisiana

Some 3,000 civil engineers, the largest gathering of the year for these engineers, will be on hand to learn from the top experts in their discipline at the American Society of Civil Engineers annual convention at the Hyatt Regency Hotel, New Orleans, October 25-29, 1982. Also featured will be "Structures 82, Congress and Exposition," a top structural engineering conference of the year.

The general convention will feature well over 400 presentations in more than 100 sessions on virtually all aspects of civil engineering, from hydraulics, water resources and mechanics, to cold regions engineering, aerospace and surveying and mapping.

Other sessions will cover transportation, urban planning and development, research, computer applications, energy, environment and geotechnical engineering. The committee on Improvement and Placement of Soils will hold a session on Evaluation of Deep Compaction. The participants will be international experts on the subject. This should be a very good and informative session for those Louisiana engineers who are involved in the design and construction of structures on and with soft soils.

Contact ASCE, 345 E. 47th Street, New York, N.Y. 10017 for full details.

Dalton Woods, P.E. Appointed to LSU Board

Governor Treen has appointed oil and gas producer Dalton Woods of Shreveport to the LSU Board of Supervisors. Woods earned his bachelor's degree in petroleum engineering and his master's degree in geology from LSU.

He is a member of the LSU Foundation, past chairman of the tax committee of the Independent Petroleum Association of America and a registered Professional Engineer in Louisiana.

Andy Craig, Shreveport chapter membership chairman, take note and recruit Mr. Woods.

Symposium Announcement

A symposium on Biological and Chemical Removal of Sulfur and Trace Elements in Coal and Lignite will be held November 11-12, 1982, at Louisiana Tech University, Ruston, Louisiana. For information contact: Dr. Joseph B. Fernandes, Chemical Engineering Department, P. O. Box 10348, Tech Station, Ruston, Louisiana, 71272. (318-257-4727).

NSPE Scholarships

The NSPE Education Foundation will award engineering scholarships and grants worth more than $354,000 in 1983. Scholarships and grants range from $1,000 for one year to four-year full tuition scholarships in excess of $20,000.

Each chapter of LES will be providing applications to high schools in their areas. For complete information contact Paul Hale, P.E., chairman LES Scholarship Committee, P.O. Box 10348, Tech Station, Ruston 71272 or the LES State Office.

New Position for Kazmann

Professor Raphael G. Kazmann, P.E., of the Department of Civil Engineering at LSU, Baton Rouge has taken early retirement and accepted the position of senior consultant with Ken E. Davis Associates, Baton Rouge and Houston.

Kazmann has been a member of the Louisiana Engineering Society since 1964. He is registered as a professional engineer in five states. In his new position, he will provide supervision and assistance in the areas of environmental monitoring effects of deep well disposal, the storage of fresh water in saline aquifers, and the development of industrial and municipal ground-water supplies.

Energy Storage for Energy Management

The British Hydromechanics Research Association Fluid Engineering will hold its second international conference on Energy Storage, May 24-26, 1983 at the Stratford-Upon-Avon Hilton, England. Offers of papers are invited for the meeting, which will take as its theme "Energy Storage for Energy Management."

For details contact: Conference Organizer, 2nd Energy Storage, BHRA Fluid Engineering, Cranfield, Bedford, MK43, OAJ, England.

LES 26th Training Conference A Success

The 26th Annual Chapter Officer's Training and State Planning Conference was held September 16-18, 1982 at the Sheraton Inn, Alexandria, and was attended by 91 engineers and 34 ladies. Sixty-nine engineers and guests attended the Thursday evening early bird cocktails and dinner at the Alexandria Golf and Country Club.

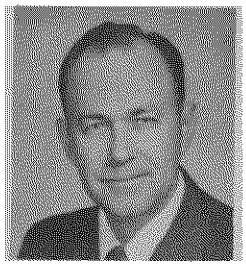
The Friday morning session was conducted by LES President Lamon L. Moody, P.E. Each activity chairman reported on aspects of his area to the new officers and committee members: Legislative Activity, D. Lamar Oliver, III, P.E.; LES Political Action, Curtis Dyle, P.E.; State Board of Registration, Paul Landry, P.E.; Meetings and Programs, James W. Reeves, P.E.; Practice Divisions, James S. Janssen, P.E.; and the Louisiana Engineering Foundation, Vince Forte, P.E.

On Friday morning the ladies were entertained with a Mary Kay Cosmetics demonstration by Eleanor Perret at the hotel. Then 42 ladies carpooled to Cheneyville and toured the Walnut Grove Plantation with lunch at Daddy Sams.

Eighty-eight engineers and guests attended a luncheon Friday and enjoyed a talk on

Continued on page 19

NÔTRE MÉTIER



Paul L. Landry, P.E., Executive Secretary, Louisiana State Board of Registration for Professional Engineers & Land Surveyors.

Technology Graduates

The Statutes and Rules of the Board have provisions for granting Professional Engineers registration to related technology graduates. However, related technology graduates cannot be certified as an Engineer-In-Training. To be granted PE registration, a related technology graduate must: (1) be a graduate of an ABET-approved engineering-related technology program, (2) have a minimum of eight (8) years of engineering experience, acceptable to the Board, (3) be of good character, etc. and, (4) have taken and passed both the fundamentals of engineering examination and the principles and practices of engineering examination in a branch of engineering approved by the Board.

At the present time there are only two Bachelor of Science Engineering Related Technology programs offered in the State of Louisiana which qualify. These are Construction Engineering Technology and Electrical Engineering Technology programs offered by Louisiana Tech University, Ruston, Louisiana. The Board will not favorably consider PE registration of graduates from other related technology programs offered in the State of Louisiana.

Annual Renewal Fees

Individual registrants will receive renewal notices in late October or early November of this year. Renewal notices are mailed to the registrants' last known address. Please remit your renewal fee as soon as you receive your notice. This will help the Board office. You will note that our cash flow has been negative over the past two years. A recent change in the statutes which permits an increase in fees will improve that situation. Your understanding and cooperation with the Board is appreciated.

Corporations

Some of the firms listed below as recently registered firms may have been registrants of the Board as Engineering Firms and failed to appreciate the fact that if they were providing professional land surveying services, they should also qualify the firms with the Board as such, or vice versa.

A firm offering to provide or providing both engineering and land surveying services must be a registrant of the Board as both an Engineering and Land Surveying Firm.

RECENTLY REGISTERED FIRMS

Associated Engineering Consultants, Inc. LS
P. O. Box 14084
Baton Rouge, La. 70898

BBC Engineering, Inc. LS
9435 Mansfield Rd.
Shreveport, La. 71118

Barnard & Thomas Engineering, Inc. LS
P. O. Box 64853
Baton Rouge, La. 70896

Blass Chilcote Carter Lanford and Wilcox E
P. O. Box 3019
Little Rock, AR. 72203

Boyle Engineering Corporation E
1501 Quail St.
Newport Beach, CA. 92660

Bradley-Miremont and Associates E
855 North Blvd.
Baton Rouge, La. 70802

Broadmoor Corporation LS
P. O. Box 8791
Metairie, La. 70011-8791

Bruce Engineering and Construction Services E
P. O. Box 31209
Lafayette, La. 70503

Burk and Associates, Inc. LS
4176 Canal St.
New Orleans, La. 70119

Aubrey G. Burke & Associates, Inc. LS
307 Pere Marquette Bldg.
150 Baronne St.
New Orleans, La. 70112

C & S Consultants, Inc. E & LS
1001 Howard Ave.
33rd Floor
New Orleans, La. 70113

C & S Engineering & Surveying, Inc. E & LS
P. O. Box 8124
Metairie, La. 70011

Chemical Engineering Associates, Inc. E
9350 W. Jamica Dr.
Baton Rouge, La. 70815

Communications Engineering Company E
438 UCC Tower at Exchange Park
Dallas, TX. 75235

Compressor Engineering and Rental, Inc. E
2206 Engineers Rd.
Belle Chasse, La. 70037

Continental Page Engineers, Inc. E
801 Follin Ln.
Vienna, VA. 22180

DeLaune - Spangler Engineering, Inc. E
1406 South Range Ave.
Suite 3
Denham Springs, La. 70726

E M M Consultants, Inc. E
17845 Coffee Rd.
Baton Rouge, La. 70816

Energy Ventures Analysis, Inc. E
1111 North 19th St.
Arlington, VA. 22209

Engineering Plus, Inc. E
17332 Planchet Rd.
Greenwell Springs, La. 70739

Engineering Service LS
A Division of M & G Enterprises, Inc.
P. O. Box 4632
Jackson, MS. 39216

Engineering Services and Planning, Inc. E & LS
437 Woodcliff Dr.
Baton Rouge, La. 70815

Environmental Science and Engineering, Inc. E
P. O. Box ESE
Gainesville, FL. 32602

Espey, Huston & Associates, Inc. LS
916 Capital of Texas Highway South
Austin, TX 78746

Evans & Evans LS
320 Texas St.
Shreveport, La. 71101

H. V. Farrar, Incorporated E & LS
P. O. Box 30729
Lafayette, La. 70503

C. H. Fenstermaker & Associates E
P. O. Box 52106
Lafayette, La. 70505

Fenstermaker Oceanographic Consultants, Inc. LS
P. O. Box 52106
Lafayette, La. 70505

Ferris and Associates Engineering, Inc. LS
1651 Lobdell Ave.
Suite B-101
Baton Rouge, La. 70806

The Frantz Co. E
The Frantz Bldg.
10835 Rockley Rd.
Houston, TX. 77099

Furlow, Inc. E
P. O. Box 1291
Tulsa, OK. 74101

G.R.W. Engineers of Louisiana, Inc. LS
604 Kinloch St.
Winnsboro, La. 71295

Gannett Fleming Environmental Engineers, Inc. E
P. O. Box 1963
Harrisburg, PA. 17105

Edward T. Gates, Consulting Engineers, Inc. E
3721 Albemarle Dr.
Lake Charles, La. 70605

Gill Engineering, Inc. E
4512 Ithaca St.
Metairie, La. 70002

Golden Engineering, Inc. E
1100 Milam Bldg.
Suite 2000
Houston, TX. 77002

Gulf South Constructors and Engineers, Inc. E
P. O. Box 4463
Baton Rouge, La. 70821-4505

Hansen-Sloan Engineering, LTD. E
517 East 10th Ave.
Covington, La. 70433

Rixby J. Hardy & Assoc. Consult. Engrs., Inc. LS
3100 Blanchard Dr.
Chalmette, La. 70043

Howard Needles Tammen & Bergendoff LS
9200 Ward Pkwy.
Kansas City, MO. 64114

Industrial Health Engineering Associates, Inc. E
P. O. Box 9342
Minneapolis, MN. 55440

Industry Specialties Consultants, Inc. E
7121 Melpomene
Baker, La. 70714

Inter/Con Management Services, Inc. 144 W. Main St. New Iberia, La. 70560	E
Jayway, Inc. 3168 Murphy Dr. Baton Rouge, La. 70809	E
Kulkarni Consultants A Professional Corporation FNJ Bldg. Airline Hwy. Metairie, La. 70003	E
W. H. Linder & Associates, Inc. 3350 Ridgelake Dr. Suite 109 Metairie, La. 70002	E
J. G. Mackin & Associates 5201 Mitchelldale Suite A-1 Houston, TX. 77092	LS
CE Maguire, Inc. P. O. Drawer 5638 Alexandria, La. 71301	E
Marcon Engineering Associates, Inc. 6250 Westpark Dr. Suite 225 Houston, TX. 77057	E
Marsh Engineering, Inc. 901 Coolidge Blvd. Lafayette, La. 70505	E
Kelly J. McHugh & Assocs., Inc. 176 Live Oak St. Mandeville, La. 70448	E & LS
McLin-Ferris and Associates, Inc. P. O. Box 578 Livingston, La. 70754	LS
Mehlburger, Tanner, Renshaw & Associates, Inc. 201 South Izard Little Rock, AR. 72201	LS
MEL, Incorporated Suite D 2728 Wooddale Blvd. Baton Rouge, La. 70805	LS
Moore Engineering, Inc. 3216 Skyline Dr. Pineville, La. 71360	E
N-Y Associates, Inc. 2700 Lake Villa Dr. Metairie, La. 70002	LS
Nautilus Engineering & Construction, Inc. 13101 North West Freeway Suite 324 Houston, TX. 77040	E
Ocean Systems Engineering, Inc. 225 Monsanto St. Rt. 1 Luling, La. 70070	E
Odom Offshore Surveys, Inc. 8178 G.S.R.I. Ave. Baton Rouge, La. 70808	LS
Ohlsen-Mitchell, Inc. 508 Coolidge St. Jefferson, La. 70121	E
PLT Engineering, Inc. 1160 Dairy Ashford Suite 600 Houston, TX. 77079	E

LOUISIANA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS

STATEMENT OF RECEIPTS AND EXPENDITURES FOR THE YEAR ENDED JUNE 30, 1982

RECEIPTS	
Registrations of Professional Engineers and Land Surveyors	$ 26,290
Certification of Engineers in Training and Land Surveyors in Training	20,417
Temporary Permits	945
Renewal of Licenses of Professional Engineers and Land Surveyors	176,938
Renewal of Certification of Engineers in Training and Land Surveyors in Training	13,790
Registration of Corporations and Other Firms	8,525
Renewal of Licenses of Corporations and Other Firms	13,028
Penalties - Delinquent Licenses	3,409
Miscellaneous Receipts - Sale of Certificates, Compendia, Rosters, etc.	831
Interest:	
U.S. Treasury Notes and Bills	18,499
Interest Earned: - Savings and Loan Associations:	
Dixie-Federal Savings - Redi-Check Account	1,040
Central Savings & Loan Assn.	954
Total Receipts	**$284,666**
EXPENDITURES	
Per Diem to Board Members	$ 9,500
Expenses of Board Members	30,889
Technical Assistance - Examinations, Grading, etc.	7,403
Salaries - Executive Secretary and Administrative Assistant	49,890
Salaries - All Other	74,792
Data Processing Service	8,065
Retirement Fund Contributions	10,417
Attorney Fees and Expenses	20,765
Auditing and Accounting Fees	3,695
Insurance - Blanket Position Bond, Accident, Liability, Hospitalization, etc.	3,396
Fees - National Council of Engineering Examiners	1,285
Examination Papers - National Council of Engineering Examiners	29,226
Printing	19,920
Postage	18,848
Rent	16,080
Office Supplies, Rental and Maintenance of Equipment, etc., and Miscellaneous Expenses	10,913
NSF Checks	197
Telephone	4,239
Fees Refunded	321
Partial Cost of Publishing THE LOUISIANA ENGINEER	17,931
State Unemployment and F.I.C.A. Taxes	1,351
Equipment - IBM Typewriter	959
Total Expenditures	**$340,082**
EXCESS OF (EXPENDITURES) OVER RECEIPTS	**$(55,416)**

INDIVIDUAL
Renewal Notices will be mailed out SHORTLY
(Please pay promptly upon receipt)

Professional Engineer	20.00
Land Surveyor	20.00
Corporations	20.00
Engineer-in-Training	10.00
Land Surveyor-in-Training	10.00
Civil Engineer-Public Employee	20.00

*Renewal fees are due not later than December 31 for individual registrants and for corporations no later than June 30. Fees for delinquent are twice the normal amount the first six months delinquent and three times the normal fee thereafter.

EXAMINATION SCHEDULE

	SPRING Apr. 16, 1983 Apr. 14, 1984	FALL Oct. 29, 1983 Oct. 27, 1984
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practice of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical, & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

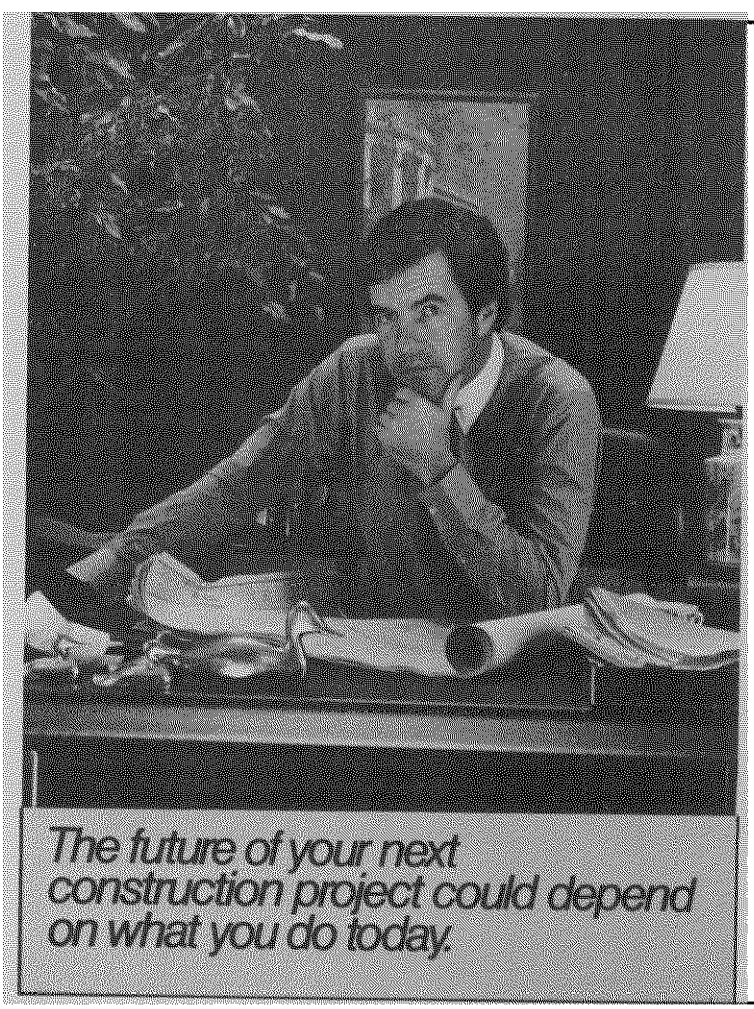
Apply at least 90 days prior to examination date.

Petroleum Engineers, Inc. P. O. Box 52588 Lafayette, La. 70505	E
Prentice and Records Enterprises, Inc. P. O. Box 53557 O.C.S. Lafayette, La. 70505	E
Quad-S Consultants, Inc. P. O. Box 14387 Baton Rouge, La. 70898-4387	E
Quality System Engineering, Inc. North Willow St. Lockport, La. 70374	E
R. M. I. Inc. P. O. Box 6071 Shreveport, La. 71106	E
RAMS Engineering, Inc. P. O. Box 14004 Baton Rouge, La. 70809-4004	E & LS
RHEA Corporation 684 Wylie Dr. Baton Rouge, La. 70808	E
Salmon & Associates, Inc. 626 Highlandia Dr. Baton Rouge, La. 70810	LS
Sam Z. Scandaliato & Associates, Inc. 7034 Read Ln. New Orleans, La. 70127	LS

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1982 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1982	1983
Nov. 23	Jan. 24 & 25
	Mar. 22
	May 24
	July 26
	Sept. 27
	Nov. 22



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(312) 565-2424

40 Wall Street
New York, NY 10005
(212) 344-1000

595 Market Street
San Francisco, CA 94105
(415) 495-3444

Shappert Engineering Company
Box 157
Belvidere, IL. 61008 E

Southern Professional Engineering, Inc.
126 West Pinewood Dr.
Slidell, La. 70458 E

C. L. Jack Stelly & Associates, Inc.
P. O. Box 53353
Lafayette, La. 70505 LS

Summerlin Associates, Inc.
1609 Broadway
Little Rock, AR. 72206 E & LS

Tex-A-Mation Engineering, Inc.
P. O. Box 1355
La Porte, TX. 77571 E

Tidelands Engineering & Development Corp.
Rt 6, Box 666
Mandeville, La. 70448 LS

Topographic Land Surveyors
409 Regency Tower
33 NW 5th St.
Oklahoma City, OK. 73102 LS

David Volkert & Associates, Inc.
3809 Moffat Rd.
Mobile, AL. 36618 LS

RECENTLY RENEWED FIRMS

Alpha Energy Conservation, Inc.
7202 Barringer Dr.
Baton Rouge, La. 70816 E

Robert B. Anderson, Consulting Engineers
432 N. Anthony St.
New Orleans, La. 70119 E

Applied Geomechanics, Inc.
P. O. Box 80619
Baton Rouge, La. 70898 E

BSL, Inc.
A Subsidiary of Broussard & Associates, Inc.
2231 Veterans Memorial Hwy.
Suite 216
Kenner, La. 70062 E

Barron, Heinberg & Brocato
Architects & Engineers
P. O. Box 1952
Alexandria, La. 71301 E

Frank Beaullieu III and Associates
721 West Congress St.
Lafayette, La. 70501 E

Broadmoor Corporation
P. O. Box 8791
Metairie, La. 70011-8791 E

Charles Collins & Assoc., Inc.
P. O. Box 51374
Lafayette, La. 70505 E

Electronic Engineers & Designers, Inc.
1157 Forest Oaks Dr.
Baton Rouge, La. 70815 E

Encon, Inc.
432 N. Anthony St.
New Orleans, La. 70119 E

Engineering Services & Planning, Inc.
437 Woodcliff Dr.
Baton Rouge, La. 70815 E

General Engineering & Construction, Inc.
P. O. Box 128
Scott, La. 70583 E

Hawkins Engineering, Inc.
P. O. Box 176
Ferriday, La. 71334 E

Carl Heck Engineers, Inc.
P. O. Box 70
Thibodaux, La. 70301 E

Ideal Engineering, Inc.
8005 Dunlap
Houston, TX. 77074 E

LeGardeur International, Inc.
P. O. Box 269
Belle Chasse, La. 70037 E

Louisiana Surveys, Inc.
1609 Butternut Ave.
Metairie, La. 70001 LS

Marrero, Couvillon and Associates, Inc.
Crawford Bldg., 440 North Foster Dr.
Baton Rouge, La. 70806 E

Russell A. Matherne, Inc.
P. O. Box 14117
Baton Rouge, La. 70898 E

MEL, Incorporated
Suite D
2728 Wooddale Blvd.
Baton Rouge, La. 70805 E

A. F. Meyer & Associates, Inc.
122 St. John St.
Luling, La. 70070 E

Salmon & Associates, Inc.
626 Highlandia Dr.
Baton Rouge, La. 70810 E

Southern Industrial Designers, Inc.
P. O. Box D
White Castle, La. 70788 E

Tiger Engineering, Inc.
P. O. Drawer J
Destrehan, La. 70047 E

Herbert G. Whyte Assoc., Inc.
530 Broadway
Gary, IN. 46402 E

Ned R. Wilson & Associates, Inc.
P. O. Box 307
Mandeville, La. 70448 LS

Zervigon Associates, Inc.
P. O. Box 4160
New Orleans, La. 70178 E

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In 15 years — assuming an inflation rate of only eight percent — you will need $3,125 to equal the current purchasing power of $1,000. Think about it: If your annual income is $50,000 now, you will need more than $150,000 *every year* just to maintain your present standard of living.

Resource Management believes that retirement planning should be an integral part of everyone's personal financial plan. Our Certified Financial Planners tailor pension and profit-sharing plans to meet individual needs, not to shoehorn clients into existing programs. We search out investment opportunities that make your hard-earned dollars work for you, instead of languishing in some account for others to invest. And, our investment strategies involve *no* life insurance.

If you are in the 50 percent tax bracket, let us show you how to turn tax dollars into working capital for your retirement. To receive a no-cost, no-obligation assessment of your financial planning needs, contact Resource Management today at 504/833-5378.

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Photovoltaics In Louisiana

Introduction

The analysis given in this paper is based on a similar study carried out by B. Hammond in reference 1 for the city of Phoenix, Arizona. The data presented here have been adjusted to the Louisiana environment.

The constant rising cost of fossil fuels creates an ever increasing need for man to find alternate energy sources. And the increasing concern with man's effect on the environment is having a significant effect on the choice of energy sources. The only universally abundant, pollution-free power source known, sunlight, is once again being examined by energy experts as a way of providing low-cost energy. The average energy which strikes the earth's surface in the New Orleans area is 18 W/sq. ft. (191 W/m^2). If one assumes a typical residential roof area of 2000 sq. ft. (187 m^2), 36,000 W would be received by this surface. This is equal to 315,360 kWh/yr, which is 12 times greater than the power required to operate a typical all-electric home in the New Orleans area (26,020 kWh/yr).

This "ideal" energy source creates two challenges for man. First, how do we economically capture and convert this energy to a more useful form of energy? Secondly, how can we store this energy for use during cloudy days and at night?

One approach to harvesting this energy is direct conversion of sunlight to electricity by use of silicon solar cells: photovoltaic - light (photo) used to produce electricity (voltaic). As the photovoltaic (PV) process improves and becomes more cost-effective, man will continue to evaluate its application for residential use.

Batteries are still the primary energy storage means. This is not likely to change in the next few years and will continue to be a significant cost factor.

System Description

In order to evaluate the feasibility of photovoltaic power for residential use in Louisiana, the authors have chosen an all-electric energy-conservative home as a model for determining the required load (7704 kWh/yr). There will be some losses in the solar system due to the inverter, dust on the cells, voltage drop in wiring and miscellaneous, which typically amounts to 25 percent of the load. Therefore the effective PV load is 9630 kWh/yr.

It is not recommended that photovoltaics be used to handle the full load requirement including the summer peak. This technique is quite wasteful because of the excess power at off-peak periods. The more practical approach, is to provide all power except the total summer peak. Solar power can be supplemented with other sources during this period. Other sources could be a gasoline generator or a simple connection to the utility power grid if available. It is important to carefully consider the source and availability of the backup source of energy because it will have a significant effect on system economics. The backup source will supply power during periods of darkness, overcast, and also peak loads.

A solar array with 300 modules (cells) at 24 watts each tilted 10 degrees above the horizontal would be capable of supplying the necessary power, other than the summer peak, for the above mentioned all-electric home in the New Orleans area. (See Figure 1)

Economics

In determining the cost of a PV system the following assumption will be used:

	1982	1992
Module Cost	$8 per peak watt	$0.50 per peak watt
Module Life	30 years	30 years

Constant dollars with 1982 as the base will be used. Also assume that modules can be supplied in a "shingle" fashion and that they fit between standard spacing of roof rafters. Cost of additional support structure will therefore be ignored.

Case 1 - Utility Grid as Backup

Assume that utility power is available at the residence. For the amount of power required by this system, New Orleans utility rates are approximately 6.5¢/kWh. The local utility company claims that

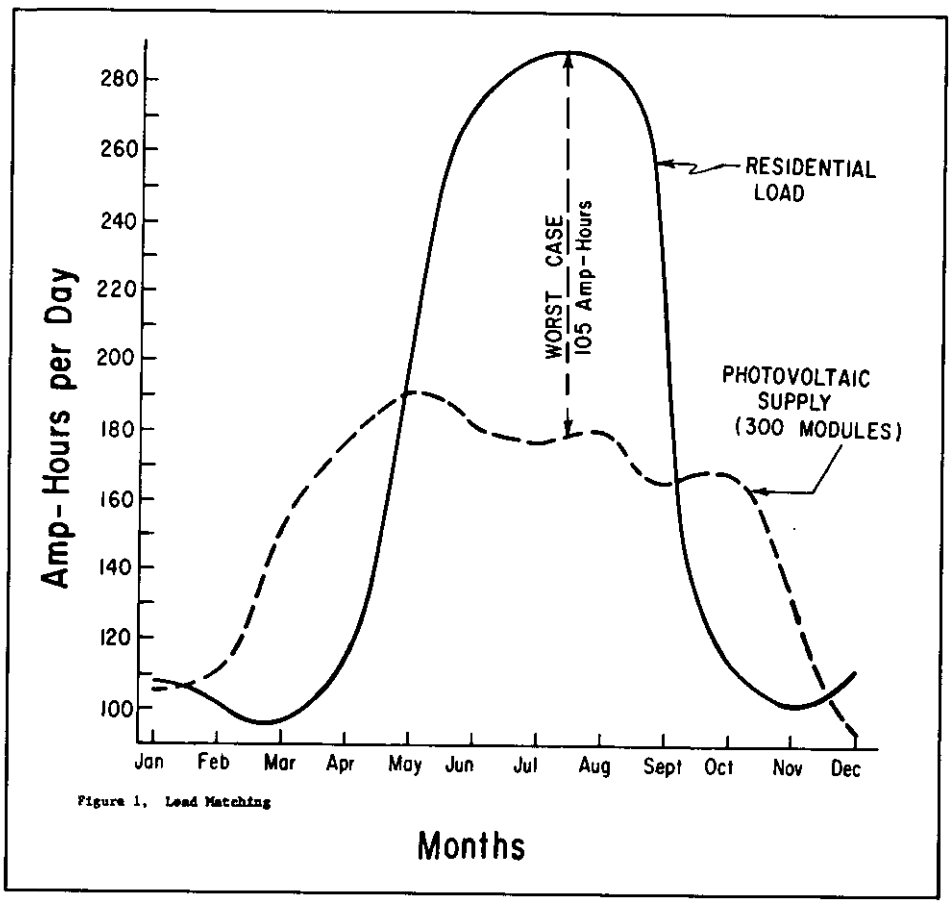


Figure 1, Load Matching

[1]Professor of Mechanical Engineering, University of New Orleans

[2]Mechanical Engineering Student, University of New Orleans

Edwin P. Russo, Ph.D., P.E.[1]
C. Ann Naland[2]

electric rates over the next 10 years will not increase faster than inflation. Using constant dollars, the 1992 rate will also be 6.5¢/kWh.

Of the 9630 kWh annual load, approximately 7932 kWh would be supplied by the PV array and 1698 kWh by the utility grid. PV costs are then:

	1982	1992
Modules (300 MOD x 24 W/Module) 7,200 W (peak)	$57,600	$3,600
Inverter (7 kVA)	5,000	1,400
Wiring	1,760	1,000
Total	$64,360	$6,000

Assuming a 30-yr. life, cost per kilowatt-hour is then 27¢ in 1982 and 2.5¢ in 1992. If interest is ignored on the $6,000 in 1992, PV at 50¢/Wp is more than competitive with utility power.

Case 2 - Gasoline Generator as Backup

The average cost to run utility power lines is $15,000/mi ($9,000/km). In cases where utility power is not available or cannot be installed at a reasonable cost, a gasoline generator is the next most economical power source. In addition to supplying peak loads during the summer, it will also supply power during extended periods of overcast days.

1982 Costs

Maximum power required from the generator is 105 amps-hours per day at 160 volts; i.e., this is the difference between the PV array output and the peak summer load (see Figure 1). This is equivalent to 702 watts average for 24 hours. A 1500 watt generator can be used in order to handle peak loads. A voltage of 160 has been chosen as a convenient number in order to use a transformerless inverter for efficient conversions to 120 V a-c. With this application, storage batteries will be used in order to integrate and store all available sun energy and provide a somewhat constant load for the generator drive. This will reduce the size of the generator required and reduce short "on" times. One day of battery storage will be adequate. Worst case requirements would be during the August peak when the system must supply 286 Ah/day. Thus, battery requirements are 286 Ah at 160 V, (45,760 Wh/day).

The generator will supply the same amount of power as the utility grid in Case 1, 1698 kWh/yr., or 1132 hours (1698 kWh/1.5 kW). Fuel consumption is 0.5 gallons per hour times 1132 hours or 566 gallons. At $1.20 per gallon, the cost is $799 for fuel. Maintenance and repairs on the generator are estimated at $100/yr. for a total operating cost of $899/yr.

Cost of the system is:

	1982 Initial Cost	Total Cost 30 yr.
Modules (7200 Wp)	$57,600	$ 57,600
Inverter (7 kVA)	5,000	5,000
Wiring	1,760	1,760
Batteries (45760 Wh)	2,150	6,450
Voltage Regulator	2,000	2,000
Generator (1.5 kW)	1,500	9,000
Generator Operating ($899/yr.)	—	26,970
Total	$70,010	$108,780

The foregoing technique assumes a constant generator operating expense based on 1982 cost. Obviously, this will result in reasonably accurate system costs only the first few years of operation.

Cost per kilowatt-hour is then $108,780/ (30) (9630), or 38¢kWh.

1992 Costs

Using the same system in 1992, but with modules at 50¢/Wp and gasoline at $1.50/gal, cost are:

	1992 Initial Cost	Total Cost 30 yr.
Modules (7200 Wp)	$ 3,600	$ 3,600
Inverter (7 kVA)	1,400	1,400
Wiring	1,000	1,000
Batteries (45760 Wh)	2,150	6,450
Voltage Regulator	2,000	2,000
Generator (1.5 kW)	1,500	9,000
Generator Operating ($949/yr.)	—	28,470
Total	$11,650	$51,920

Cost per kilowatt-hour is the $51,920/30 (9630), or 18¢/kWh.

Summary of Results

For ease of comparison, all systems are listed in the following table:

	Initial Cost		¢/kWh	
	1982	1992	1982	1992
Case 1 (Grid)	$64,360	$ 6,000	27¢	2.5¢
Case 2 (Generator)	$70,010	$11,650	38¢	18¢

Conclusions

When photovoltaics reach 50¢/Wp, they will become competitive with utility power - if utility power is available as a backup. Without utility backup, cost per kilowatt-hour is approximately three times the cost of grid power.

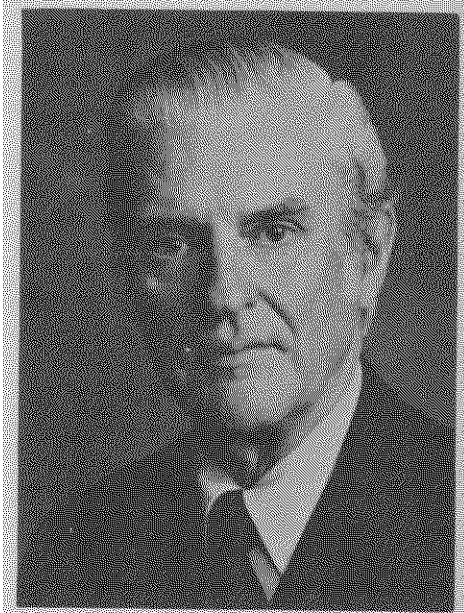
As the cost of modules decreases, the balance of system costs becomes very significant. In particular, voltage regulator, inverter, batteries and motor generator become a large percentage of the total. The inverter could be eliminated if d-c equipment were used. The use of d-c equipment, however, will result in higher maintenance costs than a-c equipment. Conventional batteries will continue to increase in price about 10 percent/yr. Possibly more economical means of storage will be available by 1992. If so, then the generator could be replaced with additional energy storage.

There were many assumptions made in the cost analysis. For example, utility rates will not increase faster than inflation during the next 10 years. At some point in time it will certainly increase at a faster rate. When this happens, PV will be even more competitive.

Interest rules are ignored as well as the 44% tax credits for energy conservation equipment.

Reference

[1] Hammond, B. "Solar Photovoltaic Power for Residential Use," *Mechanical Engineering*, p. 29-33, December, 1980.



John T. Roberts

John T. Roberts, a chemical engineer with Exxon Chemical Company, Baton Rouge, and a member of the Kiwanis Club of Audubon, Baton Rouge, was elected President of Kiwanis International on June 30, 1982 during the 67th Annual Convention of Kiwanis International in Minneapolis. He will assume the presidency on October 1.

Active in professional, civic and philanthropic affairs, Roberts is a member of the American Institute of Chemical Engineers, the National Society of Professional Engineers and the Louisiana Engineering Society. He is a Ruling Elder of the Presbyterian Church. He is a past chairman of Exxon's United Fund Drive; a Junior Achievement Advisor; president and treasurer of the Piedmont Club; a past chairman of the Tulane Educational Conference; and a member of the Public Affairs Research Council of Louisiana.

The Society extends its best wishes and congratulations to John T. Roberts.

IN MEMORIAM

Albert "Buddy" Switzer, P.E.

The Louisiana Engineering Society, the engineering profession and his many friends have suffered a great loss with the death on August 23, 1982 of Buddy Switzer.

He attended Louisiana State University in 1938-39 and 1942-43 where he received a B.S. degree in electrical engineering. He was a native of Pueblo, Colorado, a resident of Baton Rouge, and a Army Air Corp veteran of WWII.

Mr. Switzer was licensed as a professional engineer in 32 states. His professional career started as a design engineer with Barnard and Burk from 1945 to 1948. From 1948 to 1952, he was an equal partner in the consulting engineering firm of Porter, Barry and Switzer, Baton Rouge. In 1952 he formed his own firm, Albert Switzer and Associates, Inc.

He became a member of the Louisiana Engineering Society in 1965 and was a strong supporter of its programs.

The Society extends its deepest sympathy to his wife "Beb" and family.

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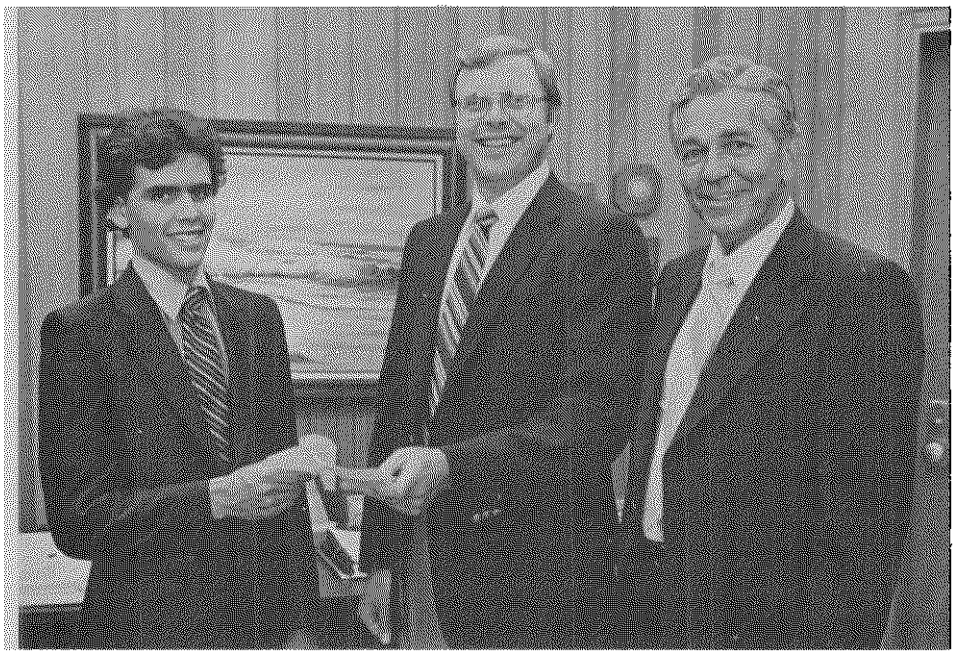
(See page 2)



Baton Rouge Student Wins LES Scholarship

On September 10, 1982, Richard Matula, P.E., Dean of Engineering LSU and Lamon L. Moody, Jr., P.E., President of the Louisiana Engineering Society, presented a $500 check to Kevin McClanahan who is the recipient of the 1982 LES $1,000 scholarship. The additional $500 will be presented to Kevin at the start of the second semester at LSU subject to his continuing engineering studies and grade point.

Kevin is the son of Mr. & Mrs. Wade I. McClanahan, Baton Rouge. He is a graduate of Catholic High, Baton Rouge and plans to become a chemical engineer.

POTPOURRI

Continued from page 11

Louisiana Legislature by John W. "Jock" Scott, state representative from the 26th District.

Committee and practice divisions meetings were held Friday afternoon where the new groups made plans for the new year.

One hundred nineteen engineers and guests enjoyed a delicious catered meal at the Farmers Market, Alexandria, on Friday evening. The cocktails were hosted by Louisiana Industries, Inc. Golf and tennis prizes were presented by Neil Klock, P.E., golf tournament chairman, and Garland Pennison, P.E., tennis tournament chairman, at the function. Twelve golfers and seven tennis players entered the competition held at the Alexandria Golf and Country Club. The golf winners: First low gross, R. C. Spears; 2nd low gross, Glynn Gautreau; low net, Billy Rentrop, P.E.; 2nd low net, Randall Abadie, P.E.; ladies first and second, Bonnie Gautreau and JoAnn Meyer. The tennis tournament winners were first place, Lee Campbell, P.E. and 2nd, Jim Bowie, P.E.

Forty-six engineers and guest attended the Saturady morning breakfast. Lamon L. Moody, P.E. presented the portable podium to Steve Gauthier, P.E., president of the Alexandria Chapter, who won the 1981-82 membership contest.

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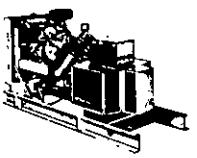

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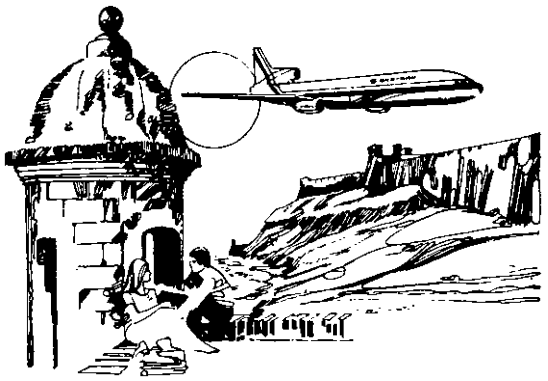

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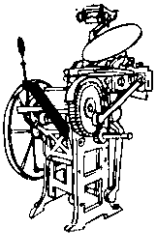

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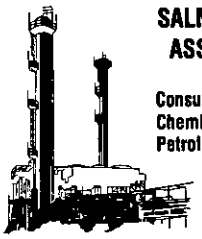

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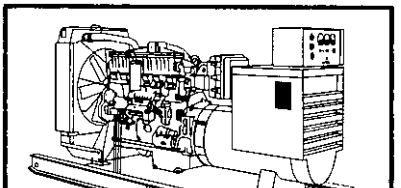

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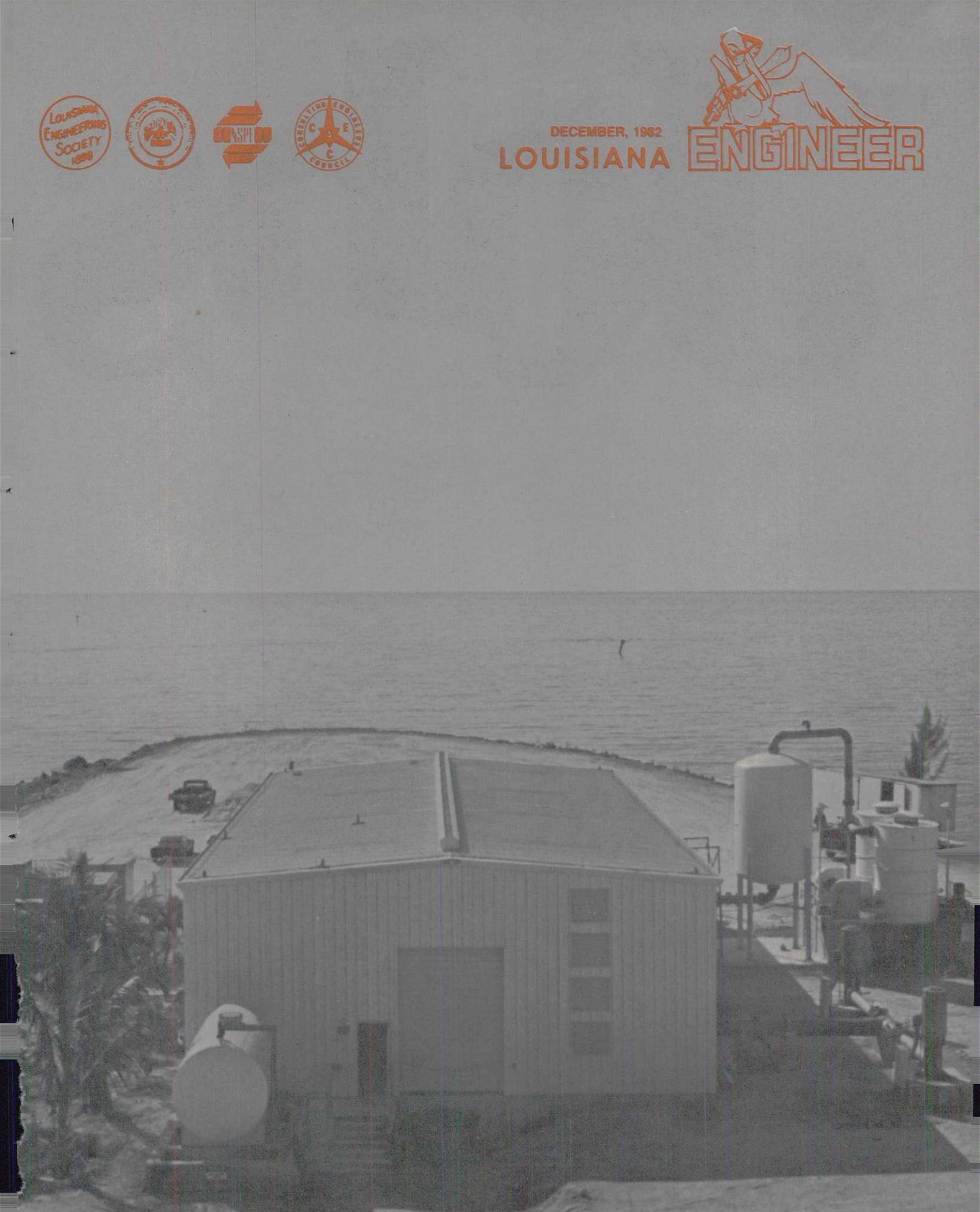

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Louisiana needs jobs and new industry can help provide them. That's why our teams of industrial specialists are regularly talking to prospects throughout the nation about new sites available for plant expansion and re-location. But new industry means more than just jobs for our citizens. It means helping present industries and services. It means improving our communities and building new ones. It means boosting our overall economy and helping our state grow and prosper through additional taxes.

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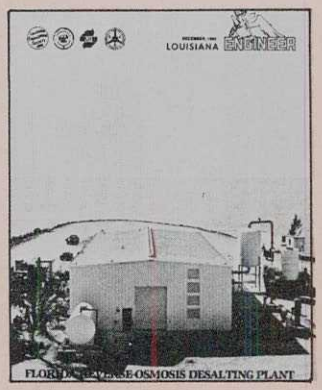
The LOUISIANA ENGINEER is the official publication of the Louisiana Engineering Society and the journal of the Louisiana State Board of Registration for Professional Engineers and Land Surveyors. The magazine is published in February, April, June, August, October and December. Subscription $1.00 per year for engineers registered in Louisiana and non-registered members of the Louisiana Engineering Society. One dollar of each LES member's annual dues is set aside for six issues of the LOUISIANA ENGINEER. Second class postage paid at Baton Rouge, La. The Louisiana Engineering Society and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors do not guarantee the accuracy of statements made or necessarily concur with opinions expressed in this publication. ISSN : 0024-6794

Address LES Communications and Change of Address Forms to LOUISIANA ENGINEERING SOCIETY, P. O. Box 2683, Baton Rouge, La. 70821. Telephone 504/344-4318; 1213 Nicholson Drive, Baton Rouge, La.



ABOUT THE COVER

The largest seawater reverse osmosis facility in the Western Hemisphere has been operating at Key West, Florida for two years. Our article on page 6 takes you inside that plant.

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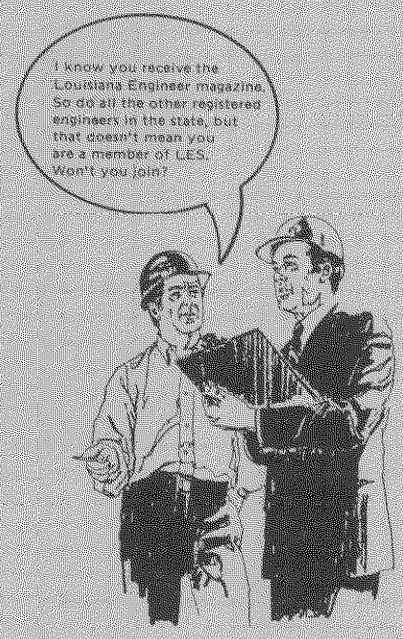
The Louisiana Engineering Society is composed of approximately 32% of the registered professional engineers and engineers-in-training living and working in Louisiana. The legislature asks us every year why LES claims it represents the engineering profession in Louisiana and why LES makes nominations to the Governor for many Boards and agencies in state government. Our best answer: LES has the most representation of any engineering organization in the state. No other organization comes close. While this is true, we would be a lot stronger if we could claim more than 50% of all engineers in the state as members. Why do so many of you who received the LOUISIANA ENGINEER fail to participate in your professional society?

Engineers have a responsibility to set standards of excellence for their profession and to make sure those standards are observed. LES and NSPE continually promote quality in engineering through attention to ethical practices.

LES is the only organization representing engineers of all disciplines in lobbying before the legislators and dealing with state agencies.



Sound initial education and ongoing professional growth are hallmarks of a profession. LES and NSPE promote both through scholarships, guidance, continuing education and professional development programs.

A professional work environment for employed engineers — this LES considers essential. The Society working closely with NSPE promotes adequate compensation for engineering talent and a work environment conducive to technological innovation through many programs.

Almost 3,700 engineers are already members of LES. They ask you to join with them to make LES even bigger and more successful in its operation. More members mean adequate finances and manpower to give LES the necessary tools to carry through its all-inclusive programs for Louisiana engineers. It is only through the 8,860 Louisiana Professional Engineers and EIT's that an effective VOICE for the engineering profession can be heard. Help us to tell legislators that LES has more than 50% of all engineers in the state as members.

You are an engineer. It is your profession. Why procrastinate? Join today! Fill in the form below, clip or reproduce and mail to LES, P.O. Box 2683, Baton Rouge, La. 70821. NSPE and LES dues total $94 a year (26 cents a day). A very small investment for your profession.

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I hereby apply for admission into the Louisiana Engineering Society and agree to comply with the Constitution and Bylaws and the Code of Ethics of the Society. I also apply for admission into the National Society of Professional Engineers, if qualified and if I have indicated 'yes' to question No. 8 opposite.

Please assign me to the Chapter checked below:

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NOTE: If you are a PE, EIT or LS only one LES Member Sponsor is needed, otherwise please list the names of three LES members as your references. A brief professional experience record must be attached if you are not a PE, EIT or LS.

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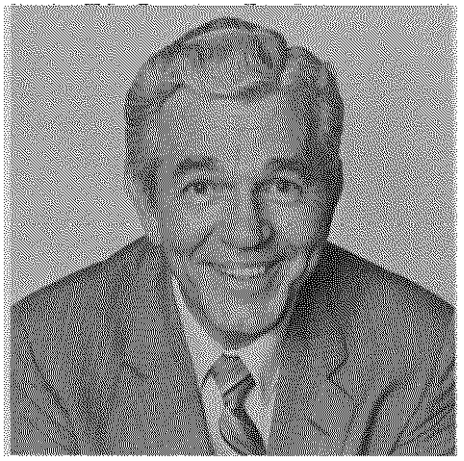
PRESIDENTIAL PRIVILEGE

Throughout the United States there are over one-half million engineers who are Registered Professional Engineers licensed by state registration boards to practice engineering. States' registration laws have as their main purpose the protection of the public from fraudulent engineering practitioners and they therefore establish minimum standards of competence and ethical conduct.

There are over 15,000 Professional Engineers, and over 3,000 Professional Land Surveyors, licensed by our Louisiana State Board of Registration for Professional Engineers and Land Surveyors (LBR). The 1980 changes to our Louisiana Registration Law for Professional Engineers and Land Surveyors increased the authority of our LBR to strengthen minimum standards of competence and ethical conduct of registrants, and mandated that our LBR shall adopt and enforce Rules of Professional Conduct for all registrants. A copy of our LBR's current rules was mailed to each individual registrant and LES member as an insert in the **Louisiana Engineer** Magazine several months ago. The LBR and its Executive Secretary, Paul Landry, P.E., are doing a good job enforcing the rules.

During the first five years of my professional experience, while working for industry in New York and West Africa, I was not legally required to be registered. During the next seven years of my engineering experience, while working for industry in Louisiana, I was not legally required to be registered due to the exemption in our Louisiana Registration Law. However, the first thing I did upon returning to Louisiana to work for industry was to apply for and receive my registration. I have a strong conviction that engineers should be registered, whether employed in the public or private sector, if we are to safeguard the life, health and property of our fellow man.

I feel the engineering profession in Louisiana, and throughout the nation, now owes a deep sense of gratitude to the deans and professors of our engineering colleges for promoting and encouraging registration of engineering graduates. The Louisiana Engineering Society and the National Society of Professional Engineers encourage registration as the major goal of each society. Many of the engineering technical societies include along with their foremost goals the encouragement of registration of their members.



Lamon L. Moody, Jr., P.E.
LES President

During the last twenty years I have been engaged in the private practice of engineering. As an employer of engineers I have always encouraged registration of all engineers. We pay application fee costs, grant time off with pay for taking examinations, make available, in our library books and reference materials for preparation of taking examinations, participate in the cost of seminars and special classes and correspondence courses leading to registration, and other considerations. When we require one of our engineers to become registered in another state we pay all expenses associated with it.

Depending upon the source of nationwide surveys you may choose there are approximately one and one-half million men and women practicing the profession of engineering in the United States. This means that only one third of the practitioners are registered. I feel this is a shame and a disgrace to the engineering profession!

Yes, I am well aware that our Louisiana Registration Law does not require registration of engineers employed in industrial operations, nor those employed with a public utility corporation under the jurisdiction of the Louisiana Public Service Commission, nor those employed with electrical cooperatives under the Rural Electrification Acts. These engineers have been specifically exempted from registration requirements since passage of Louisiana Act No. 73 which was passed by the Louisiana Legislature in 1950. Most other states' engineering registration laws have, over the years, included these same exemptions from registration; however many of the other states have repealed these exemptions during these later years.

I suggest that we in Louisiana do the same thing - repeal these exemptions! There was a time in this state and nation when industry and public utilities had more stringent requirements of their engineers for the protection of life and property than was required by state registration laws. However, over the past several years state and federal laws have become more and more stringent on safety and protection of life and property in equal application in both the private and public sectors. We are all familiar with OSHA, EPA, DOT, FERC, etc., etc., safety regulations.

BUT, WHETHER WE REMOVE THE EXEMPTIONS FROM OUR STATE REGISTRATION LAW OR NOT WE HAVE A PROBLEM! There are a large number of our fellow engineers in Louisiana employed in industry and public utilities who have never been required to become registered and many of these have therefore never asked to become registered. From my personal acquaintance with many of these unregistered engineers I know them to be highly competent, highly qualified, well experienced and top notch engineers. Most of these engineers received their engineering degrees many years ago. It would be an injustice to them to require that they take a written examination in the Principles and Practice of Engineering to become registered.

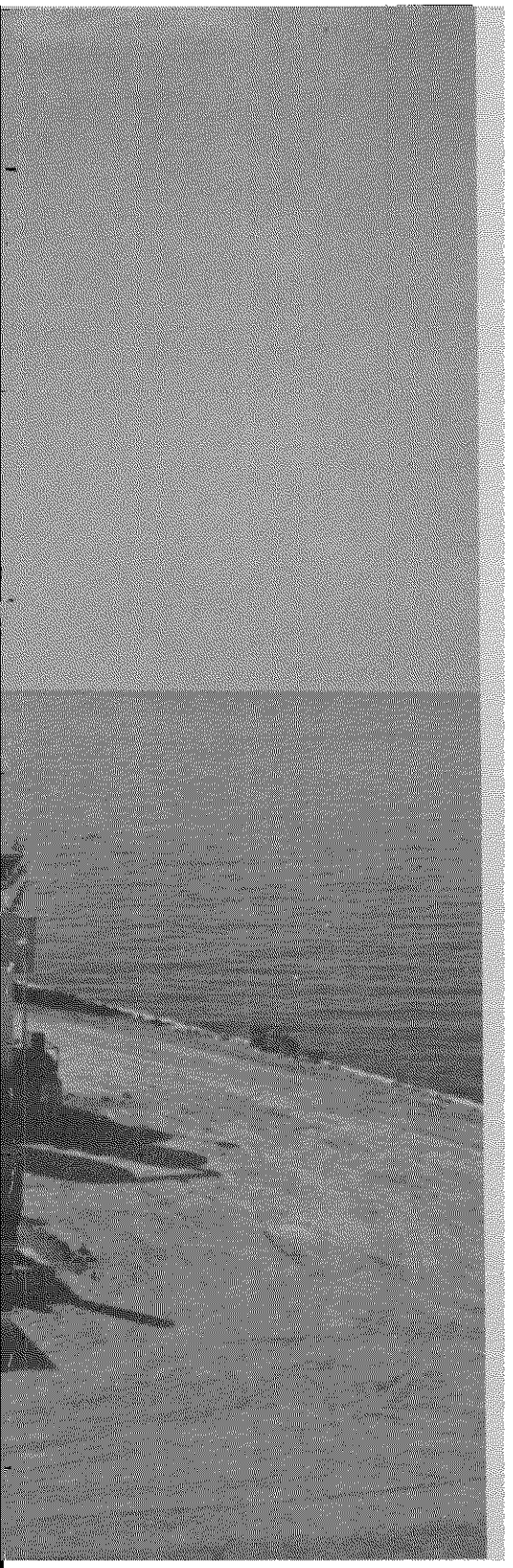
Louisiana Revised Statute (LRS) No. 37: 693 B (d) (of our Registration Law) states: "On or before December 31, 1984, the board (LBR) *may* register an applicant *without written examination* who presents the written recommendations of five or more professional engineers registered under this Chapter; and who submits proof that he has had at least twenty years of successful practice *satisfactory to the board*, not less than twelve years of which shall have been in the responsible charge of important work." Thus, after approximately two years from now this option of registration will be phased out of our registration law. I personally feel that it should be phased out for it has been in our registration law since 1950. Also, for our registration law to be compatible with other states' registration laws it must be phased out.

Rule No. 3.3.4, entitled "LONG ESTABLISHED PRACTICE," of our LBR's Rules for Professional Engineers

Continued on page 20

Experience and Testing At Key West Helps Advance Reverse





The three-million gallon-per-day "Permasep" reverse osmosis (RO) desalination plant, inaugurated at Key West, Florida, in January 1981, has proved that reverse osmosis is an efficient, reliable, cost-effective technology for large desalting plants. The plant has also permitted the testing of several improvements in "Permasep" permeators and process technology which demonstrate that reverse osmosis is more economical than thermal processes.

The plant, constructed in seven and one-half months by Water Services of America, Inc. (WSA), of Milwaukee Wisconsin, is the largest seawater reverse osmosis facility in the Western Hemisphere. It produced municipal drinking water from seawater in a single-pass pumping operation.

Since start-up, the plant has consistently met its contractural requirement to produce water with less than 500 parts per million of total dissolved solids (TDS) and less than 250 ppm chloride at 90 percent utility.

WSA operates and maintains the RO plant under a lease agreement with the Florida Keys Aqueduct Authority (FKAA). A special agreement has enabled WSA and Du Pont to accurately monitor plant performance as well as to evaluate new product and system developments which include:

- Improved "Permasep" permeators.
- Improved long-term productivity projection techniques.
- Energy savings from energy recovery turbines.
- Reduced cleaning and post-treatment frequency.
- Simplified pretreatment techniques.

Product Improvements

The Key West plant has been operated consistently at the highest pressures recommended by Du Pont. Water temperature has averaged 27°C with operating pressures of 1000 pounds per square inch gauge (psig). WSA has carefully controlled conditions to permit Du Pont to rigorously test several membrane and permeator modifications. More than 150 test permeators have been operated in excess of 400,000 hours. Improved mechanical designs were tested which further increase permeator life and improve mechanical integrity, thereby reducing the need for routine maintenance.

Du Pont recently incorporated many of these field-proven changes into its commercial product line. The improved permeator, which was introduced on May 15, 1982 has 5% greater productivity, although external permeator dimensions are unchanged. This product is expected to operate longer and more trouble-free at even higher temperature/pressure conditions than have previously been recommended and employed at Key West.

Activity continues to develop permeators capable of greater effectiveness and utility at higher temperatures and pressures. Such permeators will reduce overall system costs and make "Permasep" RO systems even more competitive with thermal processes such as multi-stage flashing.

Revised System Design

Original long-term flow projection methods for B-10 "Permasep" permeators were based on experimental data. The performance data from Key West, together with long-term B-10 flow performance data from other seawater plants operating over the past five years, has allowed refinement of projection methods.

As a result, Du Pont revised its method for estimating long-term permeator flow. Using the new design basis, plant performance in the third to fifth year and beyond can be predicted more accurately. The data confirm that B-10 RO systems designed for standard conditions of 25°C and 800 psig will require fewer permeators than previously recommended.

Energy Savings

A principle advantage of the RO process is that it consumes one-third to one-half less energy than thermal desalting technologies, particularly multi-stage flash distillation (MSF). Most of the ener-

gy required by the RO process, about 85%, powers the high-pressure pumps that feed water to the permeators. This low-energy requirement was reduced another 33% at the Key West plant with energy recovery (ER) turbines. WSA retrofitted the high-pressure pumps with common shaft hydroturbines that recover energy from the brine reject water stream which is discharged from the permeator at a pressure of 900 psig or greater.

The last ER unit at Key West came on line in December, 1981, one year after initial plant start-up. The recovery unit investment costs will be recovered in less than one year and have already permitted the FKAA to save up to $100,000 each month in electricity costs.

Energy Requirement at Key West

	Total Energy Consumption kWh/1000 gal. product water
Key West before Energy Recovery	38.3
Key West after Energy Recovery	25.3

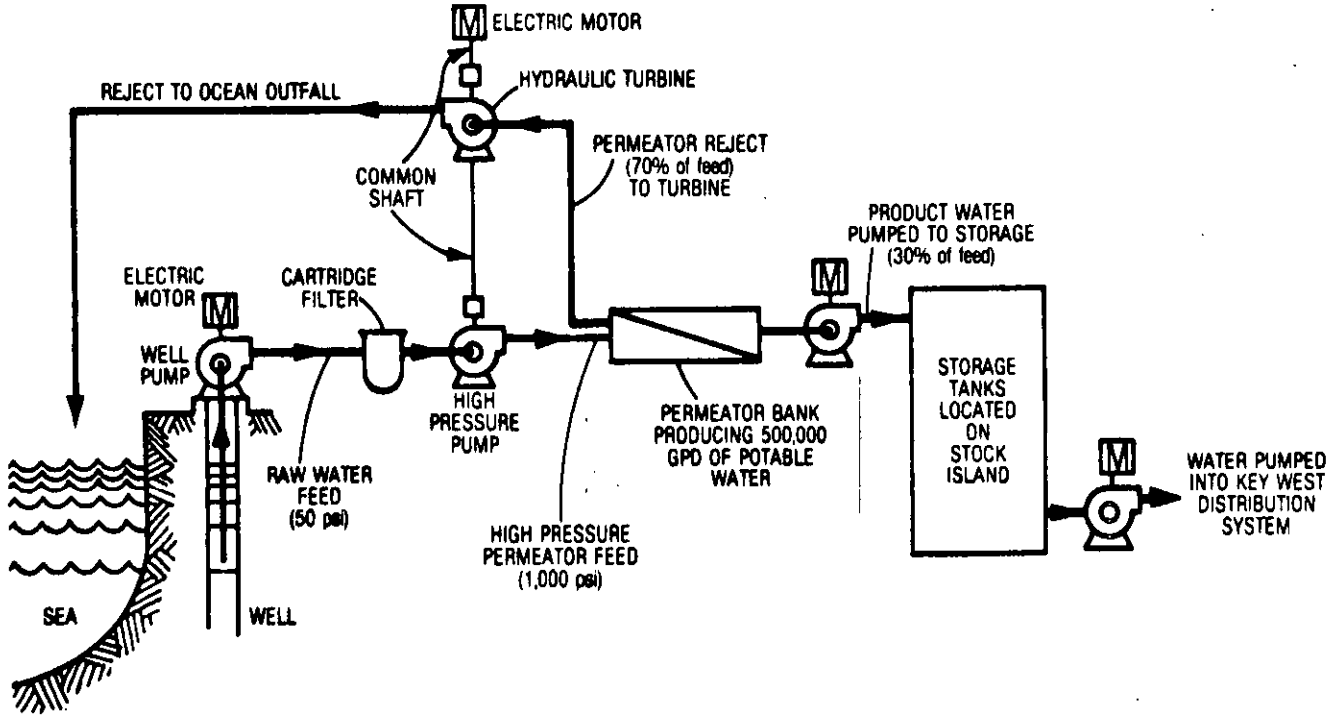
Chemical Savings

Key West plant permeators have never required cleaning in the year they have been in operation, even though operating and maintenance forecasts anticipated cleaning every three months. Four months after start-up, a mechanical test of the cleaning system was successfully run on a subrack of 20 permeators, including the standard flushing of the permeators with "BIZ" (a phosphate detergent) and citric acid at pH4.

Analysis of permeator performance before and after the test confirmed that frequent cleanings are not necessary for properly designed systems. Chemical savings have resulted from the reduced cleaning schedule. In addition, plant utility has also been above expectations because of the reduced amount of downtime forecast for cleaning.

The Key West operation also has saved on scheduled post-treatments of the membranes. The original operation and maintenance plan anticipated post-treatment (PTB) applications once a month, to enhance salt rejection. Only one PTB treatment was required during the first 15 months of operation. This reduced frequency of PTB treatment has resulted in chemical savings.

Permasep® Single-Pass Seawater RO Plant With Energy Recovery Turbine
Florida Keys Aqueduct Authority, Key West, U.S.A.



POTPOURRI

Leta Bueto

Executive Secretary

Louisiana Engineering Society



Editor's Note

It is a pleasure to serve the Louisiana Engineering Society as its Executive Director. I'd like to express my appreciation to the LES Board of Direction and members for their support. It is our desire to maintain an efficient staff to serve the needs of the engineers in our state. Please do not hesitate to contact the State Office for assistance.

Highway Hall of Honor Inductee

Major H. Lee Arledge, a retired state police officer, was inducted into the Louisiana Good Roads and Transportation Association's Highway Hall of Honor on October 27. Ceremonies were held in the lobby of the Louisiana Department of Transportation and Development headquarters in Baton Rouge.

The Hall of Honor induction ceremony pays tribute to individuals who have made extraordinary contributions to Louisiana's highways and streets and programs in the areas of safety, engineering, design, invention or legislation.

Major Arledge, throughout his years of public service, has played a key role in the development of safety programs and systems for the benefit of the traveling public. He developed the uniform "no fix" traffic citation form, designed a new accident report form and reporting requirements, and rewrote the central accident data summary file for the Department of Public Safety.

Arledge has promoted public safety awareness by serving as Executive Director of the Louisiana Highway Safety Commission. He has also served as Executive Officer of the State Police Director's Staff, Chief Instructor in the State Police Training Academy and LSU Law Enforcement Training Program.

Louisiana Institute of Building Sciences

Louisiana Institute of Building Sciences (LIBS) has signed a $21,000 contract to develop the nation's first low cost code search service for architects, engineers and contractors. The project goal is to improve the accuracy of code compliance and reduce the labor cost of determining the Life Safety Code and Building Code requirements for proposed building projects. The code search and printouts would be available through computer programs sold by LIBS and through a computer run based on simple information sheets mailed or phoned in to the LIBS office.

Funding for this major project is being provided from your LIBS dues, and the Board of Architectural Examiners. The State Fire Marshal has requested funds in 1983 to assist in the program.

The anticipated savings to users of this type of service and the national market potential holds promise of substantial income for future LIBS programs and services, thus we see your investment in LIBS as providing an impact on the construction industry for exceeding our earliest expectations.

As in the past, LIBS members may expect to benefit from this service at a considerably smaller cost than non-member users.

Revisions to the Fire Marshal's Law and Rules are being prepared by the LIBS and should be available soon. In 1983 the LIBS will be looking into the potential benefits of conducting seminars for prospective building clients. Roofing materials changes and persistent problems in design and application of roof systems and waterproofing problems indicate further attention from LIBS in 1983. Questions concerning activities in LIBS may be directed to (504) 387-5579.

Louisiana Land Surveyors Association Changes Name

At the annual meeting of LLSA in Monroe, Louisiana, April 21-24, the membership adopted the recommendation of their Board of Directors and changed the name of the association to Louisiana Society of Professional Surveyors. This change of identity was made to correspond with the American Congress on Surveying and Mapping member organization, N.S.P.S.

Burgess Elected President of the Louisiana Good Roads and Transportation Association

Ray W. Burgess, P.E., a member of LES since 1947 and a life member since 1978, was elected president of the Louisiana Good Roads and Transportation Association. Burgess is a former Louisiana director of highways and former head of the East Baton Rouge city-parish Department of Public Works. Burgess is a registered mechanical and civil engineer in Louisiana.

The Louisiana Good Roads and Transportation Association was established in 1974 to educate the public on the needs of good roads and transportation on both a state and city level.

The Louisiana Good Roads and Transportation Association sponsors the Louisiana Highways Hall of Honor program along with the Louisiana Engineering Society, Department of Highways, Department of Public Safety, Louisiana Highway Safety Commission, Consulting Engineers Council of Louisiana, Associated General Contractors, and the Louisiana Municipal Association.

LES 1982 Services Directory

The Society has received many laudatory and a few critical comments about the directory. The major criticism concerns the Outstanding Projects Section. Those firms submitting a project also forwarded the contractors, suppliers, etc. for credits on the project. The editor contacted all of the names submitted. Those who supported the project financially were carried on the display page. Those that did *not* were not carried. It was an unfortunate situation, but the solicitation letter on these projects clearly stated this procedure. The proof sent to the firms carried all contractors, suppliers, etc. because negotiations were in process up to the closing date of publication.

The LES staff and publications committee apologizes for all errors in the publication. It was a no-cost publication for the Society. In fact, LES made $1,000 on the project.

New Orleans Chapter Meeting

Over 80 engineers and guests attended the New Orleans chapter meeting on November 16 at the Bali Hai restaurant in New Orleans. The chapter roasted R. C. "Doc" Spears, retired executive director of LES, with words of praise and otherwise, and gifts from Henry Markel, P.E., James S. Janssen, P.E., John J. Bergeron, P.E. and Dale T. Hunn, P.E. Gifts included a manila folder, five finger "digital computer," one dozen used and beat-up golf balls, a bottle of rum, and a plaque. A belly dancer took one look at Doc and left the meeting without performing.

Ms. Jean Denney, project manager for the Economic Development Council, Chamber of Commerce, presented an interesting and educational talk on employment opportunities for the future. Her statistics gave a rosy picture for New Orleans and the state in the years ahead.

NSPE Technology Policy Task Force Target: Engineering Education

The recently established National Society of Professional Engineers (NSPE) Technology Policy Task Force has identified as its first priority "the problems in engineering education," according to Task Force Chairman Dr. Myron Tribus. The group targeted education at its recent first meeting in Washington, D.C.

Further areas of involvement will include research and development, tax structures and industry/government/education relationships. The panel plans to meet again in early winter to further define its strategy.

NSPE President Marvin Specter, P.E.-L.S., established the task force, reflecting what he describes as a "wellspring of interest among NSPE members on technology policy." The nation's need to reassert and strengthen technological leadership in the global marketplace is the focus of task force.

Dr. Tribus is currently director of the Center for Advanced Engineering Study at the Massachusetts Institute of Technology.

Engineering Degrees

JETS REPORT has released statistics on the number of engineering bachelor degrees

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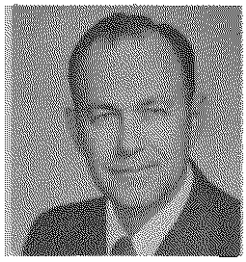
NÔTRE MÉTIER

Paul L. Landry, P.E., Executive Secretary, Louisiana State Board of Registration for Professional Engineers & Land Surveyors.



Examinations

The National Council of Engineering Examiners (NCEE) Board of Directors approved the adoption of new test specifications for NCEE Principles & Practice of Engineering Examinations effective with the Spring, 1983 examination administration. These test specifications, based upon the results of NCEE's "Task Analysis of Licensed Engineers, Volume I and II, March, 1981," were formulated in accordance with nationally recognized guidelines.

The revised specifications, recommended for approval by the Uniform Examinations and Qualifications for Professional Engineers Committee, (UEO), and supported by the Professional Examinations Advisory Committee (PEAC), do not depart radically from the present test specifications, with the exception of the combinations of the Civil/Sanitary/Structural examinations specifications. Presently, these specifications are separate, with 20 problems in each discipline. Combining the Civil, Sanitary and Structural disciplines into one examination containing 24 problems provides an adequate number of problems for the respective discipline requirements and satisfies those member Boards, such as Louisiana, which require licensure by individual discipline.

The survey, upon which the specifications are based, was conducted primarily to contribute toward NCEE's continuous efforts in providing fair, meaningful, uniform and objective standards with which to measure minimum competency for professional licensure and to assist NCEE in maintaining the valid criteria used in preparing examinations offered to member Boards using the examinations as part of their licensing process.

Please refer to the chart elsewhere in this article for the examination specifications effective in Spring, 1983.

Examination for Record Purposes

Professional engineering registrants of the Louisiana Board may wish to take the Principles & Practice of Engineering examination in the branch of engineering in which they are currently registered so as to assist them in reciprocity registration in the future. Prior to 1967, a number of professional engineering registrants were registered by the Board without having to pass the Principles & Practice of Engineering examination. When one applies for reciprocity registration, some states require that a professional engineer take and pass this examination.

Under LAC 19-3:9.6 - the Board recognized this need. This rule states in part "the Board provides the opportunity for engineers, who are registered in Louisiana, to take the National Council's examination in the branch of their registration without affecting their registration status with the Board. These examinations are offered at times and places designated by the Board. The applicant will be charged a fee for this service." Professional engineering registrants may apply to take the examination in the branch of their registration by simply writing a letter to the Board making the request, and enclosing an examination fee of $75. This request should be made at least 90 days prior to any scheduled examination.

Annual Renewals

All annual renewal notices have been mailed out to the registrants of the Board. Renewal notices are mailed out to the registrant's last known address. Registrants move, without notifying the Board, and errors in the Board's mailing list result in the notice being returned to the Board. Therefore, if a registrant has not received a renewal notice at this reading, he should mail his annual renewal fee to the Board and state in his communication, his registration number.

There is some delay in the processing of a renewal application and the accompanying check. The check received by the Board office for the payment of an annual renewal fee is usually deposited within a very short period of time. The delay, which registrants will experience, will be in the receipt of their license card. The cancelled check is the registrant's receipt of payment of the annual renewal. However, if a license card has not been received by January 15, 1983, please contact the Board office.

Greetings

The Board office staff wishes you Un Bon Noel et Une Bonne Anée!

BOARD MEETING NOTICE

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors will hold its 1983 regular meetings at 1055 St. Charles Avenue - Suite 415, New Orleans, La. 70130 on the following dates:

1983

Jan. 25 & 26
Mar. 22
May 24
July 26
Sept. 27
Nov. 22

Individual Renewal Notices have been mailed out

Registrants who have not received their renewal notice should mail their annual renewal fee to the Board and state their registration number in the correspondence. The fee schedule is:

Professional Engineer	20.00
Land Surveyor	20.00
Corporations	20.00
Engineer-in-Training	10.00
Land Surveyor-in-Training	10.00
Civil Engineer-Public Employee	20.00

Renewal fees are due not later than December 31 for individual registrants and for corporations no later than June 30. Fees are twice the normal amount the first six months delinquent and three times the normal fee thereafter.

EXAMINATION SCHEDULE	SPRING Apr. 16, 1983 Apr. 14, 1984	FALL Oct. 29, 1983 Oct. 27, 1984
Fundamentals of Engineering Examination (8 hrs.)	X	X
Fundamentals of Land Surveying Examination (8 hrs.)	X	X
Principles and Practice of Engineering (8 hrs.) Civil (Including Structural & Sanitary), Mechanical, Chemical, & Electrical	X	X
Agricultural, Industrial, Metallurgical, Mining & Petroleum		X
Principles and Practices of Land Surveying (4 hrs.)	X	X
Laws and Procedures of Land Surveying (4 hrs.)	X	

Apply at least 90 days prior to examination date.

RECENTLY RENEWED FIRMS

Allied Engineering Corporation — E
822 Baronne St.
New Orleans, La. 70113

Prescott Follett & Associates, Inc. — E
822 Baronne St.
New Orleans, La. 70113

Haller's Air Conditioning Maintenance & Engineering Service Company, Inc. — E
7759 Townsend Place
New Orleans, La. 70126

Hudson Engineering Corporation — E
801 N. Eldridge St.
Houston, TX. 77079

In-Line Engineering, Inc. — E
Rt. 2, Box 88
Arcadia, La. 71001

Kemp Engineering Co., Inc. — E
P.O. Box 172
Addison, TX. 75001

McDermott Incorporated — E/LS
1010 Common St.
New Orleans, La. 70112

E. L. Palmer, Inc. — LS
P.O. Box 62
Many, La. 71449

E. Lionel Pavlo Engineering Co. — E
469 Seventh Ave.
New York, N.Y. 10018

Sargent & Lundy — E
55 E. Monroe St.
Chicago, IL. 60603

Smith Engineering and Construction Co., Inc. — E
203 West Ave.
Long Beach, MS 39560

Soil Testing Engineers, Inc. — E
P.O. Box 80379
Baton Rouge, LA. 70898

Williams-McWilliams Co., Inc. — E
P.O. Box 7730
Metairie, La. 70010

RECENTLY REGISTERED FIRMS

Acadian Construction and Engineering, Inc. — E
245 Highlandia Dr.
Baton Rouge, La. 70810

Alliance Engineering and Design Inc. — E
8865 College St.
Suite 207
Beaumont, TX. 77707

Applied Mechanics, Inc. — E
P.O. Box 66811
Baton Rouge, La. 70896

Badger Engineers, Inc. — E
One Broadway
Cambridge, MA. 02142

Boh Bros. Construction Co., Inc. — LS
P.O. Drawer 53266
New Orleans, La. 70153

G. Q. Carmichael Surveyors and Engineers, Inc. — E/LS
P.O. Box 1604
Athens, TX. 70751

Chander Engineering Co., Inc. — E
4509 Jasper St.
Metairie, La. 70002

Chien Associates, Inc. — E
3525 N. Causeway Blvd.
Suite 717
Metairie, La. 70002

Continental Engineering Corporation — E
P.O. Box 5197
Mobile, AL. 36605

Delaune and Associates, Inc. — E
1101 Smith
Metairie, La. 70005

Digicon Panel & Engineering, Inc. — E
600 Wooddale Blvd.
No. 140
Baton Rouge, La. 70806

Engineered Oilfield Equipment, Inc. — E
2245 Manhattan Blvd.
Harvey, La 70058

The Engineering Development Group, Inc. — E
4033 Veterans Memorial Blvd.
Suite 211
Metairie, La. 70002

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NCEE - PRINCIPLES & PRACTICE OF ENGINEERING EXAMINATION SPECIFICATIONS

Discipline	Category	Subject	Problems Per Category
Agricultural	1	Irrigation and Drainage	3
	2	Soil and Water Conservation	3
	3	Machine Design	2
	4	Power, Control and Systems	2
	5	Structures	2
	6	Environmental	2
	7	Crop Handling and Processing	3
	8	Food Engineering	2
	9	Engineering Economics	1
		Total	20
Chemical	1	Thermodynamics	3
	2	Process Design	4
	3	Mass Transfer	4
	4	Heat Transfer	2
	5	Chemical Kinetics	4
	6	Fluids	2
	7	Engineering Economics	1
		Total	20
Civil/Sanitary/ Structural	1	Transportation	5
	2	Structural	7
	3	Sanitary	5
	4	Hydraulics	4
	5	Soils	2
	6	Engineering Economics	1
		Total	24
Electrical	1	Power	8
	2	Electronics	6
	3	Control Systems	3
	4	Computers	2
	5	Engineering Economics	1
		Total	20
Industrial	1	Facilities Planning	4
	2	Management	2
	3	Manufacturing	3
	4	Operations Research/Systems	3
	5	Production & Inventory Control	2
	6	Quality Assurance & Applied Statistics	2
	7	Work Measurement & Ergonomics	3
	8	Engineering Economics	1
		Total	20
Mechanical	1	Mechanical Design	8
	2	Management	1
	3	Energy Systems	6
	4	Control Systems	1
	5	Thermal and Fluid Processes	3
	6	Engineering Economics	1
		Total	20
Metallurgical	1	Fabrication and Processing	2
	2	Metallurgical Thermodynamics and Corrosion	3
	3	Selection of Material	2
	4	Thermal Treatments & Solid State Processing	3
	5	Structure/Property Relationships	2
	6	Failure Analysis	2
	7	Mineral Processing	2
	8	Extractive Metallurgy	3
	9	Engineering Economics	1
		Total	20
Mining/Mineral	1	Exploration and Geology	3
	2	Mine Planning	6
	3	Mine Operations	3
	4	Ground Control	3
	5	Mineral Processing	3
	6	Environment and Governmental Regulations	1
	7	Engineering Economics	1
		Total	20
Petroleum	1	Drilling and Completion	6
	2	Production	4
	3	Reservoir and Improved Recovery	6
	4	Formation Evaluation	3
	5	Engineering Economics	1
		Total	20

Structural Design — A New Approach

(Dr. Lev Zetlin, a distinguished consulting engineer, is president of Zetlin-Argo Liaison & Guidance Corporation in New York. He is a professor of engineering at Pratt Institute, and was formerly University Professor of Civil Engineering and Architecture at the University of Virginia. Dr. Zetlin's numerous investigations of structural problems include the Kansas City Hyatt Regency, Pleasants Power Station in West Virginia, the Hartford Coliseum collapse, and the Montreal Olympics Complex. From these investigations and extensive experience in designing both conventional and innovative structures, he has developed definite steps in the process of engineering design that might avoid both structural deficiencies and claims. Dr. Zetlin presents his ideas in the following article:)

Technical magazines and daily news media abound with references to structural problems on construction projects and the ensuing litigations. It is apparent that recently discovered legal loopholes have encouraged many of these claims and litigations. However, it is undeniable that there have been some tragic structural collapses within the last few years. Engineers and architects must revise their practice to eliminate structural deficiencies, and to close legal loopholes.

MODERN TRENDS

The accelerating rate of change in design standards (codes, materials), methods of fabrication and manufacture, quality of skilled labor, technology of mass production, cost of building materials, and management procedures has caused corresponding changes in the management of construction projects, construction techniques, and methods of engineering design.

The effects, for example, of changes in the relative cost of building materials is often underestimated. As the changing relative cost of gasoline to steel affects the design of an automobile, so the changing relative cost of steel and synthetics affects the design of a structure. These changes affect, in turn, the three main elements of the construction industry — innovative components and materials availability, field construction technique, and engineering methodology.

In the leisurely past, change in these elements was gradual. The chain reaction of effects on the stresses, deformations, deflections, and safety of a structure that can be caused by a single change to a component could be accommodated. In these times of rapid change, however, the effects of this chain reaction are either not being taken into account, or not properly evaluated with sufficient speed and thoroughness. Thus, structural problems occur.

For example, steel frames of tall buildings are lighter, more economical, and more flexible than they used to be. This increased flexibility might be incompatible with innovations in plate glass that require a different window frame. Should the new window frame be unable to accept the flexibility of a lightweight steel frame, the window frame will bend and the glass will crack. In this case, the plate glass manufacturer should have considered the effect of a modern flexible steel frame.

It is obvious that a single change in a product, such as glass, often leads to changes in other products, materials, and construction techniques. Ignorance of this chain reaction is the source of many claims and litigations that spring from the widening gap between engineering design and the structural behavior of a building.

It is not the lack of engineering knowledge, ability, or good will of the engineering profession that creates the gap which results in the chain reaction effect. The cause is the "inertia" of the engineering practice; that is, the tendency to base theoretical premises and assumptions upon older materials, techniques, components, and connections which may be incompatible with modern evolving technology.

SAFETY PARAMETERS

The safety of a structure depends on many parameters. Only a few of these physical characteristics, however, are considered in routine engineering and design. Others are either neglected or included empirically in basic engineering theory. For example, the modulus of elasticity of material is considered as a fixed constant in routine design. In fact, modulus of elasticity is variable with the stress, location, duration, and period of applied stress. These variations, however, are not included in routine engineering design practice. When structural deficiencies occur which are due to a different modulus of elasticity than the constant value assumed in the design (as taken from a handbook), the search for the deficiency often begins with the conventional parameter, a constant modulus of elasticity. This is but one example of the lack of precise knowledge of the many arbitrary constants which affect the structural behavior of a building.

When materials and construction techniques remained essentially the same, consideration of the precise effects of these constants was not necessary, since the behavior of structures was relatively constant. However, as changes in products and construction techniques are introduced, the effects of neglected parameters became significant. Particularly important is the accumulative effect of multiple parameters that are affected by changes. Understanding of the various sets of physical characteristics which affect the safety of a structure is important, not only to the design, but also to litigation that involves establishing the cause of a structural deficiency. Separate investigators will tend to arrive at different conclusions if they consider different parameters.

The accelerating pace of innovations in every facet of the construction industry will be a continuing trend. These innovations represent potential benefit that cannot be ignored. The engineering profession must continually adjust its practice and methodology. Both experience and the increase in claims indicate that it is

extremely difficult, if not impossible, for a practicing engineering office to foresee the effects of these innovations, and to administer the resultant changes in design.

In administering the structural design of a project, which involves preliminary work, final design, final drawings and specifications, shop drawings and field observations — all of which might take months and thousands of man hours of work — a practicing engineering office will have great difficulty keeping up with the effects of chain reactions of various major and minor changes in the construction techniques, building products, building materials, and design methodology. In addition, design engineers usually follow standard codes, Sweet's Catalog, handbooks, and similarly well established design procedures and guidelines. These procedures tend to create an inertia that follows the established design practice of yesterday, rather than the changes that may have been introduced by today's design practice.

It is also important that an engineering office not encroach on other disciplines and jurisdictions. For example, should a design engineer suggest a construction method for a structural detail — a decision wholly within the jurisdiction of the contractor — he might, at a later date, be held liable for a deficiency that results from the "as constructed" detail.

PYRAMID OF DUTIES

The usual pyramid of duties in an engineering design office is as follows:

Designer
Project Engineer
Principal-in-Charge

The designer's primary function is to produce a design that conforms with the requirements of other disciplines (architectural, mechanical), building codes, material and fabrication standards, etc. The designer's authority to investigate aspects of the project beyond his own design is usually limited. Should he recognize a chain reaction, which is not likely due to his limited involvement on the project, his inquiry may not be accepted by his project engineer for personal and/or administrative reasons.

Similarly, a project engineer's function is to produce and administer efficiently a complete set of drawings and specifications, coordinate various trades, attend conferences, take care of correspondence, and assure that the design complies with codes and standards. The pressure of these duties makes it difficult for the project engineer to visualize possible detrimental effects of a chain reaction that has been set up by the introduction of new products or new construction techniques.

The principal-in-charge is often responsibile for several projects. In addition, he has the burden of administrative and financial functions. Thus, it is difficult for a principal-in-charge to search for possible chain reactions.

The drawings of a design engineer customarily represent a structure that has been based on certain theoretical assumptions. It is his belief that the contractor will deliver a completed structure that satisfies the design assumptions. This belief will prove to be true when a contractor's construction procedures have been tested by a history of satisfactory results. If, however, the effect of a chain reaction due to changes in various materials, components, etc. had not been considered in the design, the contractor would continue with an established procedure that would not satisfy the initial design assumptions. Conversely, a contractor's changing construction technique (unknown to the design engineer) would be in variance with the initial engineering design assumptions.

NEW ENGINEERING DISCIPLINE

For a design team to foresee the chain reaction and its myriad of effects would require, on one hand, extensive additional technical training, and on the other, individual imagination and audacity. The first is impractical, while the second will cause deviation from accepted practice standards within the design team, and possible dissension from, and disobedience to, the immediate supervisory authority. The bridging of this gap would best be done by a select independent team of engineers who act as outside consultants. This professional service is labeled by the author as "Liaison and Guidance."

Liaison and Guidance is performed by imaginative, experienced engineers who have a practical and theoretical "sixth sense" for behavior of structures. This team can foresee the chain reaction effect, and establish guidelines for the engineering design that result not only in a more efficient structure, but above all, that reduce subsequent structural deficiencies and claims.

Liaison and Guidance "crystal-balls" a structural problem before it occurs, rather than establishing it after it occurs. The basic concept of Liaison and Guidance is akin to the concept of business consultant. The latter is helpful to a corporation even though that corporation has a full staff of business executives.

This writer and the owners of many projects have had successful experiences in the past few years in utilizing Liaison and Guidance on both small and large projects. Because the Liaison and Guidance team is unhampered by routine design and details, it can evaluate and predict the causes of structural deficiencies more efficiently than a practicing design engineering office.

The Liaison and Guidance team does not compete with the designing engineer; it is not involved in any complete design of projects. With tact and mutual respect, the team helps the designing engineers, the architects and contractors, and most importantly, the project.

(From: DPIC *Communiqué*, October, 1982)

SEASON'S GREETINGS

The staff of Consulting Engineers Council of Louisiana, Inc. takes this opportunity to wish all of you a very Happy and Holy Holiday Season and sincerely hopes that the New Year will see your dreams and hopes fulfilled!—

1983 Engineering Management Courses at LSU

FACULTY

The courses will be taught by regular faculty members of the LSU College of Business Administration and engineering or by able, qualified professors from other universities in the state.

CERTIFICATE

Upon completion of four acceptable courses and a certificate application form, the participant will be awarded a Certificate in Engineering Management by the Division of Continuing Education. An Advanced Certificate will be awarded to students who take a total of six courses.

COST

The fee per participant is $200 for each course and includes the cost of textbooks.

REGISTRATION

To insure that each student will have an opportunity to participate in discussion, enrollment in each section will be limited to 30 students.

Please complete the following form and return it to the address below if you are interested in the fall program. (Classes will begin during the week of Jan. 17, 1983.)

MAIL FORM TO:
Dr. L. Mann
Industrial Engineering Dept., CEBA Bldg.
Louisiana State University
Baton Rouge, Louisiana 70803-6409

Name _____

Address _____ Phone _____

City & State _____ Zip _____

Classes will be organized Mon., Jan. 10, 1983 in Room 122A, LSU Medical Center, New Orleans - 7:30 PM and on Tues., Jan. 11, 1983 in Room 3136 CEBA Bldg., LSU, Baton Rouge - 7:30 PM.

Class sessions will be held in the University Medical Center at New Orleans, on the Baton Rouge campus, and in other cities throughout the state where there is adequate demand. To preregister for the classes complete the attached form and return.

AVAILABLE COURSES

Course A — Modern Management
Course B — Project Management with CPM/PERT
Course C — Engineering Economy
Course D — Financial Decision Making
Course E — Automation and Computer Aided Manufacturing
Course F — Basic Engineering Statistics
Course G — Human Relations
Course H — Cost Estimating
Course I — Microcomputers for Decision Making

I wish to preregister for the course indicated. (Please show your first choice with a 1, second with a 2, etc. Show a single location choice only).

COURSES OFFERED
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( ) Project Management
( ) Engineering Economy
( ) Finance
( ) Automation
( ) Statistics
( ) Human Relations
( ) Cost Estimating
( ) Microcomputers

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(See page 4)

LES/PAC

Did you ever wonder how you could become part of the political process — how you can effect change in State government? One easy way is to join the efforts of LES-PAC.

LES-PAC contributes money to candidates for the Louisiana Senate and House of Representatives who are willing to listen to the engineering point of view. We need to work for sympathetic candidates.

A $25 contribution to LES-PAC makes you a voting member — eligible to vote for members of the Board of Trustees and for bylaw changes. Help LES continue this important work with a contribution.

Voting Membership to date:

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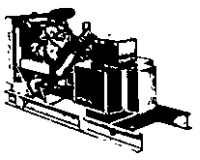

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Second LEF Scholarship Presented

Troy J. Campione received the Louisiana Engineering Foundation 1982 scholarship at the New Orleans Chapter of the Louisiana Engineering Society meeting at the Bali Hai Restaurant in New Orleans on November 16, 1982. The Foundation scholarship is presented annually to a graduate student of engineering who expresses a sincere desire to enter the teaching profession at the university level upon completion of graduate education. Vincent Forte, P.E., Baton Rouge, President of the Louisiana Engineering Foundation, made the presentation.

Troy Campione was born in Lafayette, the son of Mr. & Mrs. Jack A. Campione. He is a graduate of Acadiana High School, Lafayette, and Tulane University with a B.S. degree in chemical engineering. He was valedictorian of his high school class of 500 students, maintained a 3.73 grade point average in undergraduate work, graduating second in his chemical engineering class at Tulane University; and has maintained a 4.0 grade point average in graduate courses completed. He is a member of Tau Beta Pi and Omega Chi Epsilon. Troy is an outstanding recipient of the 1982 Louisiana Engineering Foundation's scholarship.

The Louisiana Engineering Foundation is a tax-exempt organization founded in 1978 by the Louisiana Engineering Society. Its goals are to provide opportunities to the practicing engineering professionals for development programs; to provide scholarships to serve the educational needs of young men and women pursuing a career in engineering; and to maintain a Center to serve all engineers.

Moore Honored

John W. "Billy" Moore, P.E., Ruston office manager of Meyer, Meyer, LaCroix & Hixson, Inc. engineering firm, has been named a 1982 winner of the Edmund Friedman Young Engineering Award for Professional Achievement.

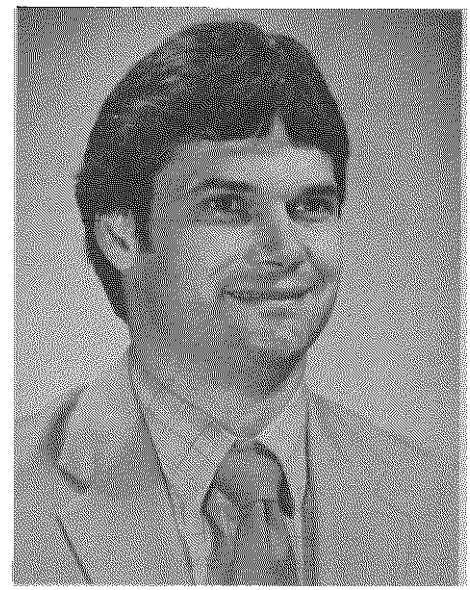
He was one of three engineers in the nation to be awarded the honor by the American Society of Civil Engineers (ASCE) at its annual convention in New Orleans.

The award, which is given to no more than five young engineers annually, is given for community and student chapter activities for the ASCE and for involvement with other professional engineering societies.

A 32-year-old native of Jennings, Moore is a 1972 graduate of Louisiana Tech University with his B.S. degree in civil engineering.

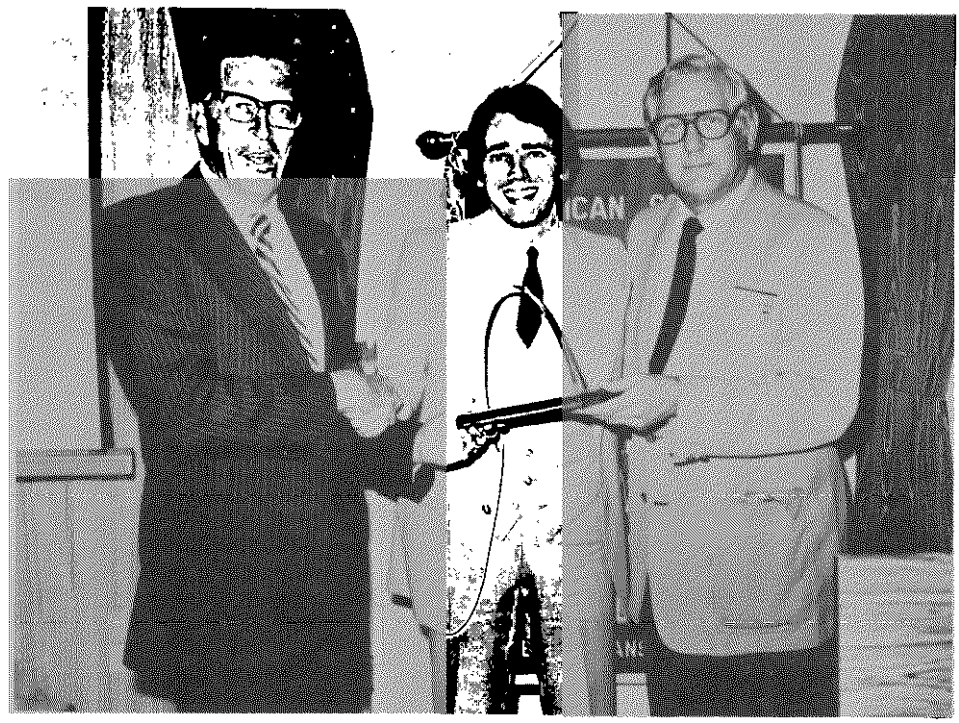
He was a 1977 winner of the F. Hugh Coughlin Award of the Louisiana Engineering Society and has been nominated for the U.S. Outstanding Young Man in 1979, 1980 and 1982.

Moore is active with the Ruston Jaycees, having received national recognition as being one of the top 30 state



officers in the nation at the district level for the organization. Also, he was recently appointed chairman of the transportation committee of the Ruston-Lincoln Parish Chamber of Commerce and has completed a study of proposed transportation needs for the area.

He has been manager of the Ruston Division of Meyer, Meyer, LaCroix & Hixson since last year.



South Central Bell and Flettrich Engineering Services, Inc. win ASHRAE Regional Energy Conservation Award — Waring M. Green, Operations Manager-Building Operations for South Central Bell, on the left, and David C. Flettrich, P.E., Vice president of Flettrich Engineering Services, Inc., center, are shown receiving the first place award in the ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc.) competition of energy conservation in existing commercial, institutional, and public assembly buildings from Joseph S. Riorda, ASHRAE Chapter Energy Management Chairman. Region VII is made up of the states of Louisiana, Mississippi, Alabama, Northwest Florida, Kentucky and Tennessee.

FLETTRICH ENGINEERING, SCB WIN ASHRAE AWARD

South Central Bell (SCB) and Flettrich Engineering Services, Inc. of New Orleans, Louisiana were jointly awarded first place in a regional competition of energy conservation in existing commercial, institutional and public assembly buildings. Entries from six (6) states were judged at the ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers, Inc.) Region VII, Chapter Regional Conference held recently at Memphis, Tennessee.

The purpose of the awards program is to recognize outstanding Energy Management achievement by ASHRAE members and to encourage increased participation in the implementation of efficient energy management measures in both new and existing buildings.

In 1977 American Telephone and Telegraph implemented their BEMARR (Building Energy Management Retrofit and Re-design) program in an effort to conserve energy within the Bell system. The SCB Auxiliary Service Center located in Marrero, Louisiana was retrofitted in 1981 in conjunction with the BEMARR program. The building is a telephone operators facility and contains directory assistance computers and terminal interface equipment.

Both the building retrofit re-design and the ASHRAE entry were prepared by David C. Flettrich, P.E., Chief Engineer and Vice-president of Flettrich Engineering Services, Inc.

Design and innovative energy conserving features and systems which were incorporated in the building retrofit included the elimination of all heat, conversion to a variable air volume system, wide band temperature control, and reductions in both cooling capacities and fan motor horsepower. In addition, automatic controls and an outdoor air economizer system (use of outdoor air for "free" cooling) were added, resulting in 37% yearly energy savings.

New Orleans ASHRAE chapter members who shared in this award were David C. Flettrich and Waring M. Green, Operations Manager-Building Operations for South Central Bell.

Region VII is made up of the states of Louisiana, Mississippi, Alabama, Northwest Florida, Kentucky and Tennessee. By winning at the Regional level, this entry now qualifies for the National Society Competition which includes the winners of all the Regions, totaling 12, and geographically covers the United States and parts of Canada.

Society winners will be announced at the National ASHRAE meeting to be held January, 1983 in Atlantic City, New Jersey.

Standings of LES Membership Contest - October 28, 1982

Standing	Chapter	Chapter Chairman	Quota	Applications	% Quota
1	Lake Charles	Rentrop	22	7	31.8
2	Alexandria	Jeter	16	5	31.3
3	New Orleans	Abadie	133	32	24.1
4	Lafayette	Deitel	49	11	22.4
5	Monroe	Pistorius	23	5	21.7
6	Baton Rouge	Campbell	76	14	18.4
7	Shreveport	Craig	34	3	8.8
8	Bayou	Bernard	15	1	6.7
	STATEWIDE		368	78	21.7
	NON-RESIDENT			2	

MEMORIAM

STEPHEN J. WALLBILLICH, P.E.

It is with deep regret the members of the Louisiana Engineering Society record the passing of Stephen J. Wallbillich, P.E., 77, New Orleans on October 22, 1982.

Wallbillich, a registered civil engineer in Louisiana and a life member of LES since 1958, was a 1926 graduate of Tulane University's School of Engineering. After graduating, he worked with the Army Corps of Engineers. He enlisted in the Army during World War II and rose to the rank of major. After the war, he returned with the Corps of Engineers, where he remained until retiring in 1960.

The Society extends its deepest sympathy to his wife, daughter, sister, and two grandchildren.

NOTRE METIER

Continued from page 11

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P.O. Box 1324
Covington, La. 70434

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601 Vintage
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Vernon F. Meyer and Associates, Inc. LS
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Chattanooga, TN 37415

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Houston, Tx. 77092

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Alexandria, La. 71301

POTPOURRI

Continued from page 9

awarded in 1971 vs 1981. Just how many employed engineers and scientists are there in the United States? According to the National Science Foundation, the number was 2,910,000 in 1980. Roughly half were engineers.

Scientists include physical scientists (chemists and physicists), those in mathematical and environmental categories, and those in the life sciences, psychology, and the social sciences.

Eighty-seven point five percent of the engineers and scientists are men; 12.5% are women. The number of women has grown since 1978, when they made up only 9.5% of the profession. Slowly but surely, the public's image of the engineer is changing. As more women and minorities are actively encouraged to consider engineering careers, stereotypes break down.

There were 62,935 bachelor's degrees awarded to engineering graduates in 1981, the greatest number in any year since 1950. Recent statistics show changes in curricula interest from 1980 to 1981. Graduates in petroleum engineering and the mining and mineral disciplines increased 13% and 11% over that time. Computer engineering grew by 30%; biomedical by 23%; ceramic, 23%; and industrial and manufacturing by 19%.

Fifty-one to go with LEF's Plan "A"

The Louisiana Engineering Foundation (LEF) Plan "A" is borrowing money from engineers and engineering organizations at no interest to retire a $65,000 note at 16% interest on the LEF headquarters building at 1213 Nicholson, Baton Rouge.

We plan to pay back all loans within five years. The payback will be determined by lot. As of December 1, the following engineers and organizations have supported the program:

Louisiana Society of Professional Engineers in Civil Service, Baton Rouge
John C. Copes, P.E., Baton Rouge
Meyer, Meyer, LaCroix & Hixson, Alexandria
Walk, Haydel & Associates, New Orleans
Rayner & McKenzie, Inc., Baton Rouge
Consulting Engineers Council of Louisiana, Baton Rouge
Demopulos & Ferguson, Inc., Shreveport
Domingue, Szabo & Associates, Lafayette
John J. Guth Associates, Inc., Shreveport
Paul Landry, P.E., New Orleans
Coyle Engineers, Inc., Shreveport
Lamon L. Moody, Jr., P.E., Baker
Louis J. Capozzoli & Assoc.
Don Chesson & Assoc.

We request your support. Send a check for $1,000 to LEF as a loan; it will be repaid. We will acknowledge with letter indicating agreement for your file. The names of organizations and individuals who support the program will be engraved on a plaque to hang in the LEF Headquarters.

LES Computer on Line

After many months of hectic operations, the LES computer is working. Chapters may order mailing labels; please submit your request at least 10 days before actual need for labels.

The computer-processed 1983 dues invoices were mailed on November 5, 1982. We apologize for the size of the return envelope furnished. It takes a fold of the dues notice to fit. Next year we will order envelopes the size needed.

The State Office would like to express its appreciation to Dale Hunn, P.E., Steve Johns, P.E., and Andre Amy, P.E. for their many hours of work on the computer.

NSPE Slate of Officer for 1983-84

The NSPE nominating committee has nominated the engineers listed below for the respective offices of the Society for the administrative year 1983-84. All have expressed their willingness to serve if elected: **President-Elect**, Hebert G. Koogle, P.E., New Mexico; **Vice Presidents, Northeast**, Michael R. Pender, P.E., New York; **Southwestern**, Louis Schindler, P.E., Oklahoma; **Southeastern**, David F. Ludovici, P.E., Florida; **Western**, C. Glenn Wilson, P.E., California; **North Central**, Neil E. Bays, P.E., West Virginia; **Treasurer**, Robert C. Gibson, P.E., Virginia.

MOVING?

Submitting this change of address will inform both the Louisiana Engineering Society and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors

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LES
P.O. Box 2683
Baton Rouge, LA 70821



Dale Hunn, P.E., president of the New Orleans Chapter, shows Doc Spears and his wife Mary how to operate the digital computer. Doc was "roasted" during a recent meeting of the LES New Orleans Chapter and received a number of gag gifts.

Merry Christmas
&
Happy New Year
From the
LES Officers & Staff

New Members of the Louisiana Engineering Society

ALEXANDRIA

Rodney L. Jeter
P.O. Box 26
Forest Hill, LA 71430
Private Practice

Fred E. Wiker, P.E.
P.O. Drawer 5638
Alexandria, LA 71301
Private Practice

Wilton J. Semien, Jr.
P.O. Box 636
Oakdale, LA 71430
Industry

Edward E. Ducote
3666 Gov't St.
Alexandria, LA 71301
Private Practice

Alvin G. Wolfgram
404 Welwyn Way
Alexandria, LA 71301
Private Practice

William H. Branch
2026 Vance
Alexandria, LA 71301
Private Practice

Joseph A. Tarver
1022 10th St.
Alexandria, LA 71301
Private Practice

Karen A. Fuselier
5603 E. Circle Dr.
Alexandria, LA 71301
Private Practice

Lindal "Keith" Hillman
Pan American Engrs.
1022 10th St.
Alexandria, LA 71301
Private Practice

James N. Moore
2515 England Dr.
Alexandria, LA 71301
Government

BATON ROUGE

Craig S. Hartley, P.E.
LSU
College of Engineering
Baton Rouge, LA 70803
Education

David J. Jessup, P.E.
P.O. Box 14327
Baton Rouge, LA 70898
Private Practice

Michael J. Kinsella, P.E.
9843 Hawthorne
Baton Rouge, LA 70809
Private Practice

John J. Smith, P.E.
15730 Ferrell Rd.
Baton Rouge, LA 70816
Private Practice

J. Don Spencer, P.E.
3613 Sessions Dr.
Baton Rouge, LA 70816
Private Practice

Bryan W. Brabston, Jr., P.E.
6718 Fennwood Dr.
Zachary, LA 70791
Industry

James D. Faber, P.E.
1858 Lombard Dr.
Baton Rouge, LA 70810
Education

Arthur E. Goldman, P.E.
4543 Linstrom
Baton Rouge, LA 70814
Industry

Nicholas W. Hollingshad, P.E.
15438 Jester
Baton Rouge, LA 70816
Industry

Suresh M. Vora, P.E.
11721 N. Oak Hills Pkwy.
Baton Rouge, LA 70810
Industry

James M. Woolley, P.E.
2225 College Dr., #218
Baton Rouge, LA 70808
Construction

Lorraine L. Deslatte
P.O. Box 165
Centerville, LA 70522
Industry

Hollis B. Rushing
P.O. Box 66377
Baton Rouge, LA 70896
Construction

Bert Wilkins, Jr.
10341 Parkview Dr.
Baton Rouge, LA 70815
Private Practice

Donald W. Drone
11764 Pamela Dr.
Baton Rouge, LA 70815
Private Practice

Bryce H. Jones, II
15852 Foxwood
Baton Rouge, LA 70816
Industry

Bernard F. Maloy
1232 Quail Hollow Ave.
Baton Rouge, LA 70810
Private Practice

Rudolph McLellan
5615 Corporate Blvd.
Baton Rouge, LA 70808
Education

Bernard A. Roberts
11888 Longridge Dr., #2106
Baton Rouge, LA 70816
Industry

Simone A. Ardoin
1720 Nicholson #37
Baton Rouge, LA 70802
Government

David B. Elliott
1575 Riverside N.
Baton Rouge, LA 70802
Education

Robert W. Moore
P.O. Box 23
St. Gabriel, LA 70776
Industry

Harry Worrell
11550 Biscayne Dr.
Baton Rouge, LA 70814
Government

BAYOU

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1005 Ninth St.
Houma, LA 70360
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2127 Audubon Dr., #66
Thibodaux, LA 70301
Construction

Jackie L. Todd, P.E.
P.O. Box 5096
Houma, LA 70361
Construction

LAFAYETTE

Craig A. Gautreaux
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New Iberia, LA 70560
Education

John M. Savoy
P.O. Box 907
Eunice, LA 70535
Industry

Murray H. Smith, P.E.
210 Rural St.
Lafayette, LA 70508
Industry

David J. Pierce
3420 Hwy 167 North
Lafayette, LA 70507
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David L. Bourque
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Opelousas, LA 70570
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Behrouz Fathali
P.O. Box 3706
Lafayette, LA 70502
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Ray G. Seidelman, Jr.
120 Dew Berry Dr.
Lafayette, LA 70501
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Wondemagegnehu Teferra, P.E.
P.O. Box 53526
Lafayette, LA 70505
Construction

Glenn P. Thibodeaux
P.O. Box 51388 OCS
Lafayette, LA 70505
Industry

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Lake Charles, LA 70602
Industry

Johnnie S. O'Pry
2520 Darlene
Sulphur, LA 70663
Industry

Robert W. Deville
P.O. Box 1562
Lake Charles, LA 70602
Industry

Steve W. Haralson
P.O. Box 1562
Lake Charles, LA 70602
Industry

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Education

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Monroe, LA 71201
Industry

Ray C. Wimberly, P.E.
LA Tech University
College of Engineering
Ruston, LA 71272
Education

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1604 Crescent Dr.
Monroe, LA 71202
Industry

Christopher G. Humphreys
1502 Lamy Lane
Monroe, LA 71201
Private Practice

Norman T. McLaury, Sr.
3901 Jackson St.
Monroe, LA 71201
Construction

M. Cary Risley
3901 Jackson St.
Monroe, LA 71201
Industry

Laston J. Rose
3901 Jackson St.
Monroe, LA 71201
Construction

Travis S. Bryan
3901 Jackson St.
Monroe, LA 71201

Dorsey W. Byers
105 Fleur De Lis
West Monroe, LA 71291
Private Practice

Joseph D. Kidd, P.E.
212 White Column Dr.
West Monroe, LA 71291
Education

Don L. Olson, P.E.
13 Fair Oaks Dr.
Monroe, LA 71203
Private Practice

Lonnie O. Smith, P.E.
P.O. Box 1762
Monroe, LA 71201

Mitchell B. Sumrall, P.E.
3901 Jackson
Monroe, LA 71202
Private Practice

Ronald E. Unser
Box 1762
Monroe, LA 71201

NEW ORLEANS

Charles J. Arceneaux, Jr.
666 Poydrass Ave.
P. O. Box 61532
New Orleans, LA 70161
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Austin L. Banning
11 James Blvd., Suite 240
Destrehan, LA 70047
Industry

Charles M. Illanne
2350 Park Pl. Apt. 63
Gretna, LA 70053
Industry

Peter E. DeBogory
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Metairie, LA 70005
Private Practice

Michael J. Gross
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Luling, LA 70070
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Dale P. Faucheaux
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New Orleans, LA 70130
Private Practice

Grover B. Grimes
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New Orleans, LA 70130
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Barton W. Harris
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New Orleans, LA 70130
Private Practice

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Metairie, LA 70055
Government

Frank W. Bennett, Jr.
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New Orleans, LA 70153
Construction

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31 McAlister Dr. #5013
New Orleans, LA 70118
Industry

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Continued from page 5

and Land Surveyors is basically in accordance with the registration law requirement but does not require, among other things, an applicant to pass the written examination in the Principles and Practice of Engineering if the applicant is to become registered under the Long Established Practice Provision. The LBR is therefore exercising its perogative given them under the aforementioned LRS No. 37:693 (d).

I therefore propose to the LBR, the LES members, and all engineering and land surveying organizations in Louisiana that you consider a two part solution to this dilemma. (1) Request that the LBR remove its Rule No. 3.3.4.6 from their Rules For Professional Engineers and Professional Land Surveyors, which requires a written examination in the Principles and Practice of Engineering for registration under their Rule No. 3.3.4 for registration on the basis of Long Established Practice. I further propose that once this is done the LES assist the LBR in compiling a list of all companies in Louisiana who are engaged in industrial operations, public utilities and electrical cooperatives and address letters to all of these informing them of the fact that their engineers *may* become registered, if otherwise qualified under the rules of the LBR, without written examination if individual applications are submitted to the LBR on or before December 31, 1984. (2) That the LES sponsor legislation on behalf of the engineering and land surveying professions to eliminate the exemptions contained in LRS 37:701 C and 37:702 (3) (4) and (5) of our registration law, and that such proposed legislation be submitted to the *1985* Regular Session of the Louisiana Legislature.

I would like very much to hear from you concerning this problem and my proposed solutions. Please address your letters to me at the LES State Office, P. O. Box 2683, Baton Rouge, Louisiana 70821.

SEASON'S GREETINGS

On behalf of the LES State and Chapter officers and the State Staff I want to wish each and every one of you, and your loved ones, Our Lord's richest blessings of health, happiness and success for the Holiday Season and throughout 1983!!!

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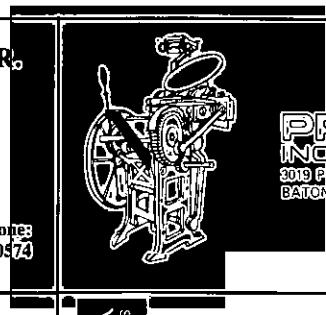

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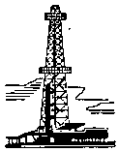

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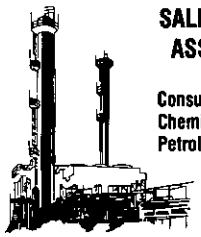

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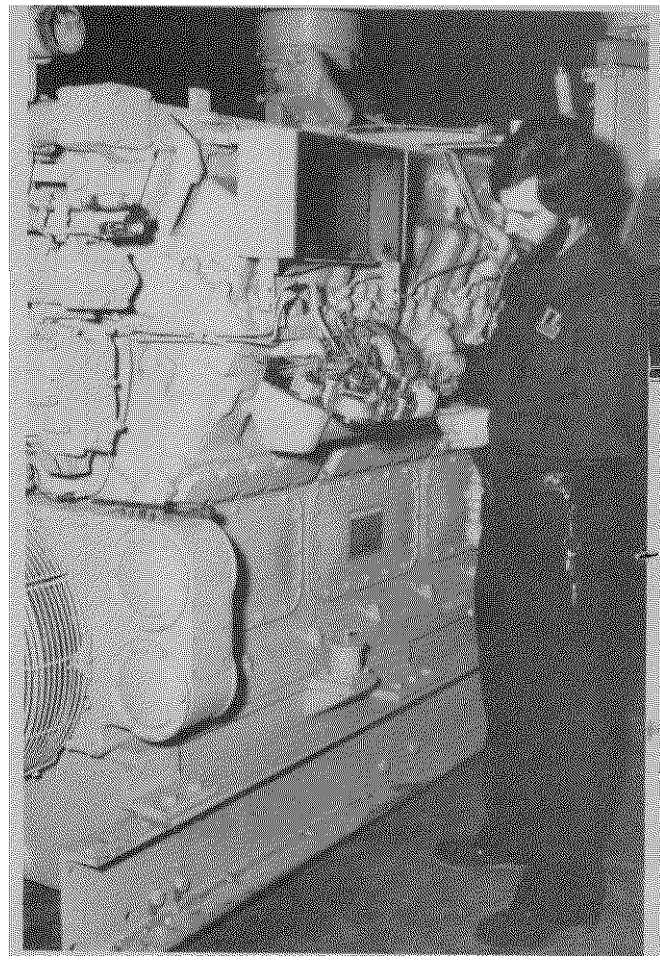

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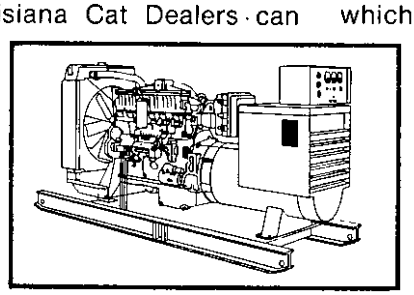

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