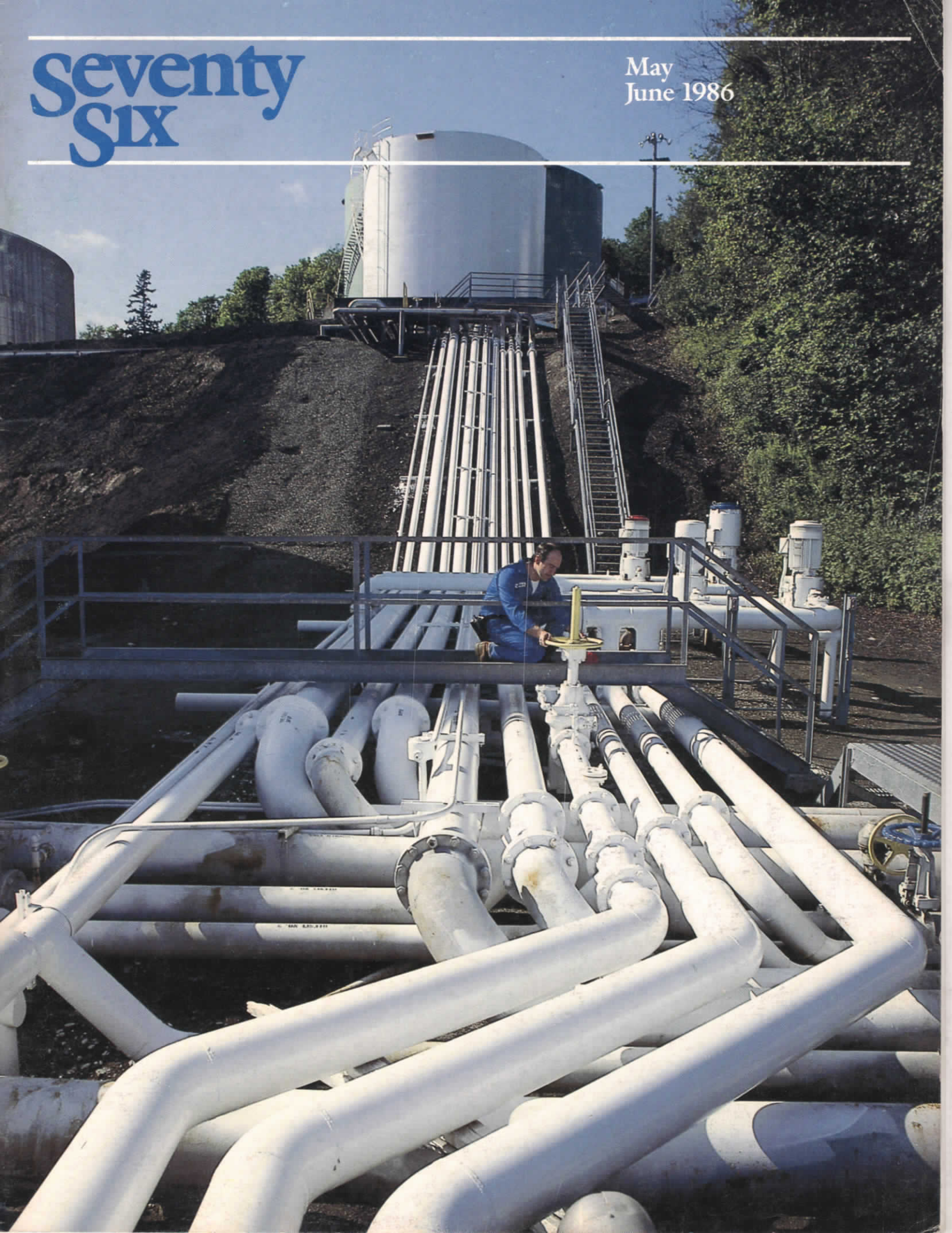
Seventy Six

May
June 1986



A Year of Triumph and Turmoil

1985 was quite a tumultuous year for Unocal Corporation. At the 96th annual shareholders meeting, held at Unocal Center on April 28, Chairman and Chief Executive Officer Fred L. Hartley and Richard J. Stegemeier, the company's new President and Chief Operating Officer, reviewed events of the past year. They also touched on important issues and concerns facing the company now and in the future.

Mr. Hartley spoke first.

Good morning, ladies and gentlemen. Please accept my personal welcome to the 96th annual meeting of Unocal shareholders. It's truly a great pleasure to see so many of you here today.

What a year this has been! Last year at this time, we were in the middle of a hostile takeover attempt, and we were not even sure when our annual meeting would be held. As you may remember, we finally held it on May 13th, under unusual circumstances. As we adjourned, I said that we would all meet again in 1986.

Well, here we are.

We could not have won that takeover battle without the loyal support of our shareholders, the determination and courage of our directors, and the hard work of our dedicated employees. Because of your efforts, Unocal is still an independent and productive earth resources company. Together, we succeeded in protecting the financial rights of our shareholders, the human rights of our employees, and a competitive choice for the consumer. It was a job well done, and I thank all of you from the bottom of my heart.

Of course, we did not come out of the takeover fight unscathed. Our long-term debt rose from just over $1 billion to nearly $6 billion. This increase represented shareholder equity—built up during decades of innovation and hard work—converted into debt. Fortunately, it was distributed to our shareholders. Unfortunately, many who received these funds were not long-term stockholders, they were short-term speculators.

Under this new level of debt, it is necessary to make substantial payments of interest and principal, slowing down our growth. Given today's world of falling oil prices, we must now slow down our growth even more, significantly revising our plans and expectations.

I don't need to stress that, because world crude oil prices have declined by more than 50 percent since the end of 1985, we are once again in a period of turmoil and uncertainty. However, let me assure you that your company is taking the required steps—including capital expenditure cuts, expense reductions and necessary actions to increase productivity—to adjust to this adverse development. We will shortly describe these steps in more detail.

Let me take a few moments to review today's situation. For the third time since 1973, America finds itself in an energy war. The first two—in 1973-74 and 1979-80—were short-lived wars of surging prices and painful shortages, caused by political disruptions in the Middle East.

This new war is different: it is an energy war of attrition, triggered mainly by increased oil production from Saudi Arabia. Since last fall, the Kingdom has more than doubled its production and greatly expanded its use of what are called "netback" pricing deals—deals that protect the buyer against falling product prices.

These actions by the Saudis have had a major impact on oil prices. From last November to this March, the average monthly price of West Texas intermediate crude oil on the U.S. Gulf spot market fell from $30.87 to $12.74 per barrel. Early in April, some of this oil actually traded at less than $10 per barrel.

The motivation of the Saudis and their allies is no mystery. They are determined to regain lost market share, stimulate consumption, drive down non-OPEC production, eliminate competition from energy alternatives, and eventually restore OPEC's power—and their own—to control world oil prices.

This is predatory pricing on an unprecedented scale, and the impact on America is just beginning to be felt and understood. Most major oil companies have now cut their exploration and development budgets by a quarter to a third. U.S. producers are closing down high-cost wells every day. Independent exploration and production companies, drilling contractors, and service and supply firms are losing their markets and struggling to stay alive.

In short, the Saudi plan is working. We can see this in the rapid decline in the number of rigs drilling for oil and gas in the United States. From a peak of 4,530 in December of 1981, it had plunged to a low of 865 last week—and it is still falling fast. Obviously, with fewer rigs searching for oil and gas, U.S. reserve and production levels will fall dramatically.

At the same time, lower prices will stimulate consumption, as motorists buy more gasoline, homeowners burn more heating oil, and heavy industries and electric utilities consume more fuel oil instead of coal and gas.

When we put it all together—declining production, falling reserves, and growing consumption—we see that by 1990, and perhaps earlier, America could be importing well over 50 percent of its petroleum, the highest level in our history. And far higher, I should note, than occurred in the years just prior to the last two energy crises.

Fred L. Hartley and Corporate Secretary Robert O. Hedley

Unocal's Platform Irene was set offshore California last August. Production is expected to peak at 20,000 barrels per day.

The proper federal response to this problem, which I will discuss in more detail later in my comments, is to impose a flexible oil import fee—one that rises when world prices fall, and falls when world prices rise.

Quite clearly, this abrupt price war poses a serious threat to the domestic petroleum industry—and to your company. In today's unpredictable world, your company must become increasingly efficient and productive. We must have the will to cut our costs, to sell unproductive assets, and to learn to do more with less.

One of our top priorities must be to reduce the company's long-term debt, which stood at a peak of $5.63 billion last October. Since then, we have paid down $450 million.

We are also reducing our level of capital and exploration expenditures. In recent years, these expenditures have ranged from about $1.8 billion to $2.1 billion per year. In 1986, we plan to spend about $1.1 billion, 38 percent below last year's level. About three-quarters of this total will be invested in the exploration and production of energy resources.

Obviously, we will continue to revise this budget as necessary, depending on crude oil price developments and the company's cash flow needs.

Starting last fall, we began refinancing our long-term debt to take advantage of falling interest rates. In October, we redeemed for cash the $4.2 billion in senior-secured notes issued in last May's equity-for-debt exchange offer. We refinanced these notes and a previously existing loan with a combination of a floating-rate bank loan and a fixed-rate private placement. This action enabled us to save over $100 million a year in interest costs.

In the last two months, we have converted—through four separate transactions—$660 million of the floating-rate debt to long-term, fixed-rate obligations. Through these transactions, the company has been able to "lock in" this portion of our debt at today's low interest rates, reducing the risk of a later upswing.

At the beginning of the year, nearly 63 percent of our long-term debt was in the form of floating-rate obligations. Today, we have achieved a more desirable balance of approximately 50 percent floating rate and 50 percent fixed rate. The fixed-rate debt has an average interest rate of 9.9 percent; the current average on the floating rate debt is 8 percent. Thus, we have made significant progress in refinancing our debt and in revising our capital and exploration spending plans to deal with the current realities.

Now, I would like to report on the company's first-quarter earnings for 1986. As anticipated, our first-quarter earnings were lower—$70 million versus last year's record level of $181 million. Two major factors were responsible for most of the decline: higher interest costs resulting from last year's takeover attempt and lower worldwide crude oil prices. Together, these two factors reduced first quarter earnings by $103 million out of a total drop of about $110 million.

In addition, earnings were adversely affected by lower natural gas production and lower nitrogen product sales. Partially offsetting these negative factors were higher margins on petroleum product sales and lower administrative expenses.

On a per-share basis, net earnings for the quarter were 60 cents, down 42 percent from last year's first quarter of $1.04, when substantially more shares were outstanding.

Petroleum product sales dipped slightly compared to last year's first quarter. Unocal's net crude oil and condensate production averaged 259,000 barrels per day, up four percent from the same period last year.

Worldwide natural gas production averaged just over one billion cubic feet per day, down 17 percent from 1985's level. Geothermal energy production in the first quarter rose to a new high, averaging 26 million kilowatt-hours per day.

Capital and exploration expenditures for the first quarter were $272 million, compared with $399 million in 1985 (exclusive of the $140 million pipeline investment). This decline reflected our early efforts to tighten up on spending as crude oil prices started to fall in January.

Now, let me return to an issue I discussed earlier this morning: the consequences of falling oil prices and rising oil imports.

Oil is a strategic commodity. Without it, our economy cannot function and our military cannot defend us. And without a strong domestic petroleum industry, our country will soon become dangerously dependent on foreign sources of supply.

America needs a farsighted and consistent national energy policy. Our policy makers must look beyond today's headlines and next fall's elections. Does it make sense for our government to levy punishing taxes on the petroleum industry when prices rise, then leave it to struggle when foreign interests launch a predatory price war?

It may not make any sense, but that is exactly what is happening. In fact, through 1985, Unocal alone had paid $1.7 billion in windfall profit tax. All together, the petroleum industry has paid more than $60 billion.

Yet today, several months after crude oil prices began to collapse, our government has done nothing to alleviate the growing crisis in the industry—and the growing threat to the country.

If America is to escape a serious energy crisis in the years ahead, Washington must act promptly. First and most important, we need to establish a flexible security import fee to be levied —without exception—on all imported crude oil, refined products and petroleum-based chemicals.

In testimony before the U.S. Senate Energy Committee, I called for such a fee to create a floor price high enough to support continued domestic exploration and development, but low enough to provide gasoline and other products to consumers at prices they were paying just a few months ago. This fee would be based on a sliding scale—the higher the price of imported oil, the lower the fee. At a price of, say, $27 per barrel, no fee would be collected.

Some policy makers, including several members of the current administration, oppose an import fee on the grounds that it would interfere with the "free market." I find this thinking difficult to understand. We do not have a truly free market for oil and gas in this country, and I doubt if we ever will.

It is also time to repeal the windfall profit tax, as President Reagan recently proposed. At today's low prices, this tax no longer generates revenues for the treasury. And when prices go up, it would only serve to further punish an already weakened industry.

I want to emphasize, however, that abolishing the windfall profit tax—although a useful, long-term step—will do nothing to avert today's threat to the domestic petroleum industry or to the nation's energy security.

Equally important, Congress should strike the provisions in its proposed new tax bill that would raise the industry's taxes by billions of dollars—at the very time revenues are dropping by several times that amount.

Moreover, it only makes good sense in today's world to fully decontrol all well-head natural gas prices. I was encouraged to see that President Reagan called for decontrol just last week. We need policies that allow the market to develop and distribute this important fuel in rational ways at reasonable costs and with fairness to all producers, transporters and consumers.

It also makes good sense to continue filling the Strategic Petroleum Reserve, especially at today's bargain-basement prices. The current target of 500 million barrels represents just a few months' supply at today's relatively low import rates—totally inadequate in the event of a serious disruption.

Finally, we must continue to develop new and improved ways to find and produce both conventional and alternative energy resources. Some shortsighted policy makers believe that because of today's low oil prices, any effort to develop synthetic petroleum from shale and coal—as well as other alternative forms of energy—is unnecessary and wasteful. They even believe that proven techniques for finding and producing oil and gas from frontier areas like Alaska and deep, offshore waters are not worth the investment. This kind of thinking plays right into OPEC's hands.

Recent events suggest that some of our policy makers may be waking up to the dangers. Some authorities and several major newspapers have begun to warn the country about the long-term cost of low-priced oil. And both the president and the vice president have publicly voiced concerns about the true implications of this price war.

I will do all in my power to help this educational process, and I hope all of you share my concern and commitment. Let the president and your congressmen know where you stand, particularly concerning the need for an oil import fee. To a significant extent, the strength, stability and security of America's economy in the decades ahead depend on the oil and gas that is discovered in the next five or ten years.

Despite today's low oil prices, we look to the future with confidence. Sooner or later, prices will right themselves. When it happens, we will be well-positioned for rapid growth. Until it happens, we will respond to the changing marketplace quickly, efficiently and creatively.

Once again, please accept my personal gratitude for the strong and continuing support you have given your board and your management during this difficult time.

Thank you.

Mr. Stegemeier's remarks:

I would also like to extend my personal welcome to all of you who are here today.

This morning, I plan to briefly review the company's operations in 1985, as well as the highlights of 1986's first quarter. But first I'd like to describe some of the operational steps we're taking to adjust to the sudden fall in crude oil prices.

In all of our operating divisions, we are seeking ways to cut costs, increase productivity, and curtail capital expenditures. In addition, we are finding ways to do more with less. As an example, in Thailand, we've now cut drilling costs more than 50 percent per well through improvements in drilling fluids, drill bits and other factors. In Indonesia, costs have been cut 40 percent per well, and similar efficiencies have been achieved in the North Sea.

We have also been reviewing our other operations, including all of the company's domestic oil wells—about 6,200 in total. In California and the central region, we have now shut in 425 high-cost wells. These wells had been producing about 2,100 barrels of crude oil per day, less than two percent of the company's domestic daily production.

Last February, because of very low molybdenum prices, we stopped production at our molybdenum mine near Questa, New Mexico. Our molybdenum sulfide ore roasting plant in Pennsylvania has also been shut down.

Also in February, we instituted a company-wide hiring freeze. We have also announced a voluntary, improved early retirement program for many of our employees who are age 55 or older by June 30.

Richard J. Stegemeier

In 1985, the company's Refining & Marketing Division continued to upgrade facilities and strengthen operations.

I think it's worth stressing that despite the challenges of a hostile takeover attempt followed by a crude price war, Unocal continues to be a productive and innovative earth resources company. We are determined to move ahead in 1986, building on our strengths in several key areas.

According to a recent study by Arthur Andersen, Unocal achieved the third lowest finding cost for new oil and gas discovered by a major company in the United States from 1980 through 1984. On a worldwide basis, we had the fourth lowest finding cost of any major company.

In 1985, we continued this strong record, replacing all of our oil production with new reserves for the second consecutive year. The company's net crude oil and condensate production averaged over 251,000 barrels a day last year, up seven percent from 1984. This represents our fourth consecutive year of production increases. Domestic output has held steady, while foreign production has achieved consistent growth.

Net natural gas production in 1985 averaged 1.1 billion cubic feet per day, the second consecutive year of production increases. Domestic production, however, has declined somewhat, reflecting the overall decline in demand for U.S. natural gas.

The company's total energy production—oil, gas and geothermal—climbed to nearly 500,000 barrels a day, crude oil equivalent in 1985. Unocal's geothermal energy production equals about 35,600 barrels of oil per day.

Net crude oil and condensate reserves rose to 751 million barrels at the end of 1985, a 4.5-percent increase over the previous year. Although worldwide natural gas reserves were down slightly in 1985, the company's total crude oil, natural gas and geothermal reserves on an energy-equivalent basis rose by 28 million barrels last year. Our geothermal reserves alone are equal to more than 300 million barrels of crude oil.

Last year, Unocal's Oil & Gas Division in the United States made 11 significant oil or gas discoveries, while successfully completing several major development projects. Offshore California, Platform Irene was set in the Santa Maria basin—the first platform set in what is called the "Sale 53 Area." Production is expected to peak at 20,000 barrels a day. Unocal, which serves as operator, holds a one-third interest in this block.

Unocal also discovered new oil and gas fields at northwest Lompoc, on fee land in which the company holds a 100-percent interest; and at the Hueneme block to the south. At Hueneme, the well tested at 365 barrels of oil and 5.8 million cubic feet of gas per day from two different formations. Additional drilling is planned to fully delineate this discovery.

In Alaska's Cook Inlet, Unocal will participate later this year in the installation of a new drilling and production platform, called "Steelhead." Located about 45 miles southwest of Anchorage, this facility will eventually supply gas to the company's chemical plant in Kenai. We expect natural gas production to peak at 160 million cubic feet per day in 1987. Oil production will peak at 6,000 barrels per day two years later. Unocal holds about a one-half interest in the project.

Moving north to the Beaufort Sea, we completed the industry's first well from a drill ship in the offshore area of Camden Bay in 1985. This summer, an exploration well will be drilled on another prospect in this area. It will be the second exploration well to be drilled on our Camden Bay leases, in which we acquired interests ranging from 25 to 100 percent in 1984.

To the west, at Endicott, where we hold a 12-percent interest, development drilling of an earlier discovery started in mid-April. Further to the west, development drilling of the Kuparuk field—where we hold a 4.5-percent interest—continues at a reduced level. Our share of the field's production currently averages nearly 11,000 barrels per day.

On April 3, we announced a new oil discovery in Howard County, Texas, part of the company's central region. The discovery well flowed at a rate of 554 barrels of oil and 1.35 million cubic feet of gas per day.

Heavy oil production in central California currently contributes about 15 percent of the company's total net domestic production. Enhanced oil recovery projects add another 11 percent.

In August of last year, the company created a new master limited partnership—Union Exploration Partners, or UXP for short. UXP holds substantially all of the company's oil and gas exploration, development and production assets in the Gulf region, which stretches from Texas along the south and east coasts to Maine.

The sale of UXP units to individual investors raised $172 million for the company, net of all expenses. In addition, the creation of the partnership increases our financial flexibility for the future.

Unocal currently owns about 95 percent of all UXP units issued. Union Oil Company of California, our wholly owned subsidiary, is UXP's managing general partner.

In recent years, the company has significantly expanded its domestic inventory of exploration properties, resulting in the largest inventory of exploratory acreage we've ever held in the Gulf region—more than 1.3 million gross acres. These properties, including some in the Gulf's most prospective areas, are now held by UXP.

The company made eight oil and gas discoveries last year in the Gulf region, including two offshore Louisiana and one in the highly prospective Mobile Bay area. The light blue regions indicate areas of major exploration activity. The Green Canyon discovery tested at 7.9 million cubic feet of gas and 407 barrels of condensate per day. UXP holds a 50-percent interest in the well and block.

This morning, we are announcing a new gas discovery on the North Padre Island block, 38 miles south of Corpus Christi, Texas. The wildcat well flowed at a rate of two million cubic feet of gas per day. UXP holds a 50-percent interest in the well and block.

In the Mobile Bay area, where UXP is the second largest leaseholder, a discovery well tested at 11 million cubic feet of gas per day. UXP holds a 25-percent interest in the well and block. Another exploration well is planned for later this year in the same area.

Above, processing facilities at UXP's Chunchula natural gas field in Alabama. Below, a platform complex in the Attaka field, offshore East Kalimantan, Indonesia. New discoveries added more than 24 million gross barrels of crude reserves to the field last year.

To the north, exploration drilling is now underway on a different block. Northwest of the city of Mobile, UXP's Chunchula field contains the largest onshore hydrocarbon reservoir yet discovered in Alabama. The Chunchula gas processing facility treated more than 12 billion cubic feet of gas and 3.9 million barrels of condensate last year.

Unocal's foreign exploration and production activities were highlighted by new oil and gas discoveries in Indonesia, Canada and the North Sea, and by continued expansion of operations in several other countries, including the Netherlands and Thailand.

Last year, Unocal more than doubled the productive capacity of its natural gas and condensate fields in the Gulf of Thailand. Currently, the company's four fields are producing about 335 million cubic feet of gas and 16,000 barrels of condensate per day.

With the addition of the Platong and Satun fields, Unocal can now supply about 30 percent of Thailand's total commercial energy requirements. Half of Thailand's electricity is now generated by burning gas from Unocal's fields.

The company's Indonesian operations confirmed significant discoveries of new oil and gas reserves in the Attaka field, offshore East Kalimantan. As a result, we added more than 24 million gross barrels of crude reserves to the field last year. Continuing delineation and development work is expected to substantially increase reserves again in 1986.

The Attaka field, discovered in 1970, has now produced nearly 400 million barrels of oil and significant volumes of natural gas.

Offshore the Netherlands, an extension platform in the Helder field is expected to begin production this summer, averaging 3,200 barrels per day for the rest of the year. In September, a new gas field 50 miles to the north in the L/11 block will be put on production. It is expected to produce about 30 million cubic feet of gas per day.

Offshore Norway in the Veslefrikk field, where we hold a 30-percent interest, a successful appraisal well tested at a combined rate of more than 31,000 barrels of oil per day from two zones. Unocal is now assisting Statoil, the Norwegian national company, in evaluating the development potential of this field.

To the west in the U.K. sector of the North Sea is the Unocal-operated Heather field, which came on production in 1978 and currently produces more than 22,000 barrels of oil per day. We have a 31.25-percent interest in this field.

Last month, we signed an agreement with the People's Republic of China to conduct petroleum exploration in the Pearl River mouth basin of the South China Sea. Along with two co-venturers, Unocal will participate in about 1,000 miles of seismic surveys during the next six months and spud an exploratory well by April 1987. Unocal holds a 35-percent interest in this contract area.

In Canada, Unocal's net crude oil and condensate production rose for the fourth consecutive year to 14,700 barrels per day in 1985. We've made 17 new oil and gas discoveries since the beginning of 1985; nine of them were made in the first quarter of this year alone. Since last year, we've drilled 10 development wells in the Slave field, which is one of our more productive Canadian properties.

Unocal's Obed Thermal Coal Mine shipped 800,000 tons of coal during its first full year of operation. During the first quarter of 1986, the mine shipped 357,000 tons.

Unocal is the world's largest producer of geothermal energy. At The Geysers in northern California, we can now produce enough geothermal power to meet the electricity needs for the entire cities of San Francisco and Oakland.

Unocal's Geothermal Division continues to perform well. Energy production rose 33 percent in 1985 to an average of 24 million kilowatt-hours per day. Part of this increase stems from the acquisition of an additional share in The Geysers field in 1984.

This is the seventh consecutive year of worldwide production increases for the division. Unocal's geothermal operations now produce the energy equivalent of 13 million barrels of crude oil per year.

In the Philippines, we continue to supply steam for 160,000 kilowatts of generating capacity—about 30 percent of the electricity needs of the main island of Luzon, which includes Manila. As a matter of interest, the recent political events in that country did not disturb our geothermal operations in any significant way. Today, we are looking forward to continuing our long and mutually beneficial relationship with the National Power Company of the Philippines.

In 1985, the company's Refining & Marketing Division continued to upgrade facilities and strengthen operations. Sales of refined petroleum products rose by more than four percent, the third consecutive year of sales increases.

Last year, Unocal completed a coker replacement at our San Francisco refinery, boosting capacity by 24 percent. A project to modify the existing coker facilities at Santa Maria will be completed by the end of June. These projects will increase Unocal's capacity to receive new offshore crude production and to convert California's heavy crude oils into high-value feedstocks.

A new crude unit and a new 49-megawatt cogeneration facility, under construction at San Francisco, will be completed next year. The new crude unit replaces a 50-year-old facility and will reduce operating costs by about 20 percent. The cogeneration plant, designed to provide most of the refinery's steam and electrical power now being supplied by a public utility, is expected to pay for itself within six years.

Recent policy changes initiated by the Environmental Protection Agency sharply reduce the amount of lead that can be used to improve gasoline octane. In response, Unocal is building two 7,400-barrel-per-day isomerization units— one at San Francisco, the other at Chicago. These facilities, due to come on stream next year, will boost the octane of light blending stocks so we can produce and sell 100-percent lead-free gasoline in the future.

Last year, we substantially increased our stake in two important petroleum pipeline systems—the Colonial Pipeline Company (where we now own about 21 percent) and the West Texas Gulf Pipeline (where we now hold about 26 percent).

Despite a highly competitive marketplace, Unocal increased gasoline sales by 4.5 percent last year, nearly three times the industry average increase. Higher sales volumes improve utilization of our refinery and terminal systems.

As a result, the company's refineries operated at 76 percent of crude capacity last year, up from 72 percent in 1984, even though our Chicago refinery was not operational in the first quarter. Currently, they are operating at 84 percent of crude capacity.

In our eastern marketing region, the company continued to convert conventional gasoline stations into self-serve/convenience stores. And in the west, we added 22 self-serve outlets, while completing several new "super facility" stations which have more pump islands and service bays than traditional stations.

On the chemicals side, the company's new needle coker at the Chicago refinery is now in full operation. It produces a premium, crystalline petroleum coke of extremely high purity that is used to make graphite electrodes needed in the production of steel in electric arc furnaces.

In 1985, the company began full-scale marketing of its new UNIPURE technology—a patented procedure for removing heavy metals from industrial waste water. Six licenses for UNIPURE were issued last year, and sales are expected to increase significantly in 1986.

By the end of the year, the company expects to begin test marketing an ecologically safe nematicide. Developed by the Science & Technology Division, this new product kills nematodes—tiny parasites that cause billions of dollars' worth of damage to crops every year. Unlike other nematicides in current use, Unocal's product poses no risk of contaminating ground water or the plants it protects.

Our Molycorp subsidiary is the world's largest producer of lanthanides —sometimes called "rare earths"— which are used in a wide range of products, including catalysts and consumer electronics. We expect an expanding market for lanthanides as new uses are developed.

In 1985, we formed a joint venture with a Canadian and a Japanese company to produce yttrium concentrate in Canada. Production is slated to begin late this year. Yttrium is used in several growing markets, including computer monitors, high-energy lasers and automobile electronics.

Development work continues at the company's shale oil mining and retorting facility near Parachute Creek, Colorado. While a series of start-up operations last year proved that the mine, retort and upgrade facilities will produce syncrude, continuous cooling of the hot, spent shale remains a problem. Earlier this month, we completed modifications to the shaft cooler that we believe will improve its reliability and effectiveness. Start-up operations to test this latest modification have just begun.

At Unocal, we have long believed that research and innovation are the keys to continued growth. In 1985, Unocal researchers in our Science & Technology Division filed 105 U.S. patent applications—a record for the company—and were granted 69 patents, the highest number we've received in a single year since 1972. These patents were issued for new developments in refinery catalysts and processes, shale oil retorting and refining, fertilizers, herbicides, geothermal technology, and several other areas.

Top: Unocal PLUS, a new plant nutrient developed by the company, is applied to crops. Below, a view of the Chicago refinery's new needle coker.

Unocal now holds more than 1,000 active patents. Our technology was licensed for use in six more refining plants in 1985. As a result of the company's long-term investment in research and development, we continue to grant 10 process licenses for every license taken—a clear demonstration of our technological leadership.

Research continues in a broad range of scientific and technological areas, including the use of a high-power laser to study gasoline and diesel fuel combustion. In 1985, company scientists at the Fred L. Hartley Research Center developed several new operational tools for use in enhanced oil recovery projects, and 18 improved lubricants for industrial and automotive use.

Earlier this year, the company began using a patented process to produce a liquid, high-purity urea—the first commercial production of such a product in the United States. Called "Unocal PLUS," this new product is a plant nutrient that can be sprayed on leaves without damage.

Unocal PLUS enjoys a ready market, because it provides a faster way to deliver nutrients to plants than soil application does. We've added a production plant for this product at our ammonia and urea manufacturing complex in Brea, California.

As this review suggests, Unocal's operations are diverse and strong. Unocal is not just a petroleum exploration and production company. Our refining and marketing operation is modern and efficient; our highly productive geothermal division has excellent, long-term potential; our chemicals business is well positioned in a variety of markets; and our research group is one of the industry's most creative.

Thank you. 76

VANCOUVER HOSTS THE WORLD

For Unocal Chairman Fred L. Hartley and the other dignitaries assembled at Expo 86's U.S. Plaza, it was a sweet moment indeed. After years of planning, construction, and anticipation, Canada's long-awaited world's fair in Vancouver, British Columbia was at last approaching opening day. And the four structures adjacent to U.S. Plaza—the United States, California, Oregon and Washington pavilions—were ready to open their doors and welcome the world.

While the stream of guests and media representatives arrived, a U.S. Navy band from Seattle blared out a rousing rendition of "Anchors Aweigh." As if on cue, the sun emerged from behind a blanket of Pacific Northwest rain clouds.

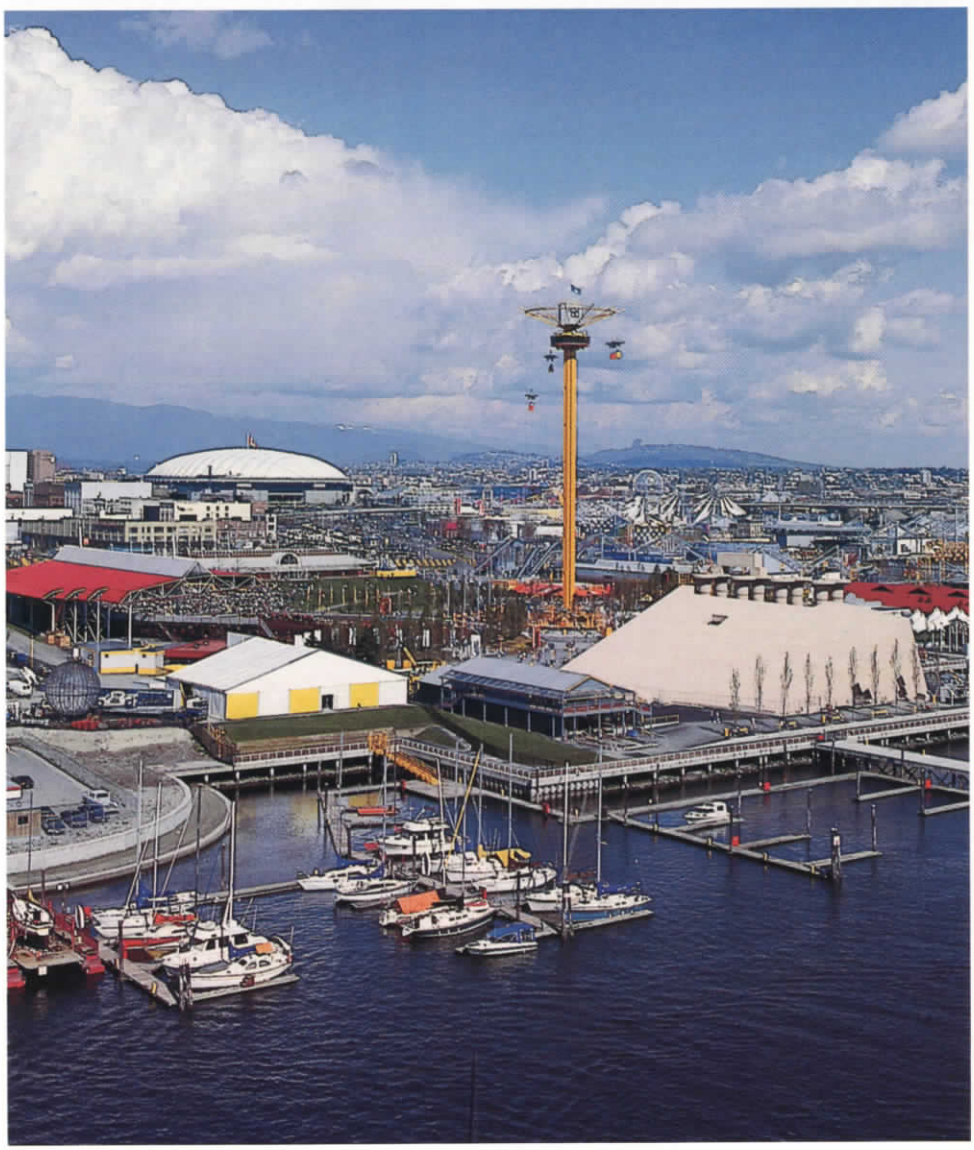
"Ladies and gentlemen, welcome to United States Plaza," said Patrick Reid, Expo 86 Commissioner General, as the band finished up with a flourish. "I'd like to start out by thanking Mr. Hartley and his fellow Californians for bringing along this lovely weather. We might just keep it for the duration of Expo."

The audience erupted in laughter and applause.

The date was April 30, and the occasion was the dedication of U.S. Plaza and its four pavilions at Expo 86. Serving as Commissioner General to the U.S. Pavilion and U.S. Ambassador to Expo 86, Mr. Hartley was in Vancouver to participate in the dedication and attend Expo's official opening ceremonies held on May 2. A few days later, he joined California Governor George Deukmejian and other state officials in welcoming Prince Charles and Princess Diana of Wales during their visit to the California pavilion.

A full eight years in the making, Expo 86 is one of the largest world expositions of its type ever held in North

Covering 173 waterfront acres in the heart of Vancouver, Expo 86 is one of the largest world expositions of its type ever held in North America. Fifty-four nations are represented at the fair, as well as more than 30 corporations.



America. Fifty-four nations are represented, along with some 30 corporate participants. The Vancouver fair also marks the first time in North America that the USSR, China and the United States have all participated in an exhibition.

The theme of Expo 86 is "World in Motion, World in Touch," showcasing international advances and achievements in transportation and communications technology. Housed in colorful, stylized pavilions, exhibits from around the world pay tribute to the past as well as the present and future. They run from the futuristic (such as Japan's working prototype of a magnetic levitation train) to the whimsical (a sprawling outdoor sculpture called "Highway 86" depicts an international traffic jam of over 200 vehicles—from rickshaws and scooters to trucks, boats, and aircraft).

The Expo site is spread out over 173 waterfront acres in the heart of Vancouver. A lovely coastal city of 410,000 set against a backdrop of snow-capped mountains, Vancouver is celebrating its centennial this year. The residents are proud and excited to be playing host to the world this summer—and the guest list is swelling. Officials expect more than 15 million visits to Expo during its 5 1/2-month run from May to mid-October.

The city is well prepared to handle the influx. A network of monorails, sky rides and people-movers has been constructed to help move visitors around the site, which is three times the size of Disneyland. And Vancouver's brand new rapid transit system, dubbed "SkyTrain," connects the main site with the large Canada pavilion—a permanent structure located across the city on the harbor front.

In addition to a multitude of exhibits, films and multimedia presentations in the pavilions, Expo 86 offers fairgoers a variety of artistic and cultural displays. The Peru pavilion, for example, features the largest collection of Peruvian gold artifacts in the world. And the Great Hall of Ramses II has on display more than 80 artifacts from the Egyptian emperor's reign.

The fair is also hosting over 200 conferences during 14 "specialized periods" that focus on issues related to transportation and communication. Ranging in length from five days to two weeks, these "mini-expos" bring together experts and special exhibits from around the world. Among the topics being addressed are urban transit, search and rescue, communications and mobility for the elderly and disabled, alternative fuel and power systems, and polar transportation and communication.

Clockwise from top, right: Japan's HSST magnetic levitation train, view of a portion of the main fair site, Mr. Hartley addresses guests at the U.S. Plaza dedication.

In addition, more than 100 special events scheduled during Expo's run will revolve around the transportation theme. Among these are a Tall Ship and Naval Armada—the largest armada of steam, sail and human-powered sailing vessels ever assembled on the west coast; a DC-3 "Airmada," in which a squadron of 60 vintage DC-3s will take to the skies; and a gathering of 30 antique (but still operative) steam locomotives.

Expo also boasts virtual non-stop entertainment, with more than 14,000 performances scheduled. The offerings cover a broad spectrum of international talent, from the Soviet Kirov Dance Company to big-name rock bands, comedians and theater companies from around the world.

But as in all world's fairs, it's the pavilions that draw the most interest. Fairgoers at Expo 86 will have more than 80 of them to choose from. Some are worth the $15 (Canadian) Expo admission price in themselves.

Expo Center, the visually arresting centerpiece of the fair, is a 17-story geodesic dome that houses an OMNIMAX theater. Here visitors can view a Canadian-produced film focusing on transportation, with dazzling footage of everything from planes and trains to rockets and dog sleds projected on a huge hemispherical screen. The Canada pavilion offers another unique large-screen film experience—a 3-D IMAX movie, the only one of its kind ever produced.

At the Japan pavilion, visitors can ride on a working prototype of the HSST (High Speed Surface Transport)—a frictionless magnetic levitation train capable of traveling over 190 m.p.h. (Have no fear—it only throttles up to 25 m.p.h. at Expo.)

China has on display actual bricks from the Great Wall (which visitors are allowed to touch), as well as a full-scale model of a 2,000-year-old bronze chariot. The USSR exhibit features a 108-foot-long, walk-through model of the Soyuz-Salut space laboratory complex. And the United States pavilion takes visitors on a journey that traces the evolution of the U.S. space program, ending with a visit to a futuristic space station.

California's pavilion—in which Unocal co-sponsors an exhibit—is also bound to be popular with Expo visitors. Its theme is "California—Creating the Future." The 25 exhibits in the 12,000-square-foot pavilion are designed to showcase California as a world innovator in developing communications, transportation and other vital technologies.

Staffed by 35 young hosts drawn from around the state, the pavilion itself

Above, Mr. Hartley tours the California pavilion. Right, fairgoers check out the Unocal/PG&E exhibit in the pavilion. Below, two sections of the sprawling outdoor sculpture "Highway 86." Facing page: Over 60,000 spectators were on hand for Expo's gala opening ceremonies.

boasts a remarkably innovative feature: the floor is covered with a network of zinc strips which serve as a power grid. This eliminates the need for outlets and electric cables.

Exhibits in the California pavilion touch on a wide spectrum of advanced technology. Foremost among them are the state's contributions to space exploration. The five-ton Apollo 14 command module is on display—the only authentic spacecraft at the fair. Used in the 1971 moon voyage of astronauts Alan Shepard, Stuart A. Roosa and Edgar D. Mitchell, the capsule was built in California at Rockwell International's Downey facility.

Accompanying the exhibit is a video presentation about the Apollo project. A chunk of moon rock brought back by Apollo 14 is also on display, as are models of the the Space Telescope, the Uranus Probe and Galileo Deep Space Probe—all currently in the design phase at various California laboratories.

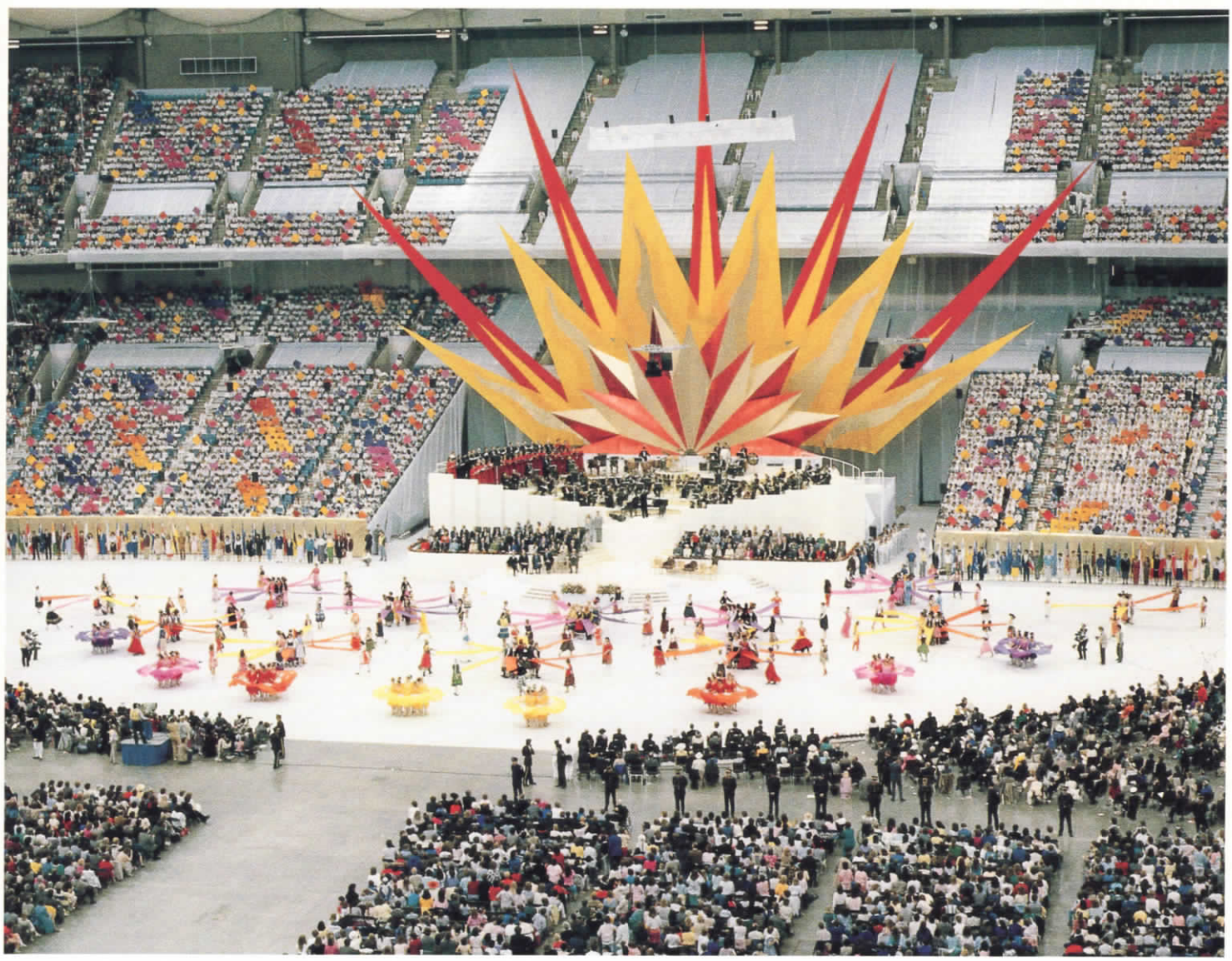
The pavilion also has its own computerized weather station that picks up satellite signals via a 12-foot dish on the roof. Video monitors display the live, color-enhanced satellite pictures, which show current weather conditions over North and South America.

Other exhibits include aircraft engines and automobile prototypes of the future, a behind-the-scenes look at how computerized special effects for movies and TV are produced, and a "fantasy theater" which takes visitors on a six-minute spaceship ride over 12 distinct regions of California. This film was put together by the special effects wizards of Universal Studios.

Unocal's exhibit, while a bit more down to earth, is no less captivating to those interested in technological innovation. Co-sponsored by Unocal with Pacific Gas & Electric, the multimedia presentation demonstrates how cost-efficient geothermal resources help to keep things moving in California.

Designed by the firm of Fiori and Panas and built by Design Models, Inc., the exhibit tracks steam energy from its origins beneath the earth's crust through development and production, and ultimately to the powering of San Francisco's street lights and cable cars.

The story is told through a combination of display panels, videos, and a moving three-dimensional model. The exhibit's first segment explains how Unocal probes the earth for natural steam, drilling wells to tap the geothermal energy source. Next, a video sequence shows how the steam is captured at The Geysers field in Northern California, and explains how it is used to generate



electricity by powering huge turbines at PG&E plants.

The final part of the exhibit features a colorful scale model of downtown San Francisco. Here, street lights and a miniature moving cable car are "powered" by the steam-produced electricity.

In addition to graphically illustrating how geothermal energy is developed and used, the exhibit points out that Northern California's geothermal fields generate enough natural steam energy to satisfy the total energy needs of the cities of San Francisco and Oakland combined. (Indeed, 15 percent of PG&E power is now produced by geothermal resources.)

The California pavilion's $3.5 million budget was jointly funded by the state and the private sector. In order to win matching funds from the state, more than $1 million had to be raised from California's business community. Unocal's Chairman Fred L. Hartley was instrumental in assuring the success of the fund-raising drive, helping win support from more than 100 businesses throughout the state.

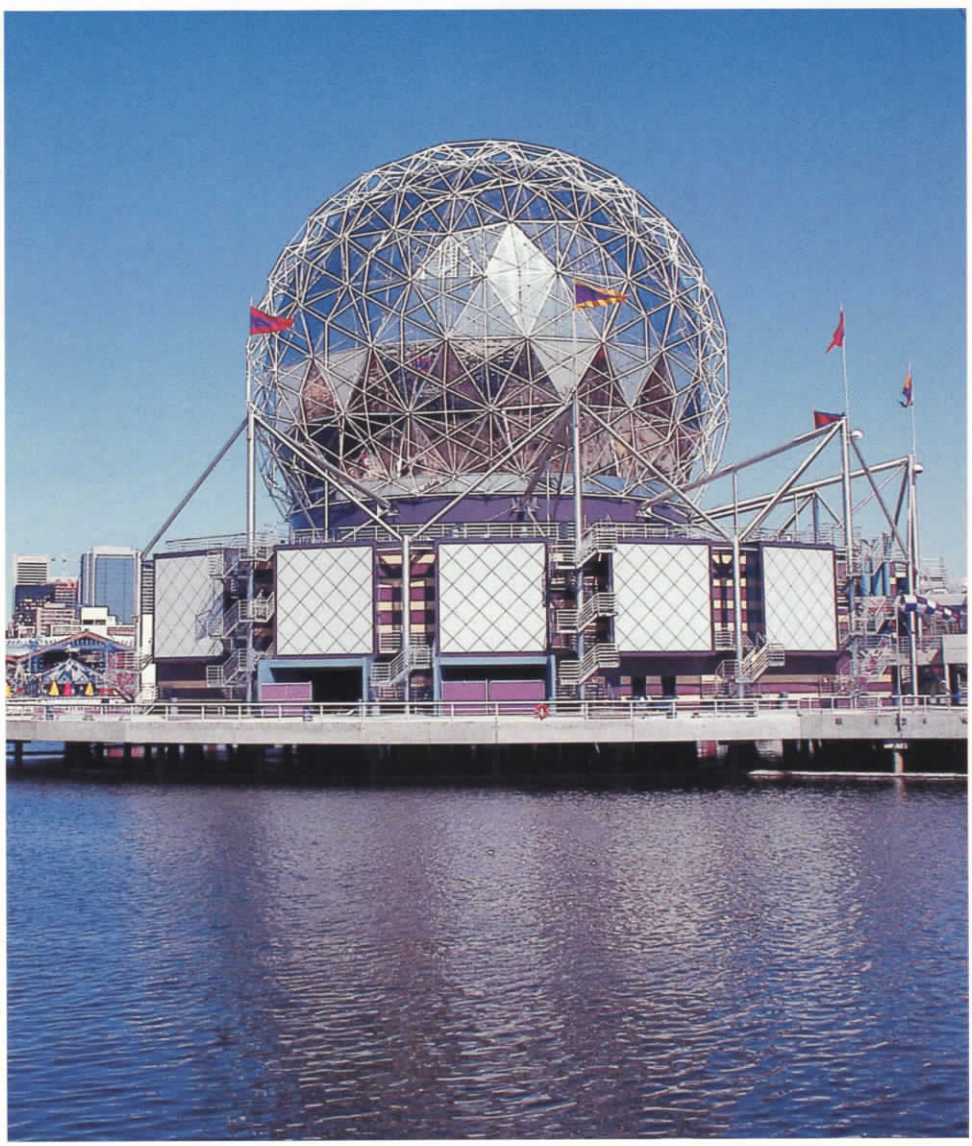
According to Hartley, raising the needed funds was not an easy task.

"At first we were greeted with a largely negative attitude," he explains. "We had to convince people that Expo 86 was going to be a first-class world's fair. And we had to emphasize that there was a real need for California to participate. The state is one of Canada's biggest trading partners."

Last November, just a scant 5½ months before Expo was set to open, the necessary funds were finally raised. The state followed through with its share, and the go-ahead was given to begin work on a California pavilion. The job—from conceptualization through design and construction— was completed on time and on budget. Private and public teamwork succeeded in making the pavilion a reality.

So, it was with more than a little satisfaction that Fred Hartley and the other dignitaries presided over the official dedication of U.S. Plaza on April 30, two days before Expo's official opening. Among the speakers at the event, which included a ribbon-cutting ceremony and reception, were Patrick Reid, Expo 86 Commissioner General; Jim Pattison, Expo 86 Chairman; Thomas R. Niles, U.S. Ambassador to Canada; John T. Hay, California Commissioner; Robert L. Stevens, Oregon Commissioner; Senator H.A. Goltz, Washington Commissioner; and Mr. Hartley.

"This moment is very special because of the special relationship between



Above, Prince Charles and Princess Diana tour the Expo site. Right, the towering geodesic dome of Expo Center.

Canada and the United States," said Reid, the event's first speaker. "The U.S. participation here is symbolic of the comradeship and spirit that exist between our two nations."

In commenting on the evolution of the California pavilion, Hay noted that one of the goals was to portray California as a "state of mind."

"We've tried to show that Californians possess a very singular state of mind—one that has conceived and designed a host of communications and transportation advances over the years," he said. "And we've tried to demonstrate that this pioneering state of mind is continuing. California is now helping to create the future."

Hay also noted that the pavilion project had come a long way in a very short time. "And that's due in large measure to the vision, help and tenacity of Unocal's Fred Hartley."

In greeting the crowd moments later, Hartley noted that his visit to Expo had a special personal meaning. As a University of British Columbia graduate who grew up in the Vancouver area, the occasion was a true homecoming. "After all," he told the assemblage, "I was born only about a mile from here.

"The two pavilions I've been directly involved with—U.S. and California—celebrate results," Hartley went on to say. "And they themselves are the result of a lot of careful planning, hard work, and dedication on the part of many people. Both pavilions tell an exciting story—a story of technological achievement and diversity, a story we tell with pride and enthusiasm. I'm delighted to be here for their unveiling."

Two days later, on May 2, over 60,000 people crowded into nearby British Columbia Stadium for Expo 86's official opening ceremonies. Among the dignitaries present were Canadian Prime Minister Brian Mulroney, and Prince Charles and Princess Diana of Wales.

"Expo's themes of transportation and communication are truly fitting and appropriate," said Prince Charles in his opening proclamation. "The themes are important to the international community in that they bring all humanity closer together. And they serve to remind us of the richness and diversity of our cultures and scientific developments.

"Diana and I have the greatest pleasure in declaring Expo 86 officially open." *T.S.* (76)

For information on Expo, write: Expo 86, Box 1800, Station A, Vancouver, British Columbia, Canada V6C 3A2.

More than 15 million visits are anticipated at Expo 86, which runs through October 15. The city of Vancouver is well prepared to handle the influx.

YOUR WORLD:

a personal view

How do you view your world? More than 120 camera buffs answered that question as participants in Seventy Six*'s sixth annual photo contest. The result: nearly 300 entries that showed diverse outlooks on life.*

Prints and slides arrived from all over the U.S., as well as from Thailand, Indonesia and the Philippines. People interpreted their surroundings using a multitude of styles, their pictures capturing everything from family gatherings to a chance-in-a-lifetime view of Halley's Comet.

Although many of the entries portrayed great scenic beauty, the judges were searching for more than a pretty sunset. Professional photographers Starlene Frontino, Bob Witkowski and Larry Lee (a judge in last year's contest) sought pictures that expressed the photographers' personal feelings with skill and sensitivity.

Caving in Paradise
Bob Richards

"Everything works," the judges concluded about this year's grand prize winner. "The photographer searched for the situation, then created the shot to express his personal viewpoint. Technically, it took lots of effort to make these elements come together. This was an unpredictable and difficult shot."

"Cave photography is a lot of hit and miss," agrees Bob Richards, geological draftsman for International Oil & Gas at Unocal Center. Richards, who has explored caves for some 15 years, took this shot in a lava tube near Volcano National Park in Hawaii.

Vesuvio Bakery
Bernard Kouzel

The judges liked the eye-catching colors and shapes in this photo. "It gives off a very warm, homey feeling."

Bernard Kouzel, who retired last year as a senior engineering associate at the Science & Technology Division in Brea, visited New York City's Soho section and came across what his wife later described as a scene out of a painting by famous artist Edward Hopper.

Kouzel liked the store's mom-and-pop image: "I thought it would make a statement about the artistic neighborhood."

Idaho Winter
Ross Walker

"This is proof that you don't need a brilliant sunrise with vibrant colors to get a terrific scene," noted one judge. "The monochromatic tone is what makes it attractive." The others agreed, praising the photographer's choice to shoot in color despite the overcast.

Ross Walker, systems analyst at Unocal's Credit Card Center in San Francisco, took the shot in Montpelier, Idaho. "The overall whiteness of the scene caught me," he says. "It was an almost surreal feeling."

Tulip Fields
Kenneth Olivier

A strong design caught the judges' attention here: "A combination of elements—tree shapes, color and lighting—gives this the right touch." The judges were also impressed by the clarity of the foreground tulips and the strong vertical and horizontal lines.

The stark contrast of color and shape prompted Dr. Kenneth Olivier to take the photo. He and his wife, while vacationing in Seattle, made a wrong turn on a country road and found this tulip field. Olivier is a research supervisor at the Science & Technology Division in Brea.

Water Games
David Tregoning

"This photo shows what 'enjoying your world' means. The subjects really look at ease in their surroundings," said the judges, who also liked the photographer's use of backlighting.

Dr. David Tregoning, a senior medical officer for Unocal in Indonesia, lives with his family in a company complex in Balikpapan where children often play. "I took two or three shots but liked this one because it seemed to best capture the kids' enjoyment."

Climbing Trees
Maria Gamond

The photographer must always be alert to the possibilities. When Maria Gamond's son Jonathan made an unexpected maneuver on the way to soccer practice, she dashed under the tree and aimed up. The judges liked the photo's spontaneity, and the well-balanced lighting—which can be hard to achieve in shadow with filtered sunlight.

"I guess everything was working in my favor," says Gamond, whose husband George is a maintenance mechanic at Unocal's Chemicals Division plant in Wilmington, California.

Toadstools
Glenn A. Marsh

"It's very well done," said the judges, noting that the selection of focus and exposure was difficult. The photographer's technical skill created a photo with a "nice feeling."

"When I saw the toadstools in my wife's garden, I started wondering what they'd look like from an ant's or beetle's perspective," says Glenn Marsh, manager of corrosion research at the Science & Technology Division.

After attempting to take the picture lying on his stomach, Marsh decided to move the 1¼-inch plant to his study for better focus and lighting.

A (TRUE) FISH STORY

Early explorers of the Pacific Northwest said that the waters fairly "boiled" with salmon moving upstream to spawn. Legend says that you could walk across a stream on the backs of the fish. No longer.

Now commercial fishing is strongly regulated to assure that enough salmon are left each year to swim upstream and spawn new generations. Salmon closures —meaning "no fishing" in specified streams and rivers—are frequent at times in some areas, depending on the amount of fish present.

As the facts of the depletion of salmon have become widely discussed, public and private efforts to reverse the trend have grown. One such effort is the Deer Creek Fish Hatchery, the only such facility in the state of Washington to be built by private donations and run by volunteers. The hatchery is the culmination of six years of planning and fund raising by the Laebugten Salmon Chapter, an organization of sports fishermen consisting of about 400 members primarily from Edmonds and Lynnwood, suburbs of Seattle.

Don Hall, president of the Laebugten Chapter, says, "We built this hatchery because of our concern for the salmon resource. We want to put back what we take."

On May 15 and 16, the first 104,000 chinook salmon fingerlings raised at Deer Creek were trucked from the hatchery, located on ground leased from Unocal's Edmonds Terminal, to the Green River. By now, most of those fish have gone to sea where they will spend the next three or four years before returning to the Green River to spawn. By then, the three-inch fingerlings will have grown to an average length of three feet and average weight of 22 pounds. Chinook, also known as king salmon, have been known to exceed 50 pounds.

Laebugten is the largest of 44 active chapters in Washington's Northwest Steelhead and Salmon Council, which is part of the International Trout Unlimited organization. Formed in Michigan in 1959, Trout Unlimited has about 50,000 members in the U.S. and in other countries with significant coldwater fisheries: Canada, New Zealand and Japan, for example. The organization works to enhance, preserve and restore the coldwater fishery resources. Its members are involved in projects all over the country, with Deer Creek having the distinction of representing an unusually ambitious effort in terms of scope and money.

"We were able to build the hatchery for about one-third of the usual cost thanks to discounts and donations from the entire community," noted Doug McGar, who estimated the total value at $370,000. McGar, volunteer hatchery manager, and Hall emceed at the May 15 dedication of Deer Creek, when 60 awards were given to various donors to the hatchery project.

Unocal was represented by Lowell Torkelson, Edmonds Terminal manager, and Jim Clark, terminal foreman. "It's their ground we're standing on," noted McGar. Unocal has agreed to lease about an acre of land to the Deer Creek Hatchery for $1 a year for 20 years.

"The Deer Creek volunteers are good neighbors," says Torkelson. "They're trying to strengthen the salmon resource for everyone's benefit, which is an admirable effort."

"We're all amateurs," says McGar. "We collect expertise from all over and hope to do two or three releases a year—up to about one million fish."

Below, eyed eggs and fry signal another generation of chinook salmon. Laebugten Salmon Chapter members Don Hall, left, and Doug McGar credit the hatchery's success to strong community involvement.

Photo by Terry Domico/Earth Images

Below, salmon fingerlings are removed from the rearing pond en route to their natural environment. At left, Doug McGar awards plaques of appreciation to Unocal's Lowell Torkelson (center) and Jim Clark for their contributions to the hatchery.

More than 40 major state fish hatcheries and another 40 or 50 satellite hatcheries in Washington release 350 to 400 million fish a year. Volunteer programs, to which the hatcheries supply another two million or so eggs a year, add rearing capacity to the system. These programs range in scope from the Deer Creek facility to small hatchboxes and rearing ponds. The Laebugten Chapter has operated a rearing pen under the Edmonds Fishing Pier since 1979.

Volunteer activities don't just add more fish to the rivers. Perhaps their most important function is to increase public awareness and participation in efforts to reverse the trend of dwindling fish populations, according to Sally Hicks, Department of Fisheries clientele program manager.

Hicks, who coordinates volunteer efforts to support the department's activities, is currently working on 125 projects, from classroom aquaria to the Deer Creek Hatchery, with more applications coming in all the time. Public support will be important in the next five or ten years as the Department of Fisheries works with the Northwest Tribal Council to develop a watershed management plan to refurbish all of the state's natural fisheries.

(In Washington, the Department of Fisheries regulates commercial fish, including salmon. Steelhead and other game fish are regulated by the Department of Game.)

The fish populations have been dwindling since the last century. Commercial fishing in the Pacific Northwest began in the mid-1800s, before anyone understood the need to protect spawning populations. Early logging activities altered the habitat, changing the courses of some streams and removing the shade trees which helped keep the water cool enough for spawning fish.

In more recent times, hydroelectric development has blocked the rivers, barring adult fish from returning to spawning grounds or preventing the smolts from swimming to the sea. Fish ladders have since been installed to allow mature fish to swim upstream around the dams.

"I grew up on Whidbey Island (in the north end of Puget Sound)," says Laebugten member Bob Fuhrman, now retired. "In those days, when we looked across the sound to the mouth of the Skagit River, we'd see twenty fish jumping at a time."

Fuhrman would like to see those fish jumping again, as would many others. The idea for the Deer Creek Hatchery has been around since the founding of the Laebugten Chapter about 15 years ago, according to Fuhrman. The idea was so ambitious that many thought it impractical. However, a few firm believers began fund-raising and planning efforts in earnest about six years ago, and the dedication of the hatchery on May 15 was the result.

The mayor of Edmonds and other officials gather by the rearing pond to thank some 60 merchants for their time and donations. The hatchery building (at left) and other facilities are on land leased from Unocal.

Beginning their journey to the sea, hatchery salmon are released into the Green River. The 50-foot fall does not harm them.

One of the first problems was to find land and a suitable stream to supply water for the hatchery's operations. Deer Creek, which runs across a corner of Unocal's property, was tested and found to be of good quality and the right temperature. The property along the creek provides a buffer between the terminal and the highway. Edmonds Terminal employees have become Deer Creek volunteers, too. "We include this as part of our rounds when we patrol the property," says Jim Clark.

Ground was broken for the hatchery in June 1985. In the following six months, brush was cleared, the rearing pond excavated, and a 30-by-65-foot building to house egg and rearing trays was constructed. Pumps were installed to bring water from the creek into the hatchery and to fill the pond, which has a capacity of one million gallons.

By January 1986, the facility was ready to accept its first chinook eggs. These were supplied by the Green River Hatchery and had already developed "eyes"—the first stage in egg development. Salmon eggs, as any angler knows, are large orange or red balls. They make excellent bait, which may be why, in the wild, salmon hide their eggs in gravelly stream bottoms.

These eggs do not "hatch" in the sense that a bird's eggs do. There is no hard shell. First, the egg forms black eyes—becoming an "eyed egg." From this stage, the body develops, gradually becoming distinguishable from its attached "yolk sac." The yolk provides the developing fish—called a "fry" in this stage—with all the nutrients it needs.

When the yolk is absorbed, the fish begin to feed. At this stage, they are moved from rearing trays in the hatchery to the outdoor pond. They are fed commerically prepared pellets which provide a high-protein, vitamin-packed diet of fish meal. Just before they become "smolts," the fish are moved into the natural environment.

As a smolt, the chinook has undergone the physiological changes that will allow it to live in saltwater. The smolts swim out to sea. Some will live their lives in Puget Sound. Others may migrate as far north as the Bering Sea. After three or four years, they return to the stream or the hatchery where they were spawned to lay new eggs—about 5,000 per female. The adults die, and the cycle begins anew.

At Deer Creek, the first chinook were ready to be transferred to the rearing pond by mid-March. In little more than two months, they grew almost ten times in weight.

"There were 890 fish to the pound when we put them in the pond in March," said McGar. "By May 15, there were 90 to the pound."

The fish were carefully corralled in the pond and scooped into a Department of Fisheries tank truck for the 50-mile ride southeast to the Green River. They were launched into their natural habitat from a bridge at Flaming Geysers State Park, swooping through the air in a 50-foot drop to the river. Fish are aerodynamically designed, so that giant step to freedom did not harm them.

However, predators and other hazards in the natural environment take a heavy toll. Less than four percent of the fingerlings released from hatcheries survive their fish-eat-fish lives to spawn. While the Deer Creek fish faced their destinies, the Laebugten volunteers were relaxing and toasting the success of their efforts. They plan to spend the summer "tuning up" the facility to be ready for another load of eggs in the fall. *B.P.* ⑯

Edmonds Terminal Serves Western Washington

Left and below, Unocal motor transports load up with product at the Edmonds Terminal. More than 165 million gallons of product were shipped from the facility in 1985.

The Edmonds Terminal is one of 15 bulk storage terminals that the Unocal Refining & Marketing Division operates in its western region. The terminal occupies about 50 acres in the city of Edmonds, located northwest of Seattle on Puget Sound.

Terminal manager Lowell Torkelson is also responsible for the smaller Tacoma Terminal and a package warehouse in Tukwila. Some 52 employees at these facilities supply Unocal gasoline and other refined products to northwestern Washington, ranging from the Canadian border south about two-thirds of the way to the Oregon border and as far east as Yakima, Wenatchee and Chelan. "Our longest haul is about 150 miles one way," says Torkelson.

Each of the terminal's six motor transports operate some 160 hours a week. Unocal drivers work 40 hours a week, 10 hours on and 10 hours off. Some product is moved by commercial carriers.

In 1985, the Edmonds Terminal moved 165 million gallons of product by truck and barge. Twice a month, tanker ships pull up at the terminal's dock to deliver product from the company's Los Angeles and San Francisco refineries.

THE SPIRIT SHINES ON

For millions of immigrants, the Statue of Liberty has served as the first glimpse of a new world filled with the promise of hope, freedom and opportunity.

Through the years, however, time and the elements took their toll on this storied symbol of American ideals. Now, thanks to a massive privately funded restoration effort, the 100-year-old statue has been completely refurbished. Unocal has been a major participant in the undertaking, serving as an Official Sponsor of the restoration project.

The project is as important as it is timely. For today, the familiar figure of Lady Liberty holding aloft her torch still fires imaginations the world over.

Like many historic works of art, the Statue of Liberty grew out of a personal vision. The idea was initially proposed in 1865 by French legal scholar Edouard de Laboulaye, who admired American ideals and opposed the oppressive regime of Emperor Napoleon III. He conceived of the statue both as a monument to Franco-American friendship and a tribute to the American ideals of freedom and democracy.

Feeling that the statue should be a gift from the people of France to the people of the United States, de Laboulaye inaugurated a funding drive for the project. Contributions from more than 100,000 people in 181 towns all over France raised the sum of $400,000.

French sculptor Frederic Auguste Bartholdi was selected to design and build the statue. In 1871, Bartholdi journeyed to the U.S. to get a personal feel for the still-young nation and its people. He spent more than three months traveling around the country, and came away greatly impressed with America's forward-looking spirit and the importance its citizens placed on personal liberties.

To symbolize this spirit, Bartholdi chose the figure of a robed woman holding a torch. The torch itself would represent, in Bartholdi's words, "the liberty nurtured in the New World streaming back to light the way for the Old World."

The tablet, crown, and broken shackles adorning Bartholdi's figure were all time-honored symbols of liberty and freedom from oppression. As a model for the face of the robed figure, Bartholdi chose his own mother—by all accounts, a stern and righteous woman.

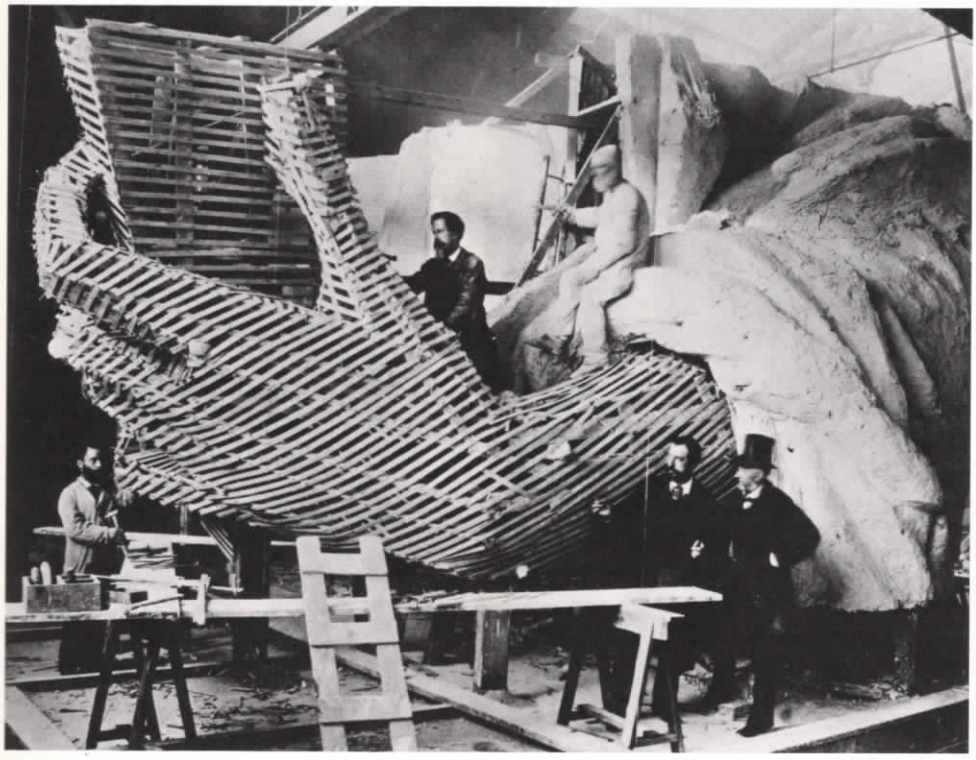
By August of 1875, Bartholdi had completed a four-foot-high plaster model of the statue, which he called "Liberty Enlightening the World." From this miniaturized version, carpenters built full-scale wooden forms of sections of the statue.

Then, hundreds of copper sheets—each less than 1/8 of an inch thick—were hand-hammered into shape over these forms by skilled craftsmen using an age-old metalworking technique called répoussé. This technique was used because metal can be hammered much thinner than it can be cast, which allows for reduced weight—extremely important given a statue of this scale.

Still, Liberty's completed outer skin weighed in excess of 88 tons. Providing adequate support for this massive copper sheathing posed a formidable engineering challenge. Bartholdi called upon Gustave Eiffel, the noted engineer who later designed the Eiffel Tower in Paris, to take on this task. Eiffel designed an intricate framework of iron ribbing upon which the exterior copper sheets would be fastened.

Completed in mid-1884, the fully assembled, 151-foot-tall statue was officially presented to the U.S. Minister to France at a Paris ceremony on July 4. In May of the following year, a ship loaded with 200 crates containing the dismantled monument set sail for America, arriving in New York Harbor on June 17. The site chosen as a home for Bartholdi's statue was 12-acre Bedloe's Island, south of Manhattan off the New Jersey shore. (The island was renamed Liberty Island in 1956.)

As the statue was being built in France, a private funding drive to raise money for construction of a pedestal on Bedloe's Island was undertaken in the U.S. Contributions were slow in coming at first.



Top, Liberty's mammoth toes and the base of her torch await installation on Bedloe's Island in 1886. Below right, Frederic Auguste Bartholdi, the statue's designer. Below left, a French crew constructs one of the wooden forms over which the statue's copper skin was hammered into shape.

Photos courtesy of The Bettmann Archive

Spearheaded by the efforts of New York newspaper publisher Joseph Pulitzer—himself an immigrant—the drive eventually pulled in more than 120,000 individual contributions. Most of these were for less than $1, and many were from schoolchildren. In all, $270,000 was raised.

Construction of the granite-and-concrete base, designed by American architect Richard M. Hunt, took several months. Completed in April of 1886, the pedestal rose 89 feet, resting on a 65-foot-high platform that had been part of an abandoned fort.

Finally, on October 28, 1886, President Grover Cleveland presided over dedication ceremonies as the reassembled statue was unveiled atop its new pedestal. Standing 305 feet high in all, the statue was New York's tallest structure at the time, and the world's largest free-standing statue. She was welcomed by cheering crowds and a 21-gun salute. A huge fleet of ships filled the harbor, clanging bells and blaring horns.

In the midst of this festive celebration, a large European steamship sailed into the harbor. Its passengers—immigrants bound for a new life on these shores—stood on deck marveling at the huge statue raising its torch aloft as if to welcome them.

The presence of these new immigrants at the unveiling was truly fitting. For through the years, the Statue of Liberty has become inextricably linked with the spirit of hope and freedom sought by millions who have come to our nation seeking a new life.

That spirit is perhaps best summed up in a passage of verse which was affixed to the statue's pedestal on a bronze plaque in 1903. The lines, from the sonnet "The New Colossus," were composed in 1883 by poet Emma Lazarus as part of the pedestal fund-raising effort:

"Give me your tired, your poor,
Your huddled masses yearning to breathe free,
The wretched refuse of your teeming shore,
Send these the homeless, tempest-tost to me,
I lift my lamp beside the golden door."

As Lady Liberty's 100th anniversary approached, it became evident that the statue wasn't in the best of shape. Decades of rain, soot and salt air had badly deteriorated its copper skin. The interior iron framework was severely weakened and corroded, creating serious structural problems and safety concerns. It was clear that a major effort was needed to restore the statue and assure its continued existence into the next century.

In 1982, The Statue of Liberty-Ellis Island Foundation began to address these concerns. The foundation's primary mission was to raise money for restoration of the statue and nearby Ellis Island, gateway to America for millions of immigrants over the years. Drawn entirely from private donations, the restoration funds would also be used to provide an endowment for maintenance of the Statue of Liberty and Ellis Island as permanent national monuments.

In addition to fund raising, the foundation was also charged with overseeing the actual restoration work, and with planning and implementing centennial commemoration events on the 1986 Fourth of July weekend.

The Liberty-Ellis Island project has been a resounding success. Support has come from corporations such as Unocal, private foundations, grass roots organizations, and more than one million individuals—many of them, as in Pulitzer's day, schoolchildren. A total of more than $252 million has been raised thus far towards the foundation's fund-raising goal of $265 million.

The statue's restoration—which is now complete—was far from a simple job. The project required two years of difficult labor by a crew of 150 metalsmiths, carpenters, electricians and artisans. They worked from a 300-ton scaffolding erected over the statue in April of 1984 and not removed until early this year.

Much of the restoration is not visible from the outside. The statue retains its original appearance, including the familiar green patina. But the work performed has been substantial.

Each of the 1,800 iron support ribs inside the monument has been precisely measured and replicated in stainless steel, then replaced piece by piece. Liberty's crown spikes have also been restored and strengthened, and the statue's copper skin has been repaired where necessary.

Workers fashioned a new torch flame for the statue—an exact replica of Bartholdi's original—made of hammered copper covered with gold leaf. The statue also has improved access for visitors (including the disabled), a new energy-efficient lighting system, and other improvements to help accommodate some two million visits annually.

The restoration process combined old-world techniques with space-age technology. State-of-the-art computer imaging was used to determine the statue's exact dimensions. Yet to shape the new torch flame, skilled metalworkers brought in especially for the job from France employed the original répoussé technique used by Bartholdi's crew. Today, thanks to these diligent efforts, the statue stands fully restored and ready to begin its second century standing sentinel in New York Harbor.

Nearby Ellis Island is also undergoing restoration as part of the Liberty Centennial project. Between 1892 and 1954, almost 17 million immigrants passed through the doors of the historic Ellis Island facility, where they were processed before going on to new lives in the United States. Today, nearly half of all living Americans can trace their ancestry to one or more of those arrivals.

In 1965, Ellis Island was declared a historic shrine, becoming part of the Statue of Liberty National Monument under administration of the National Park Service. But recently, the island's structures had fallen into disrepair.

Now, Ellis Island is being restored to its 1918-1924 appearance as a national "museum of immigration." Work centers on the main building— known as the Great Hall—where immigrants were first screened upon debarkation from their ships. Additional rooms in the facility's 33 buildings are being renovated for use as theaters, meeting rooms and display halls. A library and research center will also be set up. The most historic area of the island is expected to be completed in 1988.

Coinciding with Independence Day weekend of this year, a three-day extravaganza—dubbed "Liberty Weekend"—will celebrate the unveiling of the restored Statue of Liberty. The celebration will not only mark an historic occasion, but serve to reaffirm the forward-looking spirit and cherished ideals the statue embodies.

Things will kick off on the evening of Thursday, July 3, when President Reagan—from Governors Island, facing Liberty Island—will unveil the restored statue and relight its torch. On Ellis Island, and simultaneously by satellite in cities throughout the nation, U.S. Chief Justice Warren Burger will swear in over 25,000 new American citizens.

Festivities will continue on Friday, July 4, when naval vessels from around the world will join U.S. ships for an international naval review in New York Harbor. Over 200 sailing ships from 30 nations will follow in a parade. Concerts and other activities are planned at several sites around the harbor, and the evening will be capped off by a huge fireworks display. The following day, more activities, including tours of the re-opened statue, are planned.

As the fireworks light up New York Harbor (and the rest of the nation, via live television), Unocal employees can take special pride in their company's support for the Liberty Centennial project. Unocal is one of only a handful of Official Sponsors of the restoration. The company's participation has been highlighted in recent months in its advertising and product packaging.

Unocal itself was born just a few short years after the Statue of Liberty's flame first lit up New York Harbor. Although it is based across the continent from Lady Liberty, the company has provided work and opportunity over the years for hundreds of the immigrants who passed under her flame.

To many of those immigrants, Liberty's flame was a bright beacon representing freedom and opportunity. Unocal's participation in the Statue of Liberty's restoration reaffirms the company's commitment to those same American ideals. *T.S.* 76

Restoration work on the Statue of Liberty was completed earlier this year. Thanks to support from individuals, private foundations, and corporations like Unocal, Lady Liberty is now ready to begin her second century standing sentinel in New York Harbor.

Photo by Andy Levin

Service Awards

UNOCAL 76

CORPORATE

May 1986

40 YEARS	**Norma V. Ham,** Unocal Center
35 YEARS	**James R. Courtney,** Unocal Center **Muriel J. Seyffer,** Unocal Center
20 YEARS	**Melvin D. Gabel,** Kenai, Ak. **Russell M. Horton,** Unocal Center
15 YEARS	**MaryJane Nelson,** Chicago, Il.
10 YEARS	**Robert J. Phillips,** Unocal Center
5 YEARS	**Gilbert W. Coates,** Unocal Center **Daniel A. Cozzie,** Burbank, Ca. **Michael J. Laurence,** Unocal Center **Monty P. Pollard,** Los Angeles, Ca. **Elisia J. Seymore,** Unocal Center

June 1986

35 YEARS	**Stephen H. Nosler,** Unocal Center
25 YEARS	**Barbara J. Williams,** Schaumburg, Il.
20 YEARS	**Robert E. Beechler,** Burbank, Ca. **Ronald O. Bruning,** Unocal Center **James J. Chevalier,** Unocal Center **Richard T. Davies,** Unocal Center **Merrilee A. Garcia,** Unocal Center **Kenneth D. Hall,** Unocal Center **Ronald M. Jackson,** Unocal Center
15 YEARS	**Joe D. Cecil,** Unocal Center **Kenneth L. Riedman Jr.,** Unocal Center
10 YEARS	**Robert J. Anderson Jr.,** Unocal Center **James A. Martinez,** Unocal Center
5 YEARS	**Johnnie M. Carter,** Pasadena, Ca. **Raymond R. Kerr,** Unocal Center **Ronald W. Kleb,** Houston, Tx. **Esteban A. Mejia,** Unocal Center **Paresh D. Patel,** Unocal Center **Rick A. Persaud,** Unocal Center **Margaret L. Petrovich,** Schaumburg, Il. **Stephen Postert,** Schaumburg, Il. **Steven A. Salinas,** Unocal Center **Rod L. Steinbrook,** Unocal Center

ENERGY MINING

May 1986

5 YEARS	**Timothy L. Hall,** Parachute, Co. **Alan L. Salter,** Parachute, Co.

June 1986

20 YEARS	**David C. Lundgren,** Parachute, Co.
5 YEARS	**Michael K. Barta,** Parachute, Co. **Stephen F. Blakely,** Parachute, Co. **Brenda F. Carter,** Unocal Center **Vera L. Creagar,** Parachute, Co. **Hilding K. L. Spradlin,** Parachute, Co. **Michael Urioste,** Parachute, Co.

REAL ESTATE

June 1986

10 YEARS	**Robert J. Schrag,** Anaheim, Ca.

SCIENCE & TECHNOLOGY

May 1986

40 YEARS	**Thomas L. Kowalski,** Brea, Ca.
20 YEARS	**Sidney F. Krupicka,** Brea, Ca.
5 YEARS	**Darush Farshid,** Brea, Ca. **Mary L. Moore,** Brea, Ca. **Paul R. Robinson,** Brea, Ca. **Mary A. Young,** Brea, Ca.

June 1986

40 YEARS	**Max M. Ellis,** Brea, Ca.
35 YEARS	**Lee C. Vogel,** Brea, Ca.
25 YEARS	**Starling K. Alley Jr.,** Brea, Ca. **Barbara J. Orosz,** Brea, Ca.
10 YEARS	**James R. Durham,** Brea, Ca. **Tim B. Keller,** Brea, Ca. **Pascual B. Pardo,** Brea, Ca.
5 YEARS	**Jared L. Black,** Brea, Ca. **Steven J. Butler,** Brea, Ca. **Kevin R. Devey,** Brea, Ca. **Steven E. Howe,** Brea, Ca. **Jimmie L. Robinson,** Brea, Ca. **Rosanne M. Turczynskyj,** Brea, Ca. **Dennis A. Vauk,** Brea, Ca. **Shie-Way Wang,** Brea, Ca. **Vera E. Williams,** Brea, Ca.

ENERGY RESOURCES

OIL & GAS

May 1986

40 YEARS	**Billy Carnahan,** Woodward, Ok. **Kenneth P. Tucker,** Ardmore, Ok.
35 YEARS	**E. S. Dietrich,** Casper, Wy. **Robert W. Gardner,** Orcutt, Ca.
30 YEARS	**William C. Goth,** Ventura, Ca. **James M. Workman,** Houston, Tx.
25 YEARS	**Ruth D. Jackson,** Orcutt, Ca. **George T. Mayer,** Lafayette, La.
20 YEARS	**Paul E. Crossman,** Anchorage, Ak. **Thomas L. DeWitt,** Coalinga, Ca. **Alfred B. Horaist Jr.,** Lafayette, La. **William A. Lee,** Santa Fe Springs, Ca. **Elton N. Shrode,** Santa Fe Springs, Ca.
15 YEARS	**Terrill L. Barton,** Santa Fe Springs, Ca. **Alfred Harris,** Houma, La. **Charles D. Hodkins,** Orcutt, Ca. **T. Wayne Jackson Sr.,** Houma, La. **Mark E. McCree,** Santa Paula, Ca. **John A. Robinson,** Houma, La.
10 YEARS	**Steven J. Benedetti,** Midland, Tx. **Earl P. Champagne,** Van, Tx. **Ricky L. Colton,** Anchorage, Ak. **Paul F. Duhon,** Lafayette, La. **Wesley H. Griesemer,** Olney, Il. **Lemmie R. McGrew,** Houston, Tx. **Teresa A. O'Sullivan,** Orcutt, Ca.
5 YEARS	**Mary E. Atkinson,** Orcutt, Ca. **Martin R. Coggins,** Ventura, Ca. **Jeanine C. Denton,** Casper, Wy. **Margaret S. Hagelstein,** Midland, Tx. **Robert L. Harris,** Unocal Center **James R. Harrison,** Houma, La. **Mark A. Ivanowicz,** Bakersfield, Ca. **H. Jeffrey Moore,** Mobile, Al. **Dennis C. Moss,** Moab, Ut. **Robert W. Owens,** Lafayette, La. **Bruce E. Parker,** Ardmore, Ok. **James F. Pettit,** Coalinga, Ca. **Dudley J. Ponville Jr.,** Houston, Tx. **Mark A. Rubin,** Van, Tx. **Navin K. Sharma,** Anchorage, Ak. **Bruce L. Stanton,** Bakersfield, Ca. **Glenn P. Thibodeaux,** Lafayette, La. **Edward C. Turner,** Coalinga, Ca. **Jay M. Waldrop,** Andrews, Tx. **Steven P. Webre,** Lafayette, La.

June 1986

40 YEARS	**Ralph A. Houdyshell,** Andrews, Tx.
35 YEARS	**Bob L. Adkison,** Moab, Ut. **Robert N. Bongard,** Houston, Tx. **Carl R. Carlson,** Bakersfield, Ca. **John F. Kohal Jr.,** Orcutt, Ca. **Patricia A. Reagan,** Pasadena, Ca.
30 YEARS	**Allen J. Brugman,** Lafayette, La. **C. A. Tannahill,** Houston, Tx.
25 YEARS	**Joseph E. Barbier,** Houma, La. **Beulah L. Landry,** Lafayette, La. **Wilma C. Shiner,** Coalinga, Ca. **Robert H. Stanaker,** Houston, Tx. **Phillip E. Webb,** Ardmore, Ok. **T. A. Winkelmann,** Houston, Tx.
20 YEARS	**James E. Church,** Ventura, Ca. **Dale L. Elchlepp,** Orcutt, Ca. **Thomas E. Fisher,** Lafayette, La. **Paul W. Holderfield,** Santa Paula, Ca. **Rosalee F. Ingram,** Bakersfield, Ca. **Karen J. McGafee,** Pasadena, Ca. **Clarence J. Melancon,** Lafayette, La. **Julio Soto,** Unocal Center **Carl H. White,** Anchorage, Ak.

15 YEARS	**Jack L. Heindselman,** W. Liberty, Il. **Joe A. Hollis,** Santa Paula, Ca. **Edward N. LaBauve,** Lafayette, La. **Hal G. Lindle Jr.,** Anchorage, Ak.
10 YEARS	**Roland P. Aucoin,** Houma, La. **Glenn C. Fredrick,** Casper, Wy. **Robert L. Meyer,** Houston, Tx. **Shirley M. Pizzo,** Houston, Tx. **Sharon S. Puckett,** Houston, Tx. **William D. Runnalls,** Worland, Wy. **Roger B. Stickney,** Anchorage, Ak. **Larry D. Vinson,** Houston, Tx. **Joan I. Winterer,** Ventura, Ca.
5 YEARS	**Lucian M. Abernathy Jr.,** Anchorage, Ak. **Wayne Aguirre,** Taft, Ca. **James P. Avioli Jr.,** Van, Tx. **Renato R. Bizzio,** Lafayette, La. **Matthew R. Bob,** Houston, Tx. **Irvin J. Champagne,** Houma, La. **Kei Tai Chan,** Unocal Center **Charles W. Chezik,** Bakersfield, Ca. **Jerry D. Collins,** Anchorage, Ak. **Dorothy B. Cunningham,** Jackson, Ms. **Steven T. Garcia,** Moah, Ut. **Jessie L. Gaspard,** Lafayette, La. **Mary S. Glovanovitch,** Houston, Tx. **Allen D. Holden,** Unocal Center **Arsie Jaramillo,** Moah, Ut. **Francis K. Kpodo,** Santa Fe Springs, Ca. **Stacie A. Kruer,** Midland, Tx. **Gary S. Kunkel,** Orcutt, Ca. **Neeta N. Kurani,** Unocal Center **Pete L. Martin,** Coalinga, Ca. **Robert A. Mercer,** Houston, Tx. **Scott A. Meyer,** Midland, Tx. **Daniel Ortega,** Coalinga, Ca. **Bryan A. Price,** Houma, La. **Patrick L. Prout,** Anchorage, Ak. **Darell J. Richard,** Houma, La. **Velma J. Richardson,** Anchorage, Ak. **David L. Saylor,** Anchorage, Ak. **Charles D. Smith Jr.,** Houston, Tx. **Lawrence C. Smith,** Houston, Tx. **Sam K. Steele,** Oklahoma City, Ok. **Faron J. Thibodeaux,** Houma, La. **Dennis O. Wilson,** Worland, Wy.

INTERNATIONAL OIL & GAS

May 1986	
30 YEARS	**Bernard W. Holub,** Balikpapan, Indonesia
25 YEARS	**Robert O. Harlow,** Unocal Center
20 YEARS	**Frederik E. Dekker,** Unocal Center
15 YEARS	**Rita E. Marrs,** Unocal Center
10 YEARS	**Arun K. Metre,** The Hague, Netherlands **Kevin T. Sullivan,** The Hague, Netherlands
5 YEARS	**Joe K. Chang,** Unocal Center **Delora W. Flicker,** Unocal Center **Regina C. Foreman,** Unocal Center **Paul S. Granata,** Los Angeles, Ca. **Sy Nguyen,** Unocal Center
June 1986	
35 YEARS	**Eugene F. Griffin,** Unocal Center
30 YEARS	**Richard G. Martin,** Los Angeles, Ca. **Ben E. Talley,** Unocal Center
20 YEARS	**William D. Jones,** Unocal Center **Timothy C. Lauer,** Balikpapan, Indonesia **Robert R. Rose,** London, England
5 YEARS	**Victorio S. Apostol,** Unocal Center **Charles A. Day,** Los Angeles, Ca. **Marcia Ward,** Los Angeles, Ca.

Unocal Indonesia, Inc.

May 1986	
15 YEARS	**Daniel Munir**
10 YEARS	**Sugimin** **Rachmat Kartadjoemena**
5 YEARS	**Arismen Bermawi** **Gustaf Petrus Gosal** **Rasul Hamidi** **Eko B. Sotjipto**
June 1986	
10 YEARS	**Poniman** **Subijono** **Harsono Hadipranoto** **Herman Hutabarat** **Peter Harmanoe Karsono** **Pondasaka Lubis**
5 YEARS	**Mardiyanto** **Marjoko** **Purwoko** **Achmad Huda** **Benny Johannes** **Yusuf Muhamad** **Soekamto Dino Saputra** **Fajar Shodiq** **Ralph Tehupuring** **Syahrul Wasioen**

Unocal Netherlands, Inc.

May 1986	
5 YEARS	**Mike Burghardt** **Monique De Jong**

Unocal Limited (Singapore)

May 1986	
15 YEARS	**Raymond Chan Lay Ho** **Frederick Yeo Yoon Kiong**

Unocal Suez (Egypt)

May 1986	
10 YEARS	**Moh Abdalla**
June 1986	
10 YEARS	**Aly Sebac**

Unocal U.K.

May 1986	
5 YEARS	**John Nairn,** London, England **James Savage,** Aberdeen, Scotland **Pauline Simpson,** Aberdeen, Scotland **Alastair Sutherland,** Aberdeen, Scotland
June 1986	
5 YEARS	**Roy McCourt,** Aberdeen, Scotland **Kevin Ross,** Aberdeen, Scotland **Christine Sexton,** London, England

UNOCAL CANADA LIMITED

May 1986	
20 YEARS	**Nestor R. Shular,** Calgary, Alta.
10 YEARS	**Fritz H. Perschon,** Calgary, Alta. **Marta M. Stepanek,** Calgary, Alta.
June 1986	
15 YEARS	**Jerry W. Block,** Fort St. John, B.C.
5 YEARS	**Vernon G. Mantey,** Calgary, Alta. **Gordon T. Stabb,** Calgary, Alta. **Peter E. Thannhauser,** Calgary, Alta.

UNOCAL THAILAND, INC.

May 1986	
10 YEARS	**John D. Evans** **Prinya Musodee**
5 YEARS	**Saad H. Abdelkodous** **Putchong Busayaratana** **Boonchuay Charoensuk** **Charles W. Franklin** **Alex P. Klinski** **Prayong Jutisima** **Victor J. W. Lane** **Shonthaya Ponpinyo** **Patrick C. Sangster** **Suchart Sawasdipisal** **Wirayut Tabthong** **Pichai Tanamaitreejit** **Bandid Wongcharoen**
June 1986	
5 YEARS	**Thongsai Namwong** **Pojjanun Suanboonchuay** **Sarithpong Suanmalee** **Panjama Tunvuttikul** **Vitoon Udompol**

GEOTHERMAL

May 1986	
10 YEARS	**Harry O. Bain,** Santa Rosa, Ca. **Linda J. Dondanville,** Santa Rosa, Ca. **Jodie E. Fisher,** Imperial Valley, Ca.
June 1986	
35 YEARS	**Frank L. Lemmon,** Imperial Valley, Ca.
15 YEARS	**John K. Leong,** Manila, Philippines **Althea M. Thomas,** Unocal Center
10 YEARS	**Dwayne P. Daunch,** Santa Rosa, Ca. **Gary S. Johnson,** Santa Rosa, Ca. **Brian W. Maassen,** Santa Rosa, Ca. **Donald R. Walker,** Imperial Valley, Ca.
5 YEARS	**Philip G. Mogen,** Santa Rosa, Ca. **Thinh H. Tran,** Santa Rosa, Ca.

Philippine Geothermal, Inc.

May 1986	
10 YEARS	**Ernest C. Alcober** **Antonio N. Base** **Reymundo D. Frugal Jr.**
5 YEARS	**Domingo B. Ador** **Virgilio L. Apuyan** **Yolanda B. Cruzana** **Benjamin L. Go** **Romeo R. Mendez**

Service Awards

June 1986

10 YEARS
Ernesto U. Bergantin
Vicente C. Bobiles
Wilfredo D. Canezo

5 YEARS
Vicente D. Belbis
Emiliano N. Briones Jr.
Gerardo C. Cresencio
Lilian G. Orsenado
Hedelita U. Patron
Luciano B. Penafiel
Eduardo R. Matulac

REFINING & MARKETING

May 1986

20 YEARS
Vincent Egidi Jr., Schaumburg, Il.
Jose F. Garcia, San Francisco, Ca.
Kenneth E. Guziak, Los Angeles, Ca.
Judith A. Lussow, Schaumburg, Il.

15 YEARS
William F. Baron, San Francisco, Ca.
Thomas C. Farley, Dallas, Tx.
Richard L. Veale Jr., Houston, Tx.

10 YEARS
Sheryl L. Schon, Schaumburg, Il.

5 YEARS
Cheryl A. Morgan, San Francisco, Ca.
Corey Rucci, Schaumburg, Il.

June 1986

35 YEARS
James A. Hester, Birmingham, Al.
Wesley W. Willborg, Houston, Tx.

30 YEARS
Don M. Jacobs, Schaumburg, Il.

25 YEARS
Roger C. Beach, Unocal Center
Andrew A. Goerger, Schaumburg, Il.
F. J. Schweizer, Walnut Creek, Ca.
John W. White, Houston, Tx.

20 YEARS
George M. Landbo, Schaumburg, Il.
Joseph Leaman, Schaumburg, Il.
Richard P. Nielsen, Schaumburg, Il.
Marlene Selpien, Schaumburg, Il.

15 YEARS
Joseph S. Adelizzi, Schaumburg, Il.
Betty C. Chan, San Francisco, Ca.
Randall A. Knoll, Schaumburg, Il.
Michael D. Riehle, Los Angeles, Ca.

10 YEARS
Daniel W. Hoover, Schaumburg, Il.
John T. Marrs, Schaumburg, Il.

5 YEARS
Julie A. Gibby, San Francisco, Ca.
Lorraine Guerra, San Francisco, Ca.
Lawrence Hajek, Schaumburg, Il.
Lynda B. Janezic, Schaumburg, Il.
Estelita W. Meren, San Francisco, Ca.
Steven M. Rychlewski, Schaumburg, Il.
Russell R. Wermers, Los Angeles, Ca.

EASTERN REGION

May 1986

40 YEARS
William C. Holland, Chicago Refinery
William G. Lessmann, Schaumburg, Il.

35 YEARS
Edmund Doone, Schaumburg, Il.
John E. Hines, Wheeling, W.V.

30 YEARS
James T. Jordan, Memphis, Tn.
Ronald R. Winter, Schaumburg, Il.

25 YEARS
John I. Buckles, Schaumburg, Il.
Ernest W. Hathcoat, Berwyn, Il.
Frances C. Marada, Schaumburg, Il.
Donald C. Nist, Columbus, Oh.
Robert K. Schlacter, Toledo, Oh.
Robert A. Starkey, Southfield, Mi.

20 YEARS
Marvin L. Baransy Jr., Charlotte, N.C.
Thomas J. Brunner, Cincinnati, Oh.
Edward L. Selvas, Chicago Refinery

15 YEARS
Betty L. Ashley, Wildwood, Fl.
Ben O. Basham, Chicago Refinery
Wendell L. Cox, Schaumburg, Il.
Richard Crucknol, Tallmadge, Oh.
Eddie P. Davelt, Wildwood, Fl.
M. A. Nosek, Pure Transportation Co., Olney, Il.
Stephen L. Petleski, Chicago Refinery
Robert L. Wesolowski, Chicago Refinery
William E. Wesolowski, Chicago Refinery

10 YEARS
Robert H. Barbosa, Beaumont Refinery
Gregory W. Faulk, Beaumont Refinery
Donald E. McKinney, Beaumont Refinery
Steven E. Ulm, Pure Transportation Co., Mokena, Il.

5 YEARS
Robert W. Butts, Schaumburg, Il.
Moises Chavez, Schaumburg, Il.
Dennis R. Cook, Pure Transportation Co., Ft. Morgan, Co.
Thomas A. Green, Savannah, Ga.
Thomas A. Lawson, Chicago Refinery
Robert J. Lee, Southfield, Mi.

June 1986

40 YEARS
Lillian A. Seidel, Columbus, Oh.
Henry N. Smith, Collins, Ms.

35 YEARS
James L. Hill, Charlotte, N.C.
Grant F. Lawrence, Chicago Refinery
Harold J. Schaper, Schaumburg, Il.
Gerald M. Soller, St. Paul, Mn.

30 YEARS
Jerry T. Carter, Tampa, Fl.
Leopold A. Luna, Toledo, Oh.
Jack L. McDaniel, Atlanta, Ga.

25 YEARS
Roger E. Danner, Milwaukee, Wi.
Wayne W. Pritzel, Chicago Refinery

20 YEARS
Lawrence J. Batis, Chicago Refinery
Joann M. Hodoval, Schaumburg, Il.
George T. Schroeder, Allen, Tx.
Robert P. Soderdahl, Schaumburg, Il.
Margaret M. Watson, Schaumburg, Il.

15 YEARS
John Barca, Schaumburg, Il.
Mary K. Doyle, Schaumburg, Il.
John R. Fitzgerald, Schaumburg, Il.
Clyde E. Laird, Beaumont Refinery

10 YEARS
James J. Foster, Schaumburg, Il.
James G. Petrus, Schaumburg, Il.

5 YEARS
Eddie C. Adams, Beaumont Refinery
Shirley E. Alfaro, Beaumont Refinery
Lewis G. Bowie, Beaumont Refinery
Thomas V. Barnes, Beaumont Refinery
Robert E. Brannon, Beaumont Refinery
Fred T. Brunner, Beaumont Refinery
Martin L. Chavis, Beaumont Refinery
Linda F. Cole, Beaumont Refinery
Robert M. Crocher, Chicago Refinery
Conrad B. Edgett Jr., Chicago Refinery
Wilbert R. Evans, Beaumont Refinery
Stanley T. Farries, Chicago Refinery
Lois J. Fox, Beaumont Refinery
Gerald J. Fry, Chicago Refinery
Peter Gerstenkorn, Chicago Refinery
Wilma Lynn Guidry, Beaumont Refinery
Roland Hayes, Beaumont Refinery
Willie L. Huff, Wildwood, Fl.
Lester S. Ignacek, Chicago Refinery
James W. Jackson, Beaumont Refinery
Marcia J. Jackson, Chicago Refinery
John A. Johnson, Beaumont Refinery
Virginia E. Kerr, Beaumont Refinery
Mary F. King, Beaumont Refinery
Marilyn H. Kole, Chicago Refinery
Nicholas Kozak, Chicago Refinery
Deborah A. Krolikiewicz, Chicago Refinery
Jimmie L. Logsdon, Beaumont Refinery
Laura L. Marasa, Schaumburg, Il.
Joseph M. McBroom, Beaumont Refinery
Clifford W. McFarland, Chicago Refinery
Elisabeth H. McHugh, Schaumburg, Il.
Dennis W. Morgan, Beaumont Refinery
Timothy E. Perrott, Pittsburg, Pa.
Joseph E. Porto, Chicago Refinery
Richard G. Rimbo, Chicago Refinery
Nathaniel Thomas, Jacksonville, Fl.
Danny R. Williams, Beaumont Refinery
Joe R. Williams, Beaumont Refinery
Linda F. Wiltz, Beaumont Refinery
Carol Wolske, Chicago Refinery
Harold L. Woods, Beaumont Refinery
Don E. Yawn, Beaumont Refinery

WESTERN REGION

May 1986

40 YEARS
Elton P. Barnett, Los Angeles, Ca.
Claude E. Echols, San Francisco Refinery

35 YEARS
Lester L. Krohn, Los Angeles, Ca.
Leo Edwin Olsen, San Francisco Refinery
William F. Welch, San Francisco Refinery

30 YEARS
James Oliver Green, Avenal, Ca.
Edmund A. Vasper, Honolulu, Hi.

25 YEARS
Robert R. Mitchell, Los Angeles, Ca.
Frank F. Molette, Santa Maria Refinery
Walter Schweikert, Reno, Nv.
Frank Souza Jr., Sacramento, Ca.

20 YEARS
Sid Ray Carter, San Francisco Refinery
Gary E. Myhro, Anchorage, Ak.
William A. Walker, San Diego, Ca.

15 YEARS
Melvin H. Chiya, Phoenix, Az.
Jeannette Gertmenian, Unocal Center
Daniel Herrera, Los Angeles Refinery
Terry T. Holthe, Los Angeles, Ca.
Ronald R. Saarinen, Edmonds, Wa.
Ronald J. Smith, Los Angeles Refinery
Henry J. Ynostroza Jr., Los Angeles, Ca.

10 YEARS	**Joseph A. Dauster,** Santa Maria Refinery **Debra A. Finch,** Seattle, Wa. **Russell R. Goya,** Hilo, Hi. **William P. Lanoux,** Los Angeles Refinery
5 YEARS	**Theodore J. Abeyta,** Pasadena, Ca. **David W. Amble,** Seattle, Wa. **Ruth A. Amdal,** Seattle, Wa. **Laura Breen Bailey,** Portland, Or. **Leroy Carson,** Los Angeles, Ca. **Rosalie P. Conley,** Los Angeles Refinery **Dennis E. Dowling,** San Francisco Refinery **Richard A. Durdle,** Los Angeles, Ca. **Morgan L. Flaherty,** San Francisco Refinery **Juan C. Gutierrez,** Los Angeles, Ca. **William H. Haffey,** Los Angeles Refinery **Lars D. Jensen Jr.,** Pasadena, Ca. **Kyung S. Lee,** Los Angeles Refinery **Deborah K. Lingren,** Los Angeles, Ca. **Stanley G. London,** Los Angeles Refinery **Judith K. Lyen,** Seattle, Wa. **Matthew W. Madden,** San Francisco Refinery **Cheryl L. Martin,** San Francisco Refinery **Armando O. Molina,** Los Angeles, Ca. **Richard L. Morris,** San Francisco Refinery **Lee Neang,** Los Angeles, Ca. **Michael J. Rehnberg,** Los Angeles, Ca. **Louis E. Rice,** San Francisco Refinery

June 1986

45 YEARS	**Richard W. Mertes,** Los Angeles, Ca.
40 YEARS	**Nick B. Matisevich,** Los Angeles Refinery
35 YEARS	**Robert R. Gould,** San Francisco Refinery **Alfred G. Souza,** San Francisco Refinery
30 YEARS	**Alvin B. Hess,** Richmond, Ca. **John W. Mullen,** Los Angeles, Ca. **James T. Pearson,** Torrance, Ca. **John M. Peck,** Los Angeles, Ca.
25 YEARS	**Helen S. Brown,** Los Angeles, Ca. **Jimmy B. Deering,** Santa Maria Refinery **Robert B. Kimmell,** Los Angeles, Ca.
20 YEARS	**John F. Caybert,** Richmond, Ca. **Dennis Cook,** Unocal Center **James W. Cox,** Portland, Or. **Harold E. Hanna,** Richmond, Ca. **Charles D. Johnson,** Pasadena, Ca. **Gene E. Klein,** Los Angeles Refinery **Philippe Lanouette,** Orange, Ca. **Richard L. Lauderback,** Richmond, Ca. **Dean R. Masterton,** San Jose, Ca. **Colleen J. McGarry,** Los Angeles, Ca. **Robert E. Youngquist,** Colton, Ca.
15 YEARS	**Sandra A. Collins,** Richmond, Ca. **Leonard M. Koontz,** Unocal Center **James C. Lainhart,** San Francisco Refinery **Richard Mackenzie,** Los Angeles, Ca. **Walter T. Mallory Jr.,** Los Angeles Refinery **Johnny L. Mosley,** Los Angeles Refinery
10 YEARS	**Michael W. Hawley,** Los Angeles, Ca. **Bruce E. Knight,** Pasadena, Ca. **Edward C. McCarthy,** Los Angeles, Ca. **Donald X. Stokes,** Richmond, Ca. **Charlotte A. Taylor,** Seattle, Wa.
5 YEARS	**Armando Alcaraz,** Torrance, Ca. **Michael K. Beavers,** San Francisco Refinery **Michael J. Braun,** Los Angeles Refinery **Patrick L. Chapman,** San Francisco Refinery **Michael J. Cinelli,** Santa Maria, Ca. **Nancy J. Coffey,** Los Angeles Refinery **Richard L. Jankowski,** Santa Maria Refinery **Andrew Johnson,** Cerritos, Ca. **Edmond C. Lee,** Los Angeles, Ca. **Edward M. McAfee,** Santa Paula, Ca. **John S. McConnel,** Seattle, Wa. **Demetria Y. McLaurin,** Los Angeles, Ca. **Jose L. Meza,** Los Angeles, Ca. **Thomas F. Niedzialek,** Los Angeles Refinery **Michael R. Orr,** San Pedro, Ca. **James J. O'Toole,** Los Angeles Refinery **Richard A. Pompa,** Los Angeles, Ca. **Peter L. Schnieders,** Los Angeles, Ca. **Judith M. Shipman,** Phoenix, Az. **Phyllis A. Sirchia,** Los Angeles, Ca. **Steven M. Vasquez,** Orange, Ca. **Valerie T. Zumwalt,** Los Angeles, Ca.

MARKETERS & DISTRIBUTORS

May 1986

40 YEARS	**Knoll Brothers, Inc.,** Michigan City, In.
35 YEARS	**William E. Graham,** Canby, Or.
30 YEARS	**Cashion, Inc.,** North Wilkesboro, N.C.
25 YEARS	**Carl A. Write of Van Wert, Inc.,** Van Wert, Oh. **G & M Oil Co., Inc.,** Barbourville, Ky.
20 YEARS	**Robert E. Bongers,** Connell, Wa.
15 YEARS	**Alabama Oil Co.,** Gadsen, Al. **Ervin & Dennis Alves,** Half Moon Bay, Ca. **H. A. Collins,** Dinuba, Ca. **Marcum Oil Co.,** Oneonta, Al.
5 YEARS	**Earl Casazza Oil Co.,** Reno, Nv. **Kenneth A. Drake, Distributor,** Blythe, Ca.

June 1986

45 YEARS	**K. V. Tetz,** Ilwaco, Wa.
40 YEARS	**Hunt Oil & Tire Co., Inc.,** Grenta, Va. **Puckett Oil Co.,** Shellman, Ga.
30 YEARS	**Cummings Oil Co., Inc.,** Hampton, S.C. **Simmons Oil Co.,** Magee, Ms.
20 YEARS	**Curtis-Tharaldson Oil Co., Inc.,** Duluth, Mn. **Mendocino Coast Petroleum, Inc.,** Fort Bragg, Ca.
15 YEARS	**Joe T. Dehmer Distributor, Inc.,** Jackson, Ms. **Mid South Oil Co.,** Tunica, Ms. **Northrop Oil Co.,** Century, Fl.
10 YEARS	**Battle Mountain Auto Supply,** Battle Mountain, Nv.
5 YEARS	**W. Henry Hardy, Inc.,** Danville, Va.

Service Awards

CHEMICALS

May 1986

25 YEARS	**Gary W. Anker,** Brea, Ca. **James A. Johnston,** Charlotte, N.C. **William D. Lathan,** Wilmington, N.C. **Nicholas J. Maselli,** East Providence, R.I.
20 YEARS	**James D. Robertson,** Charlotte, N.C.
15 YEARS	**George D. Ferree,** Denver, Co. **Maurice J. Gendron,** Providence, R.I. **W. L. Harris,** Bridgeview, Il.
10 YEARS	**June Brassel,** Memphis, Tn. **Michael R. Brennan,** Schaumburg, Il. **Ronald D. Burger,** Kenai, Ak. **Harold E. Collins Jr.,** Kenai, Ak. **Laura J. Gamboa,** Unocal Center **Angela Hinds,** Brea, Ca. **John P. Pardue,** La Mirada, Ca.
5 YEARS	**Jacob A. Chinderle III,** Lemont, Il. **Jose E. Esmeralda,** Unocal Center **Linda Felton,** St. Paul, Mn. **Roger J. Ottersbach,** Charlotte, N.C. **Edward F. Skarbek,** Charlotte, N.C. **Cheryl L. Sotelo,** Unocal Center **Louise M. Zirkler,** Unocal Center

June 1986

20 YEARS	**Robert E. Rowan,** Atlanta, Ga.
15 YEARS	**Robert M. Cooper,** Brea, Ca. **Murton D. Depriest,** Kenai, Ak. **William A. Fields,** Bridgeview, Il. **Karl A. Lukens,** Conshohocken, Pa. **Richard P. Oelrich,** Kenai, Ak. **Arnold E. Oskolkoff,** Kenai, Ak. **Jacqueline A. Peninger,** Schaumburg, Il.
10 YEARS	**Jessie Cooper,** Bridgeview, Il. **William H. Foggie,** Charlotte, N.C. **Boyce R. Gibson,** Charlotte, N.C. **Willie L. Johnson,** Bridgeview, Il. **Larry M. McDaniel,** Charlotte, N.C. **James M. Yauch,** Schaumburg, Il.
5 YEARS	**Michael E. Ayers,** Houston, Tx. **James F. Blake Jr.,** Unocal Center **John C. Frattini,** Oakland, Ca. **Robert A. Frost,** Unocal Center **Fred A. Miller,** Kenai, Ak. **Danny R. Mumm,** Lemont, Il. **Larry D. Nabors,** Rodeo, Ca. **Joyce A. Zizzo,** Schaumburg, Il.

Service Awards

MOLYCORP, INC.

May 1986

10 YEARS	**Lloyd A. Vorwald,** Louviers, Co. **Ronald S. Walsh,** Mountain Pass, Ca.
5 YEARS	**Stephen B. Castor,** Mountain Pass, Ca. **Phillip L. Cisneros,** Questa, N.M. **Christine H. Heinze,** Mountain Pass, Ca. **Richard E. Landavazo,** Questa, N.M. **Gilberto A. Lopez,** Questa, N.M. **Russell M. Martinez,** Questa, N.M. **Beth A. Matthews,** Washington, Pa. **Zenovio J. Medina,** Questa, N.M. **Fred E. Mondragon,** Questa, N.M. **Filberto H. Ortiz,** Questa, N.M. **David W. Partridge,** Questa, N.M. **Raymond E. Piper Jr.,** Questa, N.M. **John M. Purcell,** Questa, N.M. **Michael D. Romero,** Questa, N.M. **Tomas B. Romero,** Questa, N.M. **Fernando B. Salazar,** Questa, N.M. **Charlie O. Sanchez,** Questa, N.M **Orlando Sanchez Jr.,** Questa, N.M. **Tony Santistevan,** Questa, N.M. **Albert E. Struck,** Questa, N.M. **James R. Terrill,** Washington, Pa. **Jude D. Torrez,** Questa, N.M.

June 1986

35 YEARS	**Raymundo I. Archuleta,** Questa, N.M.
30 YEARS	**Jose E. Maes,** Questa, N.M.
20 YEARS	**James W. Keim,** Denver, Co.
10 YEARS	**Paul A. Tiedemann,** Mountain Pass, Ca.
5 YEARS	**Neil R. Buck,** Mountain Pass, Ca. **Floyd L. Duran,** Questa, N.M. **Jesse L. Meyer Jr.,** Mountain Pass, Ca. **Hari Padmanabhan,** Washington, Pa.

POCO GRAPHITE, INC.

May 1986

5 YEARS	**Norman F. Garrow Jr.,** Decatur, Tx. **Richard M. Williams,** Decatur, Tx.

June 1986

35 YEARS	**Charles L. Heaberlin,** Decatur, Tx.
10 YEARS	**Raymond L. McClelland,** Decatur, Tx. **James R. Patrick,** Decatur, Tx.
5 YEARS	**James D. Cooper,** Decatur, Tx.

RETIREMENTS

March 1986

Cristoval D. Quintana, Molycorp, Taos, N.M., December 5, 1968
Nazario C. Suazo, Molycorp, Taos, N.M., May 24, 1965
Stanley Sutton, Refining & Marketing, Long Beach, Ca., December 12, 1952
Gilbert C. Vargas, Molycorp, Arroyo Seco, N.M., March 12, 1964
Joe O. Velasquez, Molycorp, Questa, N.M., November 1, 1965

April 1986

Valentine M. Ayala, Science & Technology, Diamond Bar, Ca., January 21, 1963
Robert C. Dent, Chemicals, Kenai, Ak., December 1, 1975
Sam J. Dragna, Oil & Gas, Berwick, La., September 8, 1951
Lorenzo E. Duran, Molycorp, Taos, N.M., April 8, 1964
Reba M. French, Chemicals, Paradise, Tx., April 23, 1975
Clarice M. Holmer, Refining & Marketing, Dolton, Il., March 28, 1971
Samuel Keller, International Oil & Gas, San Marino, Ca., January 11, 1956
Walter J. Laskowski, Refining & Marketing, Elmhurst, Il., December 1, 1958
Felizandro Martinez, Molycorp, El Prado, N.M., May 5, 1970
James A. Moody, Refining & Marketing, Los Angeles, Ca., October 8, 1969
Louis P. Sydejko, International Oil & Gas, Glendale, Ca., June 1, 1958
Anthony Vinterella, Oil & Gas, LaPlace, La., August 17, 1948
Lorraine M. Wiswedel, Chemicals, St. Clair Shores, Mi., March 1, 1966

May 1986

Charles M. Baumgardner, Molycorp, Washington, Pa., November 10, 1942
Henry J. Bayliss, Corporate, Santa Ana, Ca., January 3, 1972
Dwain J. Bradshaw, Molycorp, Mountain Pass, Ca., March 22, 1965
M. Irene Darlington, Refining & Marketing, Santa Maria, Ca., July 21, 1965
Ernest E. Ek, Refining & Marketing, West Covina, Ca., February 11, 1946
Robert D. Flaxbeard, Chemicals, Fallbrook, Ca., March 14, 1960
David E. Garber, Refining & Marketing, Anaheim, Ca., November 22, 1945
Curtis C. Gregg, Refining & Marketing, Bartlett, Il., February 1, 1957
Shirley E. Hall, Refining & Marketing, Schaumburg, Il., July 19, 1951
James C. Hamilton, Refining & Marketing, Savannah, Ga., October 28, 1963
Robert E. Harke, International Oil & Gas, Anaheim, Ca., June 14, 1954
Lewis L. Hargrove Jr., Refining & Marketing, Roswell, Ga., January 16, 1956
T. Craig Henderson, Chemicals, Flintridge, Ca., November 10, 1949
Charles L. Higginbotham, Refining & Marketing, Upper Arlington, Oh., November 1, 1954
John P. Hill Jr., Refining & Marketing, Houston, Tx., November 20, 1950
Mary Jane Kruger, Refining & Marketing, Hoffman Estates, Il., September 10, 1973
William S. McConnor, Refining & Marketing, Los Angeles, Ca., July 1, 1941
Earle F. Mead, Corporate, San Rafael, Ca., September 20, 1940
Howard A. Platt, Refining & Marketing, Garden Grove, Ca., February 2, 1953
Ann E. Quarfoot, Refining & Marketing, Schaumburg, Il., November 1, 1967
Thelma H. Sharpe, Refining & Marketing, Birmingham, Al., September 25, 1950
Mary Anne Smith, Refining & Marketing, Alameda, Ca., December 26, 1950
Max B. Southwick, Refining & Marketing, Westminster, Ca., November 18, 1947
Anthony P. Thalmann, Refining & Marketing, Wilmette, Il., June 18, 1945
Donald J. Van Harreveld, Refining & Marketing, San Luis Obispo, Ca., June 5, 1950
George E. Wolfe, Refining & Marketing, Phoenix, Az., January 12, 1953

June 1986

Louie J. Abney, Oil & Gas, Coalinga, Ca., October 24, 1967
Kenneth A. Granot, Refining & Marketing, Downers Grove, Il., July 30, 1947
Robert W. Greenleaf, Refining & Marketing, Beaumont, Tx., August 12, 1947
John W. Griffin, Refining & Marketing, Crockett, Ca., August 12, 1945
Lee C. Harvell, Refining & Marketing, Concord, Ca., June 9, 1942
Harold E. Hays, Refining & Marketing, Vallejo, Ca., November 18, 1948
William C. Holland, Refining & Marketing, New Lenox, Il., May 9, 1946
Leroy W. Koch, Chemicals, Beaumont, Tx., October 1, 1946
John Floyd Kohal Jr., Oil & Gas, Grover City, Ca., June 1, 1951
John H. Link, Refining & Marketing, Arlington Heights, Il., October 6, 1947
Josephine D. McEachin, Corporate, West Covina, Ca., November 18, 1974
Richard C. McKee, Oil & Gas, Casper, Wy., August 15, 1955
C. Ray Mitchell, Science & Technology, Orange, Ca., August 10, 1955
Lewis R. Mote, Refining & Marketing, Anaheim, Ca., June 26, 1950
Robert Pavlovich, Science & Technology, Anaheim, Ca., November 8, 1948
Mac R. Steele, Refining & Marketing, Newark, Oh., November 16, 1953
Carl R. Walden, Refining & Marketing, Rodeo, Ca., May 12, 1942

IN MEMORIAM

Employees

Edgar K. Borglin, Oil & Gas, Ventura, Ca., March 1, 1986
George I. Stone, Geothermal, Brawley, Ca., February 17, 1986
Bogdan F. Tomaszewski, International Oil & Gas, North Hollywood, Ca., April 9, 1986

Retirees

Frank C. Andruski, Chemicals, Brea, Ca., March 27, 1986
Ralph I. Asay, Refining & Marketing, Hathaway Pines, Ca., March 12, 1986
Virgil D. Baird, Refining & Marketing, Fraceyburg, Oh., March 21, 1986
Charles L. Biltz, Refining & Marketing, Kent, Oh., March 9, 1986

Gordon L. Blankenship, Refining & Marketing,
Marietta, Ga., January 18, 1986
Florence G. Breitstein, International Oil & Gas,
Laguna Hills, Ca., March 3, 1986
Grant T. Burrows, Oil & Gas,
Canyon Country, Ca., March 1, 1986
William A. Champlin, Corporate,
Los Angeles, Ca., March 28, 1986
Harry A. Chance, Refining & Marketing,
Silsbee, Tx., March 29, 1986
Harold V. Childs, Refining & Marketing,
Dearborn, Mi., March 6, 1986
Roy A. Christiansen, Refining & Marketing,
Oakland, Ca., March 4, 1986
Marion R. Cisne, Oil & Gas,
Flora, Il., April 4, 1986
Mary Genevieve Clay, Refining & Marketing,
Los Angeles, Ca., March 25, 1986
Thomas J. Collins, Refining & Marketing,
Arroyo Grande, Ca., April 8, 1986
Nora Edith Comer, Refining & Marketing,
Memphis, Tn., February 1, 1986
Horace D. Corbett, Refining & Marketing,
Pensacola, Fl., April 19, 1986
John F. Davidson, Refining & Marketing,
Redding, Ca., April 1, 1986
Eudora C. DeJulio, Refining & Marketing,
Indianapolis, In., December 4, 1985
Frank J. Devine, Refining & Marketing,
Albany, Ca., March 12, 1986
Frances L. Dock, Refining & Marketing,
Yucaipa, Ca., March 2, 1986
Roy G. Edgar, Oil & Gas,
Madill, Ok., April 1, 1986
Vergel B. Edwards, Refining & Marketing,
La Mesa, Ca., April 8, 1986
James H. Eiland Sr., Refining & Marketing,
Hattiesburg, Ms., March 20, 1986
John E. Erickson, Oil & Gas,
West Palm Beach, Fl., January 19, 1986
Goldie H. Garvin, Refining & Marketing,
Naples, Fl., February 14, 1986
Lillian M. Gengler, Refining & Marketing,
Bellevue, Wa., October 23, 1985
Louis W. Gerdes, Refining & Marketing,
Norwalk, Ca., March 14, 1986
Wesley V. Griffin, Oil & Gas,
Big Springs, Tx., April 12, 1986
George W. Grimes, Refining & Marketing,
Atlanta, Ga., March 30, 1986
John Hadden, Refining & Marketing,
Romeoville, Il., April 17, 1986
Jack R. Hamilton, Refining & Marketing,
San Luis Obispo, Ca., March 18, 1986
Wheeler Harden, Refining & Marketing,
Indianapolis, In., January 6, 1986
Charlie M. Harding, Oil & Gas,
Snyder, Tx., February 23, 1986
John W. Hayes, Molycorp,
Prosperity, Pa., March 3, 1986
Louis L. Hester Jr., Refining & Marketing,
Nederland, Tx., April 15, 1986
Clyde Hoon, Refining & Marketing,
Santa Maria, Ca., March 25, 1986
Maurice W. Jefferson, Refining & Marketing,
St. James City, Fl., January 22, 1986
Richard H. Karl, Refining & Marketing,
Deming, N.M., February 21, 1986
Daniel T. Kinman, Oil & Gas,
Madill, Ok., April 15, 1986
J. T. Lofton, Oil & Gas,
Healdton, Ok., March 21, 1986
Jean L. McFarland, Science & Technology,
Calpella, Ca., March 5, 1986
Hugh F. McElgunn, Refining & Marketing,
Apple Valley, Ca., April 1, 1986
Alvin C. McGowan, Refining & Marketing,
Silsbee, Tx., March 17, 1986
John R. Manor, Oil & Gas,
Mt. Pleasant, Mi., April 13, 1986
John P. Mayernick, Refining & Marketing,
Yreka, Ca., March 28, 1986
William B. Merrick, Refining & Marketing,
Akron, Oh., March 14, 1986
Robert T. Mock, Refining & Marketing,
Bronston, Ky., March 8, 1986
Glenn H. Moore, Pure Transportation Co.,
Ellinwood, Ks., March 19, 1986
Milton L. Moore, Oil & Gas,
South Gate, Ca., April 19, 1986
Charlie J. Morris, Chemicals,
Anaheim, Ca., March 23, 1986
Alpheus M. Myers, Refining & Marketing,
South Charleston, W.V., March 21, 1986
Lester W. Neidhammer, Refining & Marketing,
Parma Heights, Oh., April 21, 1986
Hilda E. North, Refining & Marketing,
Bensenville, Il., January 10, 1986
Ernest Novotny, Refining & Marketing,
El Cajon, Ca., April 2, 1986
Wilbur B. Ohrt, Refining & Marketing,
Alhambra, Ca., March 30, 1986
Robert A. Royce, Chemicals,
Walnut Creek, Ca., January 20, 1985
Richard M. Scamman, Corporate,
Whittier, Ca., April 14, 1986
Harry F. Sherman, Refining & Marketing,
Barrington, Il., April 22, 1986
Edward F. Shinnerer, Corporate,
Laguna, Ca., March 30, 1986
Thomas G. Simms, Refining & Marketing,
Scottsboro, Al., February 26, 1986
O. Clifton Simonson, Oil & Gas,
Whittier, Ca., April 21, 1986
McLean Small, Refining & Marketing,
Healdsburg, Ca., March 24, 1986
Ralph A. Smith, Oil & Gas,
Seth, W.V., March 22, 1986
Wade A. Spence, Refining & Marketing,
Sun City, Ca., April 20, 1986
Joseph L. Stechschulte, Refining & Marketing,
Toledo, Oh., February 2, 1986
Carl P. Stephenson, Refining & Marketing,
Bandon, Or., March 16, 1986
Arthur W. Sternberg, Refining & Marketing,
Wilmette, Il., March 16, 1986
James Clifford Stone, Oil & Gas,
Van, Tx., February 14, 1986
Lucille L. Toner, Refining & Marketing,
Long Beach, Ca., February 11, 1986
John W. Towler, Refining & Marketing,
Hemet, Ca., March 17, 1986
William Orby West, Oil & Gas,
Fort Worth, Tx., March 24, 1986
Dorothy E. Whall, Refining & Marketing,
Monrovia, Ca., April 8, 1986
Roy L. Wilson, Refining & Marketing,
Duluth, Mn., March 10, 1986
William W. Workman, Refining & Marketing,
La Canada, Ca., April 11, 1986

UNOCAL 76
Unocal Corporation
P.O. Box 7600
Los Angeles, California 90051

GARY L FOY
16823 LIGGETT STREET
SEPULVEDA CA 91343

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COVER: Pipelines cascade down from a tank battery at Unocal's Edmonds Terminal near Seattle. A fish hatchery at the facility is helping boost the area's salmon population. Story on page 26. **Photo by Larry Lee.**

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