

THE AGE OF DISCONTENT

The 1970s were sometimes shocking and at other times depressing. Harris described the decade as an "age of discontent". It brought massive construction, expanded regulation, costly environmental requirements, an abrupt change in the world energy picture, double-digit inflation, and energy price increases that unleashed the wrath of once placid customers. It also brought dramatic increase in the number of employees to cope with growth and with new regulatory and environmental requirements.

The decade of the '70s saw Harris emerge as a national spokesman for the energy industry and for business, and fall victim of illness when he was at the zenith of his career. Twice Sherwood H. Smith, Jr. was called on with little warning to assume major responsibilities, the last time as chief executive officer. For years CP&L had attracted little interest from the news media. Now it had to adjust to being front page news with disturbing regularity.

Responding to the tremendous growth of its service area, the Company entered the new decade with six major electric generating units in various stages of construction. Even so, to meet expected 1971 load, it had to add nine more internal combustion turbines. It expected to double its generating capacity over the next seven years at a cost of \$1.4 billion, more than it had spent for construction during its first 62 years. The price of coal, boosted by new mining restrictions that limited productivity, had climbed 40 percent in just five years. The rate of inflation had doubled since 1967, reaching 5.9 percent.

Other electric companies had the same kind of problems. The only difference was that CP&L's were more acute because it was growing faster -- doubling every six or seven years compared to ten years for the industry. That growth was a reflection of economic development in the Company's service area which had helped raise per capita income from 68 percent of the national average in 1960 to 79 percent by 1970.

1970: RAISING PRICES FOR THE FIRST TIME

The necessity to seek the Company's first general rate increase had been recognized in 1969. All that remained was to complete the application and submit it to the Public Service Commission in South Carolina and the State Utilities Commission in North Carolina. On April 22, 1970 the filing was made. It asked for a 10.5 percent increase which translated to \$1.28 per month, or less than a nickel per day for the average residential user.

Harris commented on the filing. "The spiraling cost of nearly everything we buy to provide electric service, including investment capital, makes a price increase essential. If we could get coal and borrow money during 1970 at our 1968 cost levels, the Company would reduce its expenses this year by \$14 million."

The Raleigh News and Observer editorialized: "Carolina Power and Light Company's

request for a general rate increase averaging 10.5 percent has a lot going for it from the very start. Like all of us, the corporation is caught in the inflation bind.... Nor is public tolerance of the rate request discouraged by the fact that CP&L has never before sought a rate hike."

Through its communications, the Company reminded that since 1940 the price of electricity had gone down while other prices had gone up. It cited examples: an ice cream cone from 5 cents to 30 cents, a razor blade from 3 to 18 cents, a tube of lipstick from 79 cents to \$1.50, a box of aspirin from 12 to 29 cents, a cigar from 5 to 20 cents, a haircut from 40 cents to \$2.25, and a new automobile from \$845 to \$2,900. For the same period, the Company's revenue from residential users per kilowatt-hour had dropped from 2.95 cents to 1.64 cents. If it had to raise rates, CP&L was fortunate to start with prices for residential customers that were 21 percent below the average price nationally.

Regulatory Lag

Concerned about regulatory lag -- the time between the filing of a rate case and a decision by the Commissions -- and confronted with a rapidly deteriorating financial situation, the Company on May 29 filed for an interim "emergency increase" of four percent. "Changes in coal costs that have developed within the last six weeks have put us in a much more urgent situation," Harris explained. Faced with the prospective loss of its double-A bond rating, the Company delayed the sale of \$50 million of First Mortgage Bonds pending the outcome of the request for an interim increase. Harris termed the emergency relief essential to attract capital to keep construction going.

Ironically, an investment banking firm released a report showing that CP&L ranked first among the hundred largest electric utilities in the rate of growth of revenues for the past five years. But that revenue had come from selling more kilowatt-hours, not higher prices.

Less than a month later, the original filing was amended to raise the general rate increase request to 14 percent. On June 30 the emergency interim increase was approved. A decision on the full request came first in South Carolina where the 14 percent was granted effective January 1, 1971. In North Carolina an increase of 11.86 percent was granted effective March 1. This was the first of five rate cases the Company would have during the '70s. To customers it would seem there were more.

As retail rates increased, so did the charges for wholesale customers -- the 24 municipal, 18 REA co-op and two privately-owned systems supplied by CP&L. Wholesale rates required approval of the Federal Power Commission which later became the Federal Energy Regulatory Commission.

Building a 'Rate Case' Department

With the economics of the industry reversed, it was apparent that each new increment of generating capacity was going to add to costs rather than reduce them. Therefore the outlook was for a succession of rate cases. Just when and how much was less clear. Sam Behrends, the attorney who had been named to head the rate department, embarked on two strategies. First, he built a "rate case" department, adding personnel to give in-house expertise on rate matters and the ability to testify. He launched a load research program to support allocation of costs to different classifications of customers on a scientific basis. Second, he set about convincing other departments, particularly those in construction and engineering, that rate cases were for the whole company, not just the rate department. Anything done by any department could surface as an issue.

Expanding its system rapidly in an inflationary environment produced a continuing problem for the Company. Its rate cases were based on historic cost data. With inflation of six percent annually, prices were out-of-date when they became effective. Playing catch-up was expensive. Neither the Company nor its regulators had ever had to cope with this problem.

In June 1970 the News and Observer reported that, according to federal officials, the possibility of a severe and prolonged electric power shortage in the Carolinas during the summer was greater than in past years. Reserve generating capacity for the four companies serving the Carolinas was placed at about 8 percent, well below the 15 to 20 percent considered adequate by the Federal Power Commission.

Weeks later, the newspaper advised "if the picture on your television tube starts to narrow, wait a minute before you call the repairman. You're probably just a temporary victim of an electrical power shortage along the Atlantic Seaboard." Robert Koger of the State Utilities Commission's engineering staff was quoted about voltage reductions implemented to stretch power supplies. "The television screen might narrow and get a little darker, but you wouldn't even notice that your lights were a little dimmer unless you knew about the reduction."

Meanwhile, Harris was approached about becoming vice chairman of Edison Electric Institute. CP&L directors viewed the opportunity for national leadership as valuable to the Company, and they authorized him to accept. It meant he would become EEI chairman in 1971.

New Direction for Marketing

When the first rate case was filed, Harris quietly advised that sales promotion advertising ought to be phased out. He foresaw the succession of rate increases, and he believed continued encouragement of consumers to use more service as their bills rose would not be well received by either the public or regulators. Further, there were dire predictions about energy shortages across the country. Subsequently, he discussed with Ridout the appropriate direction for the Company's sales effort. They agreed on a basic thrust which Ridout incorporated into a speech.

The call for a new direction in marketing was sounded in a September address to the

national meeting of electric company sales executives. Citing the tenuous supply situation, Ridout declared that a great question had been raised about the ability "of this industry to continue to provide reliable electric service." He quoted Stewart Udall's comments following the federal official's warning about August blackouts.

"Ostensibly, these snafus will be triggered by overloaded power systems and equipment breakdowns," said Udall, "but the real culprit is the rip-roaring electric power binge we've been on since World War II...

"It is madness to think that even an electric-swizzle-stick culture such as ours can long sustain these trends. Between 1966 and 1969, the number of large-scale power failures more than quadrupled.

"We can expect such crises to multiply during the next decade ... because the utilities will have to perform miracles to double their output and meet our `peak' demand for electricity on hot midsummer afternoons.

"The task would be herculean even without the likely complications. But with construction delays, plant breakdowns, a slowdown in coal deliveries, tight money, and debates over nuclear contamination and other environmental hazards, we'd have to be cockeyed optimists to believe the utilities will keep all our electric toothbrushes swishing along on schedule."

Then Ridout quoted the Kiplinger Letter which earlier in the summer had advised that "electricity will have to be rationed during peak periods.... Power shortages ... you will have to live with for years ... because electric companies can't possibly add to their capacity fast enough to make up for the present under-supply in many areas, plus new demands. Appoint someone in your company to confer with local utility men on ways to make power reductions as painless as possible when they come And remember the trouble isn't only this summer ... it's for years to come."

Given this background, Ridout made his point. "The hard truth is that as utility marketing executives we are embarking upon a new era. We no longer can afford to sell, sell, sell. We must sell selectively or risk passing completely out of the corporate picture.... We must be absolutely certain our marketing effort does indeed contribute to the profitability of our company.

"Public, political and regulatory tolerance of aggressive marketing by electric utilities appears to be narrowing somewhat in the face of continuing reports of energy shortages, rate increases, difficulty in siting new plants, and adverse impact on the environment. There have been suggestions we ought to be encouraging our customers to conserve electricity -- not use more.

"...Emphasis in the marketing function may very well shift to service. The traditional sales orientation of marketing people will not suffice. We must broaden our concept to include customer and service orientation.... My opinion is that we may sometimes do negative selling and that we will see a greater marketing emphasis on customer service than sales.... We must know our

markets and our customers better than we have ever known them."

Reaction to the speech was strong, both among those who heard it and in the ranks of CP&L sales personnel who heard about it. It was chosen as the best presentation at the sales executives conference, and subsequently scheduled for the annual meeting of Edison Electric Institute as well as other trade and industry groups. Ridout believed it marked the beginning of utility conservation programs and led to the redirection of sales programs across the country. Certainly, it provided a glimpse of things to come at CP&L.

Environmental Concerns

On area campuses, college students were caught up in the excitement of Earth Day. Ott Jones spoke to seminars at UNC-Chapel Hill and at North Carolina State University. Observing that the Company would spend more than \$25 million by 1976 for environmental protection, he emphasized that CP&L had undertaken "an all-out design effort to reduce to a practicable minimum the effect of new facilities on the environment. We recognize that we need to do more, and we are doing it," he declared, while reminding that the public ultimately must pay the bill. Before 1976, expenditures for equipment to protect the environment far exceeded Jones' expectations, rising above \$100 million.

One of the environmental issues was whether companies should be required to place power lines underground. Harris addressed it during a presentation in Wilmington. "Society must decide," he said, "whether it is a proper allocation of the nation's resources to pay such a price for aesthetics while many of our citizens and electric users are ill-fed, ill-clothed, ill-housed and ill-educated. What system of national priorities will society establish for the use of our resources?"

Noting that the Company was trying to balance good looks with economy and reliability, Paul Colby said the cost for underground in many cases was ten times more than for overhead. He estimated total conversion to underground would triple or quadruple power bills. Then he cited projects underway at CP&L to use "armless construction", color-coordinated components and colored wood poles to make overhead lines environmentally compatible. Plans evolved that allowed cities and developments to choose underground distribution systems if they were willing to pay the incremental cost.

In Washington, the Environmental Protection Agency (EPA) was established to coordinate federal environmental programs, and the National Environmental Policy Act (NEPA) was passed. NEPA required the Atomic Energy Commission to have environmental impact statements for proposed plants. The Clean Air Act was amended to place more stringent limits on emissions from coal-fired plants. The Water Quality Improvement Act also became law. It was followed by the Clean Water Act of 1972 and amendments in 1977 which redefined clean water standards. All of the actions would have major impact on CP&L. The next few years would be spent trying to understand the programs and adjust to their increasingly stringent requirements.

First Nuclear Plant Completed

Meanwhile, Robinson 2 was approaching operation. Only 42 months after the construction permit was received, the \$24 million initial fueling was finished and the first nuclear reaction was achieved. By October Robinson 2 was producing limited quantities of electricity while performing the tests required to go from no power to full power. When it was declared commercial on March 7, 1971 it was the largest operating commercial nuclear power plant in the world. By any measure, it was a bargain for CP&L and its customers. The contracted price was \$114 per kilowatt. Both Westinghouse and Ebasco Services were said to have lost heavily on the turnkey job. The option for a second unit was withdrawn.

Guy Beatty was manager of the Robinson plant. He, John Connelly, Ben Furr, Murray Johnson, Andrew McCauley, Jack McGirt, Richard Morgan, James Petitgout, Howard Smith, David Snipes, Ed Thorndyke and Ernest Tilley were the group of 12 who spent approximately 18 months in Pennsylvania during training to qualify as reactor operators. Their training was at the Saxton plant, a small reactor installed by Westinghouse and General Public Utilities, and at Waltz Mill where Westinghouse offered classes in health physics and radiation protection.

After the training came an examination by the AEC to determine each individual's readiness. McGirt said the Company's philosophy was that a nuclear facility was like any other steam electric plant. Only the fuel was different. He recalled that Robinson 2 was started with a crew equivalent to that for a fossil plant of the same size. The fossil and nuclear units were operated from the same control room, and except for operators the two units were run by the same people. There were about 125 employees at the plant.

In May Robinson 2 was formally dedicated in ceremonies over which Governor John West presided. One of the speakers was Senator John Pastore, chairman of the Joint Committee on Atomic Energy, who told the 300 persons in attendance that they were "...witnessing a milestone that will endure and endure and endure and be an example for the industrial progress of our great nation forever...." James T. Ramey, a member of the Atomic Energy Commission, expressed his personal belief that "the current national concern for the environment will enhance the desirability of producing electric energy by nuclear power." John Nassikas, chairman of the Federal Power Commission, also spoke.

For CP&L the dedication was an event which attracted the national leadership of the nuclear industry, and caused them to focus for a little while on the first commercial nuclear power facility in the southeast. On that day there were no security fences or guards. Visitors were allowed to tour the plant and see the control room. Security requirements -- and the related costs -- would come later. The Company sought to educate the public as to how simple and safe nuclear power generation was.

CP&L's commitment to nuclear power was consistent with national policy. Harris

said "we are building nuclear plants because they are safe, they are environmentally compatible, they will permit the conservation of fossil fuels for other uses, and they will enable us to provide the energy our customers require at more favorable prices." No one anticipated how the time for licensing and construction would stretch and how construction costs would escalate.

CARVA Pool Dissolved

In 1970 CARVA was disbanded. The companies had grown so rapidly that two-party sales agreements would allow them to build big generating units. Two-party agreements were much easier to negotiate. Further, the formation of the National Electric Reliability Council and the Southeastern Electric Reliability Council provided a vehicle for coordinating and for reporting to the Federal Power Commission. Thompson cited another flaw of CARVA: It was a fallacy to believe that individual companies would allow a pool committee to tell them who could build plants and where they could be built. Colby added an ironic note. He said the volume of legal documents required to dissolve the pool was five times as much paper as was needed to form it.

With the dissolution of CARVA, the Virginia-Carolinas Reliability group (VACAR) was formed. Its members were the four utilities which had made up CARVA plus the South Carolina Public Service Authority, Southeastern Power Administration and Yadkin, Inc. It functioned as a sub-group within the Southeastern Electric Reliability Council.

Jones Heads Operating and Engineering Group

Colby retired in November and was replaced by J. A. "Ott" Jones as head of the operating and engineering group. Jones had worked 11 years in a Duke Power plant, rising from janitor to shift foreman before deciding to go to college. When he was graduated from North Carolina State University in 1951, he came to CP&L.

One of his early assignments at the Company was to study economic load dispatch and devise a practical way to apply it. He and Jimmy Bass, an engineering aide, designed a slide board, using a logarithmic scale with adjustments for coal prices at each plant. Using the board and a T-square, a dispatcher could quickly determine the unit which could supply the next increment of generating capacity more economically. It was a crude forerunner of the complex computers later installed in the energy control center. Jones had been superintendent of the Weatherspoon plant before returning to Raleigh as manager of power supply.

Jones came to his new post schooled in the Company's philosophy of minimizing manpower requirements. But he also brought a strong conviction that the larger coal-fired plants and the nuclear plants would require more people than the Company had anticipated. The operating nuclear plants of other companies that he had seen "were full of people, contrary to the way we operated," he said. "We couldn't go into nuclear and do things the way we did at fossil plants."

In expanding the operating and engineering work force, he worked hard to get people

into the Company to make it successful. He looked for experienced people because he believed time was too short to allow the development of new college graduates. He developed his organization. He upgraded functions into new departments. And he was credited with being a good delegator.

One other significant change occurred in the operating and engineering group in 1970. The power supply department was divided into the power plant design and construction department managed by W. B. Kincaid and the generation and system operations department managed by E. E. Utley. CP&L had become a construction company as well as an operating entity. It chose to strengthen its ability to manage its mushrooming construction. One of the first persons Kincaid employed was McDuffie, the man who had directed Ebasco's construction at the Asheville, Roxboro and Robinson plants. Kincaid and Utley were elected vice presidents in September 1972.

A warning of the Company's changing image came from the Moore County News. "Reddy Kilowatt has had a good public relations image going for him for some time, but it is beginning to get a little tarnished around the edges." Long identified with the sales effort, Reddy was destined to have a steadily diminishing role for CP&L.

To the north, a sister utility was in difficulty. Potomac Electric Power Company (PEPCO) which serves the nation's capitol city needed a president and chief executive officer. Headhunters had conducted a national search. They focused on Reid Thompson. When they spoke to Harris, he said he told them Thompson was the best qualified man in the country for the job. Thompson knew that within a few weeks he would be elected president of CP&L. But the opportunity to take the top post at another utility was too attractive. Thompson resigned in January 1971, signaling that the building of a management team was a never-ending process.

Smith, Lilly become Group Executives

The team which Harris had crafted so carefully had lost a key player. Sherwood H. Smith, Jr., who had been hired into the legal department in 1965 by Thompson was elevated to senior vice president, general counsel and group executive for the legal group. Smith, a native of Jacksonville, Florida, attended the University of North Carolina at Chapel Hill as a Morehead Scholar. He earned undergraduate and law degrees with honors. Before joining CP&L, he was an attorney with Joyner and Howison, a Raleigh law firm which represented clients before the State Utilities Commission. At the Company, he had earned a reputation for his dogged determination and resourcefulness. A co-worker described him as "filled with the right instincts." He was politically astute. One of his first tasks had been to help with territorial assignment. Later, Smith would demonstrate a remarkable ability to understand complex matters and grasp essential facts. He earned a reputation for never forgetting a name. His boyish appearance belied the maturity of his judgment.

Thirty years later, Thompson said that even had he done nothing else for CP&L, his employment of Smith was worth every penny the Company paid him.

On March 1, his first day at Pepco, Thompson received a telegram from Harris. It read: "Best wishes for success. If you find the place where the buck stops a bit lonesome at times, remember you can always share the loneliness with another lonesome chief executive."

With the Company's staggering demand for capital, Harris recognized the need for specialized leadership to deal with the financial community. So as Thompson departed, Harris recruited Edward G. Lilly, Jr., to be senior vice president and group executive for finance. Lilly came from Wachovia Bank and Trust Company in Winston-Salem where he was senior vice president of the trust investment services department. The son of a Presbyterian minister, he was educated at Davidson College and at the Wharton School of Finance of the University of Pennsylvania. His mandate, as he saw it, was to assure that the Company had sufficient funds for its operating and construction needs. One of his first impressions was that the ratio of new capital needed to current investment in the Company was staggering. He had never heard of anything like it.

Harris Plant Announced

In April 1971 the Company invited local and state officials to a breakfast at the old Sir Walter Hotel in Raleigh. There it announced plans for a four-unit nuclear generating plant in Wake county that was estimated to cost more than \$1 billion and become the largest construction project in the country. The plant's capacity would equal that of the entire existing CP&L system. One of the 900,000 kilowatt units was scheduled to begin operation each year from 1977 through 1980. The initial concept was to build a reservoir of 10,400 acres to serve as a cooling lake and supplement the water which flowed into the lake by pumping from the Cape Fear river. The economics were persuasive for putting four big nuclear units at the same location, near the load center of the Company's system. CP&L also expected to ask the Atomic Energy Commission to license the four units in one proceeding, saving time and money. It was "big time" thinking.

When the decision was made in 1970 to construct the Harris plant, there were only 11 formal regulatory guides. Before the plant was completed the Nuclear Regulatory Commission would issue near 2,800 regulatory guides, letters, bulletins, orders and other standards with which the Company had to comply.

The decision to locate a major facility in Wake was an effort by the Company to contribute to the tax base in the county where it had its greatest concentration of customers. James M. Sell, one of the engineers investigating potential sites, said management had instructed them to determine whether there was a suitable location in Wake. They found the property near New Hill was thinly populated, reasonably priced and capable of development. Only about 25 families would have to be relocated. Eight percent of the land was being farmed. At a subsequent meeting of directors, Harris was asked to excuse himself. Karl Hudson, Jr., then proposed the Wake facility be named for Harris. Other directors approved. Ebasco Services was retained as architect-engineer for the Harris plant.

When the North Carolina Utilities Commission held a November hearing on the Company's request for a certificate of convenience and necessity for the Harris plant, it marked the first time that CP&L had encountered intervenors in such a hearing. They expressed concern about safety and radiation --themes that would grow louder in ensuing years -- and whether there would be need for so much generating capacity.

Asheville 2 on Schedule

The "miracle" of constructing Asheville 2 in two years concluded when the plant was declared commercial on May 2, 1971. Arthur Williams, president of South Carolina Electric and Gas, paid tribute to CP&L in a speech to the Asheville Chamber of Commerce. Saying that the industry norm for building such a plant was three years, he acknowledged that CP&L had been willing to tackle the seemingly impossible task when its three partners in CARVA were of the opinion it couldn't be done.

Harris used the same forum to express for the first time a philosophy which he would repeat frequently. "We want to make certain," he said, "that no one is deprived of an opportunity to work, that no waste disposal facility or pollution abatement device stands idle, and that no homemaker is relegated to ancient drudgery because of an inadequate power supply."

The Company was acting on the premise that it was obligated to supply all the electricity its customers demanded. There was a kind of "headiness" associated with being the fastest growing electric utility and having the biggest construction program in relationship to present size. The question which inevitably would arise was whether customers could afford the electricity even if CP&L could build the massive plants at so fast a pace. One major new unit was scheduled for each of the next nine years.

Based on historical experience, the Company expected its construction and financing challenge would be manageable. In other parts of the country, companies were having difficulty locating plants. In the event it should have excess capacity, CP&L was confident it would find a ready market off-system until the capacity was required by customers in its service area.

Harris told shareholders that at the end of 1970, after 62 years, the Company had net utility plant of \$820 million. "Our construction program will require us to double our investment during the next three years, and to multiply our 1970 investment five times by 1980." He said CP&L was planning only to meet the demands customers were expected to impose.

Since earnings for 1970 were less than the dividend, some shareholders were concerned that the dividend would be reduced. Management did not consider that an alternative. Given the great demand for new capital, it was considered imperative to maintain or increase the dividend.

Second Price Increase

In August 1971 came the filings for a second general rate increase of 19.63 percent. The reasons were clear: fuel expense which required 33 cents of the customer dollar was up 51 percent in just two years; bond interest and preferred stock dividend payments had doubled to \$40 million annually; construction expenses exceeded \$700,000 per day. Customers began to be restless. So did the media. Employees worried. They were losing the white hat image they had enjoyed during the 1960s.

Spotlight published an article, "What will I tell my neighbors?" It suggested these answers:

"First, we should not apologize for having to charge more for our products. Rates have been reduced 27 times since 1934.

"Second, remind your neighbor he is using more electricity now than ever before, and paying less for it than he did 10 years ago.

"Third, CP&L's residential rates compare favorably with those anywhere else.

"Fourth, your utility needs to maintain good credit ratings to keep investor confidence and get capital for its construction at reasonable cost.

"Fifth, remind your neighbor we now are spending millions to protect the environment.

"Finally, we must spend billions in the years ahead to assure that his family and others like them have the electricity they need at home ... and at work."

The second rate case brought awards of 14.38 percent in North Carolina and 12.2325 percent in South Carolina, both effective in April 1972. One problem was beginning to surface. With publicity generated by the filing, the interim increases, the hearing and finally the decision the public gained the impression that utilities were getting multiple rate increases. It contributed to consumer unrest.

In the spring of 1971 the Company began billing inserts to share advice about how to save on the electric bill. It offered more than a hundred suggestions, ranging from insulation and storm doors to lowering the thermostat on water heaters, from shorter showers to slightly lesser comfort levels when heating or cooling. It published leaflets that were offered from its offices. Advertising shifted to how to use energy wisely.

Electric Power Research Institute

In his acceptance remarks after being installed as chairman of EEI, the trade association of electric companies, Harris said he had concluded that the mission of his leadership period should be to lift the perspective of the industry in the field of research and development. The industry had an Electric Research Council which had issued a report entitled, "Electric Utilities Industry Research and Development Goals through the Year 2000." That report outlined wide

ranging research which was estimated to cost an average of \$1.12 billion annually until 2000. Traditionally, the industry had depended on manufacturers to develop new technology, and it had paid for their research in the price of their products. Noting that in the free enterprise system it is the profit incentive which drives R&D, Harris pointed out that no such opportunity is present for a regulated utility. Regulation would require that any financial benefits produced by research go to customers, leaving shareholders in the position of taking risk with no opportunity for gain.

So he led a movement through EEI to have utilities fund an expanded research effort by collecting a surcharge on each kilowatt-hour sold. In December 1971 the EEI board endorsed the plan. In a letter to a fellow executive, Harris said the "whole concept provides an opportunity for the investor-owned electric companies to project a new and more respected image to the public. It deserves the highest priority."

Since collecting consumer dollars to fund R&D would require regulatory approval, it was significant that the National Association of Regulatory Utility Commissioners (NARUC) also endorsed the plan as a step "to provide an abundant, economical, and environmentally compatible supply of energy."

The Electric Power Research Institute (EPRI) was formed to contract for, supervise and carry out research for the entire industry. Participation was open to all power suppliers. Harris played a key role in the selection of Dr. Chauncey Starr, dean of engineering and applied sciences at UCLA, to be the first head of EPRI.

Four areas were identified by Harris as needing priority:

- 1) De-sulfurization of fossil fuels, which he described as the near-term route to making 1,000 years supply of coal available for use without ecological degradation.
- 2) The fast breeder reactor, said to be a longer-range route to energy conversion efficiencies on the order of 50 to 75 times that of light water reactors.
- 3) A significant step toward achieving useful power from thermonuclear fusion, a technology which he believed held promise of solutions for many fuel and environmental problems of the future.
- 4) Underground transmission technology, a need which Harris saw becoming more pressing as power requirements mounted.

Terming "zero growth" an ignoble retreat into the primitive past, Harris said "our commitment is not only to today's America, but more important, we are obligated to the millions of new Americans of tomorrow. Some of today's ill-advised, emotionally charged alarmists would have us stunt the growing boy for fear he will outgrow his present pants." Through research "we should succeed eventually in balancing the economic needs for electric energy with the environmental ideals of the Good Life."

During his year at the helm of EEI, Harris told the Senate Commerce Committee there was no need for legislation to raise funds for R&D by taxation because the industry was

organizing and financing its program on a voluntary basis. He button-holed other chief executives and he testified before regulatory commissions in other states to rally support for EPRI. At CP&L the directors authorized investments in EPRI of \$931,462 in 1973 and \$1,472,966 in 1974. The annual contributions grew steadily.

When EPRI reached its 15th year, A. G. Bullard, the Company's director of research, reported that CP&L's annual contribution was \$5.7 million. Sherwood Smith had been elected a director. The Company's greatest benefits from EPRI research were said to be in two areas: new technologies that avoided outages and improved the efficiency and availability of nuclear and coal generating plants.

August 1971 brought action by President Richard Nixon that was aimed at halting inflation. He issued an executive order which led James S. Newbold, manager of employee relations, to announce there would be no merit or periodic adjustments and no general pay increase for at least 90 days. It was a wage-salary freeze which dramatically underscored the extent of concern about inflation.

On a more positive note, the tax collector for Person county in which the Roxboro plant is located, announced that CP&L's 1971 property tax payment was more than 40 percent of the county's annual revenue.

EMPHASIS '72: SERVICE

The name of the sales department was changed to marketing services in November 1971. In announcing the change, Ridout said former sales personnel would be responsible for general marketing services, including customer satisfaction. It was a timely move because task forces had been working since mid-year to develop Emphasis '72: Service, a company-wide program "...to look at what we are doing to insure that the customer is, in reality, king."

Harris kicked the program off at a meeting with managers by emphasizing that "nothing is more important to us and our success than our customers. We are in the people business as much as we are in the power business. With the cost of our service going up we feel it is logical to expect that our customers will be demanding more from us. And we want to make certain we are delivering."

In early 1972, the Company made a major organizational change which in part reflected its aim to be more responsive to customers. It merged the old district operations department with the customer-related functions of the transmission and distribution department to form a division operations department in the customer services group. Edgar Geddie who had headed transmission and distribution was named head of division operations. Jim Ridout was elevated to senior vice president.

The new organization had five divisions. The Western division at Asheville was

headed by former Asheville district manager James M. Hall, the Southern division at Florence by C. Joe Turner, previously manager of the area development department; the Central division at Southern Pines by W. Burt Grant, formerly district manager there; the Eastern division at Wilmington by E. Wilson Craig who had been ecological engineering coordinator for the engineering and operating group; and the Northern division at Raleigh by Earl F. Stephenson, previously manager of transmission and distribution construction.

In the new organization, every position involved in providing service to the customer reported to the district manager. This was to facilitate dealing with customer needs and questions. Authority was pushed from Raleigh to division and district levels. Personnel in the general office became a support group. Transmission line and substation maintenance was moved to the power production department. The number of districts was reduced from 14 to 10. District offices were located in Asheville, Florence, Sumter, Raleigh, Sanford, Southern Pines, Henderson, Goldsboro, Jacksonville and Wilmington.

Geddie viewed the organizational change as a great idea. He said that when Harris, Jones and Ridout discussed the job with him, they emphasized that they expected him to help select and then train five managers to operate the divisions. District and area managers would be chosen and staffing planned to focus on greater community involvement.

As part of the '72 emphasis on service, 2,000 customers and every employee received invitations to suggest ways that service could be improved. Eleven task forces including 75 persons were involved. Work and operating procedures were revised to coordinate and expedite service to the customer, and a system was established to monitor and follow up customer complaints. Training sessions were begun for contract line crews to sensitize them to the importance of customer relations. Changes in billing practices and rate policies were initiated to eliminate customer irritants. Stub or one-way transmission feeds were identified and corrective actions explored. Sixty visually "ugly spots", six in each district, were labeled for improvement and by year-end 48 had been completed. Thirty-one substations were landscaped.

New Corporate Identity Program

A new corporate identification program was introduced. The Company's old "blood and mud" two-tone color for vehicles was replaced with a pale blue, chosen because lighter colors are safer and because it was considered environmentally compatible. The new, shorter "CP&L" logo was originated by Charles McKinney, a partner in the firm which created much of the Company's advertising. It was designed to project an image of CP&L as a clean, modern, strong, dependable, environmentally-concerned utility. There was no massive repainting of vehicles, changing of corporate signs or printing of stationery. To control costs, the new identification was phased in over several years as new purchases were made or existing vehicles and signs required repainting. Through the years, the vehicle color changed to the manufacturers' standard light blue, avoiding the extra charge for custom painting.

A General Load Reduction plan was formalized and filed with the state commissions. Designed to stretch supplies in times of tight supply, it had three phases. Phase I called for voltage reduction on specified feeders. Phase II sought to reduce load by appealing to customers to decrease non-essential uses. It included requests of major industrial customers to shed load and it required curtailment of non-essential uses in Company facilities. In Phase III designated feeders would be manually interrupted on a rotating basis, resulting in rotating blackouts.

At the end of 1972, an opinion survey conducted by an independent polling group showed that 97 percent of customers were satisfied with their service and only two percent had complaints. A year earlier, the figures had been 95 and four percent, respectively.

With the rate increases, earnings rebounded in 1972. The Company obtained permanent financing of \$324 million for its construction. Sutton 3 was completed, adding 420,000 kilowatts of new generation. The Robinson nuclear unit produced 21.5 percent of the total energy output of the CP&L system. Because the cost of nuclear fuel to produce a unit of electricity was only one-fourth as much as coal, Robinson 2 had a salutary effect on fuel costs. But the schedules for nuclear licensing and construction continued to stretch. Completion dates for Brunswick and Harris were pushed back. To meet expected 1974 demands, 11 more internal combustion turbines were purchased. They were located at a Darlington county site adjacent to the Robinson plant. They would supply 630,000 kilowatts of generation and represent an investment of \$78 million.

New Sutton Unit Could Burn Oil

The new 410,000 kilowatt unit at Sutton was a first for the Company. It was designed to burn either coal or oil. John Humphrey, plant manager, said it was engineered from the ground up with the environment in mind. One of the more visible features was a new 1,110 acre cooling lake which enabled all three of the plant's units to operate with no thermal discharge into the Cape Fear River. Construction of the \$7 million lake which required a permit from the Corps of Engineers was delayed at one point by the intervention of a local fishing club. The club wanted to save Catfish creek, a small tributary of the river which flowed through the area where the lake was formed. When the Company agreed that access to the lake would be provided for fishing and hunting, the fishing club withdrew its objection.

Sutton was the only CP&L plant to which oil could be delivered by barge. Shortly after it began operation, oil became both scarce and expensive, necessitating that the plant burn coal.

The explosion of regulation coupled with the scope of the Company's construction program led to the formation of a new special services department in the operating and engineering group. Headed by Darrell V. Menscer, formerly assistant to the group executive, its mission was to locate and acquire generating plant sites, obtain generating plant licenses and permits, coordinate regulatory and reliability matters, audit and supervise nuclear quality assurance, and provide other technical services.

As December came to a close, there was an announcement from Washington that the two percent direct loan program for electric and telephone cooperatives was being converted to insured and guaranteed loan programs at higher interest rates. It was an action for which the Company had called frequently during the previous decade.

EMPHASIS '73: CONSERVATION

On the heels of its successful 1972 emphasis on service, the Company launched 1973 with an emphasis on conservation of energy. W. P. McPherson, manager of marketing services, chaired the task force which planned the activity. He said he "viewed the energy situation as a dilemma rather than a crisis. The dilemma comes about because America is using its natural resources faster than it is producing them. We are not pushing the panic button. We are just urging our customers to use our service intelligently." Few could have foreseen how timely the emphasis on conservation would be.

In a letter to employees, Harris said the nation was facing an energy dilemma in the supply of natural gas, oil and usable coal as well as nuclear capability. "This situation makes it good business for us not only to operate as efficiently as we can, but also to step up our emphasis on the efficient use of electricity by our customers."

By the Christmas season, McPherson was urging a reduction in decorative lighting, both inside and outside, to save energy.

Rulings Delay Nuclear Plants

The summer brought two rulings, inspired by environmental concerns, which effectively delayed all six of the Company's planned nuclear plants. The director of licensing at the Atomic Energy Commission gave notification that the cooling system for the Brunswick plant had "the potential for causing serious and perhaps irreversible adverse effects on the environment of the Cape Fear estuary, and cannot be operated for an extended period without increasing unacceptable environmental damage." Weeks later the State Board of Water and Air Resources denied the Company's application for a water temperature variance on the 10,400 acre reservoir for the Harris plant.

The Brunswick ruling touched off a long battle. Originally, CP&L planned to withdraw cooling water from the Cape Fear River and discharge the warmed water back into the river downstream. But in response to government concerns, that concept was abandoned in 1969. Company engineers designed an elaborate six-mile man-made canal system which was approved by

state and federal regulators. In 1973 it was nearing completion at a cost of \$42.3 million. The system withdrew water from the Cape Fear River to the plant where it passed through the condensers, absorbing waste heat. Water was then discharged into a canal that extended 5.5 miles to the Atlantic ocean. Huge pumps pushed the water through large concrete pipes to a point 2,000 feet offshore where it mixed with the ocean waters. Included in the discharge canal was an inverted siphon beneath the Intra-coastal waterway.

Management concluded that with the plant nearing completion, it could not allow a \$600 million investment to sit idle while it contested the ruling. Further, the generation was needed to serve customers. So CP&L reluctantly agreed to begin construction of cooling towers. Meanwhile, it began studies to measure the environmental impact. In 1976 it contracted with scientists from North Carolina State University, the University of North Carolina and the University of Miami to gather data about the impact of plant operations on the estuary. With support of the North Carolina Utilities Commission and the Department of Natural Resources and Community Development, it successfully sought permission to suspend construction on the towers until the data was collected and analyzed.

The ruling from the AEC represented the inputs of 24 other governmental agencies which had reviewed the environmental impact report. Probably the most influential comment was from the EPA which had taken a position that cooling towers were the preferred cooling technology.

Data collected after Brunswick began operation was characterized as showing the impact of the plant to be no greater than that of adding one additional commercial fishing boat at Southport. The EPA had no scientific data, only speculation, on which to base its argument for cooling towers. From 1978 until 1980, the Company persisted in its position that the towers would represent an expense of \$25 million per year for 25 years that would buy no environmental benefits. Finally, in 1980, an agreement was reached under which the Company made modifications, including diversion screens, to its once-through cooling system at a cost of \$9 million annually and was relieved of the requirement for towers.

EPA Influenced State Decision on Harris Lake

The decision by the State Board of Water and Air Resources that cooling towers were the preferred technology for the Harris plant also reflected input from the EPA. The AEC in a final environmental impact statement earlier had found the proposed lake acceptable. Behind the scenes, EPA threatened to withhold funding for other projects in North Carolina if the state insisted on sanctioning the large lake. Putting 10,400 acres under water was said to be inappropriate and incompatible with good environmental practice. This decision required revision of the Preliminary Safety Analysis Report and the inclusion of details not previously required in the PSAR, triggering delay in the plant licensing process.

The News and Observer commented editorially: "The cooling towers will cost rate

payers perhaps \$50 million more, will require more water ... to make up for evaporation, will prevent even marginal recreation benefits in a smaller lake, and will not cool the nuclear plant's steam condensers even one degree more efficiently.... EPA is embracing a power plant cooling concept that undoubtedly is sound for many other nuclear plant sites.... State agencies must fall in line. But imposition of the concept in this instance is both arbitrary and wasteful."

The Wall Street Journal reported that utilities were finding nuclear plants costlier and less efficient than had been expected.

Nuclear Mutual Insurance Company

Congress earlier had passed the Price-Anderson act which provided third-party nuclear liability insurance, thereby limiting the risk for utilities operating nuclear plants. The utilities identified a need for additional insurance to provide coverage for damages to nuclear generating plants, including contamination. The only source of such insurance was a pool of stock and mutual companies. Premiums were high. Charles D. Barham, Jr., who later became an executive vice president of CP&L, recalled that CP&L and eight or nine other utilities decided to form an industry mutual company -- Nuclear Mutual Limited. Its first policies were written in 1973. "It helped meet the risk side of the nuclear equation," Barham remembered, "and it was one of the more successful initiatives of the nuclear power industry." Barham was chairman of Nuclear Mutual for six years.

After the 1979 accident at Three Mile Island, another industry mutual insurance company was formed -- Nuclear Electric Insurance Limited (NEIL). It was modeled after Nuclear Mutual and its purpose was to provide coverage for the incremental cost of replacement power in the event of prolonged loss of nuclear generation. NEIL also provided decontamination, decommissioning and excess property insurance for nuclear facilities.

Graham Comes to CP&L

In 1973 Jones was elected executive vice president. William E. Graham, Jr., came from the Court of Appeals to the Company as vice president and senior counsel. His career would see him advance to vice chairman. Darrell Menscer, manager of the special services department, and Albert Morris, manager of public relations, were elected vice presidents.

Graham often recalled that when he was leaving the Appeals Court, one of the justices told him he was going from "trials to tribulations." He had practiced law in Charlotte before his appointment to the bench in 1969, had been active politically, and had established a close personal friendship with James B. Hunt, Jr., who later would serve North Carolina as lieutenant governor and governor. A native of West End in the sandhills, Graham attended the University of North Carolina at Chapel Hill and established himself as a leader among Young Democrats. When he arrived at CP&L, he quickly became concerned about the pace at which regulation was changing and about the amount of new construction that was planned. He feared that from a pricing

standpoint, the Company would outrun the tolerance of customers and be unable to recover fully its costs. Associates came to respect him for his integrity, his high standards, and his ability to see the downside of proposed actions.

Two new departments were established. Computer services was headed by James P. Cooke who had been involved with electronic data processing from its beginnings in the Company. The other was power plant construction which was headed by McDuffie who had managed construction of CP&L plants at Asheville, Roxboro and Robinson. The operating and engineering group was renamed the engineering, construction and operation group.

Electric Utility of the Year

In the fall of 1973 Electric Light and Power magazine's panel of judges named CP&L the outstanding electric utility of the year "... for its overall performance on behalf of its customers, its employees and its shareholders."

Editor John Marks wrote: "The Spirit of the New South is exemplified in Carolina Power and Light Company. It not only is doing all the right things, but it is doing them better than other utilities.

"A quiet confidence pervades the entire operation, despite the challenge of faster growth than any other moderate-sized utility in the nation. It happened in the best of times in a region ripe for change ... a change managed well by a perceptive team."

The Magazine cited CP&L's management structure and staffing, its aggressive commitment to nuclear technology, the addition of employees to cope with growth, and the "foresight" of management. It spoke of "operating in an austere mode."

Frank Daniels, Jr., publisher of The News and Observer, hosted the Raleigh luncheon at which the award was presented. He said Harris "has a difficult job": having to battle storms, editorial writers, the State Utilities Commission, the lack of public knowledge surrounding atomic energy, and most of all, deal with the fantastic need for capital funds.

The OPEC Oil Embargo

For decades the United States had the ability to produce enough oil to fuel its economy. But the balance point had been passed and in the 1970s the country was dependent on foreign sources. That made a faraway struggle between Israel and its Arab neighbors particularly troubling. Representatives of 10 Arab nations, meeting in Kuwait on October 17, 1973, introduced the "oil weapon" by agreeing to cut production by five percent until Israel withdrew from the Arab territory it had occupied since 1967.

One day later, Saudi Arabia announced it would cut its production an additional 10

percent and halt all shipments to the United States unless this country modified its position in the Middle East war. Ignoring the threat, President Nixon the next day announced a \$2.2 billion aid package for Israel. The Saudis responded on October 20 by announcing a total stoppage of oil shipments. Other Arab nations which were members of the Organization of Petroleum Exporting Countries (OPEC) followed suit, leading to what became known as the OPEC embargo.

At first the action caused little public concern or even awareness. It was crowded off the front pages by news about Watergate. Most of the oil originating from the Arab nations went to Europe. Experts predicted the embargo would be dropped as soon as the differences between Egypt and Israel were resolved. Within weeks, it was clear such optimism was ill-founded. On November 5, the Arab members of OPEC announced they would curtail their shipments by 25 percent from September levels. The American consumer quickly felt the impact. Only days passed before gasoline prices rose from 38 cents per gallon to 50 cents.

Time magazine in its November 23 issue reported: "An air of crisis is spreading across the United States as the deepening energy emergency triggered by the Arab oil embargo has begun to pinch in small but ominous ways. Leisure activities, from boating trips to night football games, are being cancelled; gasoline-short service stations are temporarily shutting down; and commuter and school bus schedules are being pared for lack of fuel. For the first time since World War II, there is talk, serious talk, of rationing gasoline and home heating oil. Meanwhile, from Capitol Hill to the tiniest town, in board rooms and living rooms, Americans hastened to make up for lost time in meeting what could become the most serious economic threat to face the nation since the Depression."

The President acted to achieve conservation. He announced mandatory fuel oil allocations, cut jet fuel supplies for airlines, asked gasoline stations to close on Sundays, and urged states to reduce highway speed limits to 50 miles per hour. He asked Congress to give him emergency energy powers.

While consumers lined up at the pumps to buy gasoline, CP&L found itself drawn into a new world of uncertainty. Forbes magazine said CP&L had been the fastest growing electric company in the nation over the last five years. Peak demand had grown 13.6 percent in 1972 and would grow 14.4 percent in 1973.

But coping with growth was turning into an ever bigger nightmare as inflation spiraled, regulation caused expensive and unpredictable delays in plant construction, and OPEC-induced energy costs upset traditional load forecasts.

In October the Company asked for its third general rate increase, 21 percent for retail customers.

Stock Prices Sink Below Book Value

Even with price increases that customers found shocking, the Company's financial picture worsened under the pressures imposed by construction. In November 1973 it sold three million shares of common stock for \$21.25, about \$1.75 less than book value. It was the first time CP&L had ever marketed an issue of common at less than book. Only eight years earlier the market price for CP&L common had been near 4.5 times book. One year later the situation would be even more distressing.

There were other developments in 1973. President Nixon announced "Project Independence". One of his goals was to have 1,000 nuclear power plants in operation by the year 2,000 to help assure the nation's energy independence. Utilities had announced plans to complete 16 nuclear units in the Carolinas by 1981.

The third unit at Roxboro with 720,000 kilowatts of capacity was declared commercial in July. Preliminary construction began on the fourth unit which was a duplicate of the third. There was recognition by the Western North Carolina Regional Air Pollution Control Agency for efforts to improve air quality by installing at the Asheville plant electrostatic precipitators that were rated 99 percent efficient. Similar precipitators were being installed on all other major coal-burning facilities to comply with the Clean Air Act. The Company suspended its conservation advertising for two reasons. The media was filled with conservation messages from governmental agencies and other sources; and the Company needed to curb expenses wherever it could.

An 11-point marketing and area development program, to put still more emphasis on conservation, was outlined for 1974. It specified that no additional loads would be solicited from new or existing customers, Company personnel would urge and assist customers to reduce their usage by 10 percent, off-system calls on prospective industries would be discontinued, wholesale customers would be encouraged to establish conservation programs for their users, employees would be encouraged to reduce energy usage by their families, and the message to customers would be that the fuel crisis may not be temporary and it could become more severe.

1974: CHAOS IN THE FUEL AND FINANCIAL MARKETS

Major problems confronted CP&L as it entered 1974. There was chaos in the coal markets. Prices were soaring. Quality was unpredictable. There was urgent need to find a way to adjust rates quickly to cover fuel expense which for the year would require 50 cents of every dollar consumers paid for electricity. Consumers were increasingly irate, demanding political action to control their ever more burdensome bills. Either way one turned, CP&L and other electric utilities were on the proverbial hot seat. To get people to understand the very logical reasons why rates had to go up was near impossible. One official said "we were trying to get them to listen to something they didn't want to hear; to understand something they didn't want to believe." Opportunists sought to make political hay.

The Company requested and in February was granted a fossil fuel adjustment clause to allow monthly adjustments in charges. It yielded no profit, only the ability to recover in a timely way the expense of fuel already burned. Management considered this a vital step toward financial stability.

The general rate case, filed the previous October, was bogged in a regulatory process faced with an unprecedented work load. After the Company's first rate case, the Public Service Commission in South Carolina had adopted a practice of waiting for the North Carolina Commission to act before issuing its rulings. That allowed it to assure equitable rates for customers in its jurisdiction. An 11 percent interim increase was allowed in two steps. When October 1974 came, the Company, as permitted by law, placed a 20 percent increase into effect pending the outcome of the hearing. Officials explained that it was the only way to protect the Company and its investors since higher rates, if authorized, could not be collected retroactively. Consumers would get a refund with interest for any amounts collected in excess of what was finally allowed.

In April, Consolidated Edison, the big New York company, skipped the quarterly dividend on its common stock, sending shock waves through the financial community. Electric utility stocks had been considered "safe", the dividends a dependable source of income. The entire industry was impacted. Postponement of nuclear plants was commonplace. When the companies sought to resume nuclear licensing, they found the requirements had changed. They were shooting at a new target.

Graham compared what was happening in nuclear regulation to a game called "Chinese" baseball which he played as a boy. When the batter hit the ball, one of the opposing players would pick up the base and run with it so that the batter could not reach base safely.

Harris Seeks Public Understanding

In an effort to generate better understanding and relieve some of the pressure that

was building on state regulatory commissions, Harris held press conferences in Raleigh, Asheville, Wilmington and Florence. He focused on the four factors driving electricity prices up: new generating plants cost more, the money we borrow to build them costs more, fuel is up dramatically, and we are spending \$40 million annually for equipment to protect the environment.

In July testimony before the North Carolina Utilities Commission, Harris noted that in the four years from 1970 through 1973 electric utilities had sold 168 issues of common stock for \$6.1 billion. He said the market value of the stock had dropped to \$3.5 billion, a 40 percent loss. While industrial stocks in the Dow-Jones average sold at 15 percent above book, some utility stocks were selling at only half their book value. He attributed the nationwide capital crisis for utilities to a regulatory system that had failed to respond adequately. The market price for CP&L stock was down to \$14.25, only 63 percent of book. Its downward slide continued, causing delay of an additional sale of 3.5 million shares of common scheduled for August. By year-end, the market value was only \$10.87.

As it grappled with the need to balance construction with the capital it could reasonably expect to raise, management scaled back to 12 percent the margin of reserve generating capacity for which it was planning. It was no longer financially feasible to construct a system to meet the earlier goal of 18 percent, a margin more consistent with what the Federal Power Commission and other agencies recommended for reliability. CP&L had operated in recent years with a reserve margin below 12 percent. The result of this planning was to push completion of the Harris plant into the 1980s, delay other units and reduce construction expenditures by \$410 million over a three-year period.

Joint Coal Mining Venture

Sparked by the OPEC embargo, fuel prices soared. Taking a longer term look, CP&L decided to enter into a partnership with Pickands Mather and Company to organize and operate the Leslie Coal Mining Company. Pickands Mather owned properties which would yield high quality, low-sulfur coal. CP&L would put up 80 percent of the capital and would be guaranteed at fair market value 80 percent of the production from the mine for up to 25 years. Anticipated production was 800,000 tons per year. Other utilities were embarking on similar ventures.

But the more immediate problem was getting coal for 1974. The cutoff of oil to some utilities and industries forced them into the coal market where demand already was stronger than supply. Buyers became willing to accept coal with no quality guarantee. Producers loosened quality controls in the effort to step up production. Coal quality dropped dramatically. From November until January, the average price to CP&L for a ton of coal at the mine went from \$9.50 to \$17.80. For March it was \$27.90. Jones told directors that the Company had 78 percent of its coal needs under contract. Only about 80 percent of this was being delivered, leaving about 40 percent of the total to be bought in the spot market. During the first quarter, CP&L bought regularly. Utley who was responsible for power supply said the extreme conditions resulted in shipment of some coal that

was so inferior it could not be burned. The Company restored its quality requirements and the available coal shrank. Purchases dropped. By mid-July the Company's coal stocks were down to 35 days supply.

Faced with the prospect of a November strike by United Mine Workers, CP&L embarked on a strategy to build its supply to 90 days as it customarily had done when a strike was expected. The market, propelled by an unusually strong export demand, was even higher than it had been in the spring. One witness said the Japanese came in "like a swarm of bees" and drove the market up. The Company got the coal it needed. Then it was second-guessed by North Carolina's attorney general for its strategy of delaying purchases until fall. He complained that a monthly fossil fuel adjustment proposed by CP&L should be declared "unjust and unreasonable".

After a hearing, the State Utilities Commission ruled that while the coal had been more costly, the Company's management decisions based on factors known at the time were prudent.

The Most Expensive Power Is No Power

Repeated questioning about the decisions made by CP&L and other utility managements weakened consumer confidence. At a conference sponsored by the Federal Energy Administration, Harris suggested that Commission-ordered audits by independent firms might be one way to evaluate management and restore confidence in the regulatory process.

He told a business group that market prices less than book for the common stock of good utilities mean investors expect the costs of providing electric service to rise faster than management and regulation will cause them to be reflected in pricing. This he saw as a threat to construction programs, setting the stage for a closing comment:

"An inadequate power supply will impose economic constraints far more costly for consumers and working people than electricity pricing that fully covers necessary costs. Yet in the context of current conditions, the nation appears to be on a direct course and full speed ahead toward significant and disastrous power shortages three to five years from now... There is no power that is more expensive than no power at all."

Lilly said later that the implications of the comment were poorly understood.

It stimulated a News and Observer editorial. "CP&L's growing pains -- one is tempted to say gluttony pains -- are at the root of the problem. It is issuing stock and borrowing money at an extraordinary pace to finance expansion. Through repeated rate hikes ... it is soaking its ratepayers to pay the price of this growth in more stock dividends and bond interest payments....

"CP&L's management insists that it simply must expand ... to meet increasing demand.... The Utilities Commission has done little more than rubber stamp ... expansion requests.

It has yet to ask seriously why the Company is expanding so rapidly and whether the pace of this expansion is in the public interest."

Harris responded in writing. "Until the General Assembly changes the direction of economic opportunity and development in North Carolina, CP&L will have to continue building to meet the expanding power needs..."

Across the Carolinas, the press was reporting the hardship caused by residential electric bills that had risen 50 percent in just nine months after OPEC came onto the scene. Radio talk shows encouraged petitions to the Utilities Commission.

Meanwhile, a customer information survey found that 81 percent were satisfied with their service, 38 percent thought the price was too high and 59 percent said they were "exerting much effort" to save energy. More than half had color television sets, 21 percent lived in all-electric homes and 23 percent had central air conditioning. Over 41 percent had electric clothes dryers and 20 percent used electric dishwashers.

To operate new plants, serve a growing number of customers and respond to regulation the employee population was increasing steadily. From 2,641 at the end of 1969, the number reached 4,742 at the close of 1974.

Skaale Energy Control Center

In September 1974 the Company began use of a new energy control system. It had outgrown its first computer for economically controlling system generation. That computer had been in use since 1958 and it was designed for a system that had only hydroelectric and fossil plants. The new system continuously monitored system load and adjusted the output of each generating unit, taking into consideration efficiency, fuel costs and transmission losses.

In addition to optimizing efficiency of the CP&L system, the new control system provided information on generating costs at different plants to enable dispatchers to buy from or sell power to neighboring utilities when it was economically beneficial. Further, it allowed dispatchers to monitor the transmission system to determine if troubles might develop from the unexpected loss of a key transmission line.

A significant concept of the control system was management by exception. Tremendous volumes of data were supplied from remote locations which the system evaluated and, in many cases, acted on automatically. For other items the system would notify the dispatcher if something was not functioning properly. The effect was to give the dispatcher a manageable amount of information.

On March 16, 1977, the energy control center was named for Arthur J. Skaale who had been vice president for engineering and operating before his retirement in 1965. His peers saw

him as a brilliant and pioneering power supply engineer who never ran out of ideas. He helped develop many of the operating principles which enabled companies to schedule interchanges of power, operate their systems in parallel, and increase reliability and efficiency through interconnections. For 10 years he had lived in a cottage at Method on the west side of Raleigh, the location of the Skaale Center. Dispatchers recalled that as manager of engineering and operating he faithfully telephoned every evening to check on CP&L system conditions.

1975: PROTESTERS PRESSURE POLITICIANS

If ever there was a year that tested the fortitude of CP&L employees, 1975 was it. Consumers were appealing to politicians for action that would lower electric bills. Petitions were circulating. Representatives of Carolina Action canvassed residential areas, seeking signatures on petitions and accepting contributions to help finance their effort. Legislators were meeting in Raleigh and in Columbia. It was small consolation that the same kinds of protests were occurring all across the country. Unfortunately, there was little officials in either state could do to influence the cost of investment capital which largely came from out of state, the price of oil and coal, the pricing of equipment for new plants or about federally-mandated environmental requirements. Any actions by the legislatures would be more cosmetic than substantive.

In early January the North Carolina Commission finally issued its order approving the 21 percent rate increase which had been requested 15 months earlier. In an effort to assist low income families, the Commission ordered that prices for low-use residential customers be rolled back. It estimated 224,000 families would benefit from the action. Advocates called this a form of lifeline rate. To increase the incentive to conserve energy, the Commission specified that general service schedules which applied to commercial and industrial customers be redesigned to include "a 12-month 90 percent ratchet." This meant the minimum demand charge for these customers would be 90 percent of their actual peak demand for the previous 12 months.

The Commission urged conservation, saying that "the United States is still confronted with an energy crisis, the solution to which is not yet in sight.... Reasonable and prudent conservation measures on the part of all will speed the day that energy prices will begin to level off."

An order from the South Carolina Commission followed. It too rolled back rates for low use residential customers, giving the Company about 83 percent of the dollars represented by the original request.

The commissions had been bombarded with protests from low- and middle-income customers. Carolina Action advocated a "lifeline" rate. In North Carolina, the Commission suggested in its order that the national or state government consider a program similar to food stamps. It said it had agonized at length as to whether there was some equitable way to administer

the public utility laws and make special provision with respect to utility expenses for low income, elderly and handicapped people. It decided "we cannot do so without creating additional inequities."

A major fallacy with the lifeline concept was that those with low income were not necessarily the people who had low residential usage.

Ad hoc protest groups had formed. On January 13 more than 1,000 persons gathered in Fayetteville to meet with their legislators. One day later, members of Consumers United picketed the Company office in Wilmington and two members appeared before the Wilmington city council to seek its aid. Similar groups organized in Raleigh, Sanford, Asheboro, Florence, Sumter and in cities served by other utilities. In every office, employees were besieged with complaints from distraught customers.

The News and Observer headlined one of its reports, "Customers burning over electricity bills." L. A. Pearce, Raleigh district manager, said a few months earlier customers were asking why the bills were so high. "Now they are saying they can't afford to pay."

The Greensboro Daily News editorialized: "The rising cost of fossil fuels probably signals a permanent adjustment in the living standards to which Americans have accustomed themselves. Maybe the power companies were foolish not to foresee it, but their executives are not prophets. The free handed consumption of cheap electricity may be gone for good, and if so, the politicians have an obligation to tell the people so and fix their attention on real rather than imagined remedies."

On January 29 there was a public hearing before the N. C. House of Representatives. Businessmen joined residential customers, complaining that utility bills were forcing layoffs and wrecking family budgets. One man read scripture. Another compared the fuel charge to the British stamp tax of revolutionary days. Duke Power spokesman William H. Grigg said his firm "would most likely be bankrupt today" had it not been for the fuel adjustment clause. He added, "you can't get the cost of power to go down by destroying the power companies." Speaking for CP&L, Sherwood Smith emphasized that, except for the fuel clause, the Company's current charges were based on cost figures that were two years old.

The deputy attorney general pushed onto the scene by calling for a rewrite of state laws governing utility regulation. Among other things, he proposed to examine the Commission's authority to allow interim increases.

Fuel Clause Rolled Back

Several thousand protesters streamed into Raleigh the next day, bringing to the Utilities Commission petitions which were said to bear 200,000 signatures. They gathered on the Capitol grounds to burn in effigy a likeness of Reddy Kilowatt. It was labeled "Reddy Rip-off". They read a citation to CP&L "for the effective manner in which they have plundered the public

pocketbook in the last year." Later, the protesters converged on the Legislative building.

The Raleigh Times commented that "the stirring sight of hundreds of angry North Carolinians marching on the legislature and the Utilities Commission was visible evidence of massive consumer indignation over the soaring cost of electricity."

The following Friday afternoon a telephone call to CP&L from the Utilities Commission revealed that an order was being issued to allow only 75 percent of the fuel adjustment to be collected for a period of up to 60 days. It applied to Duke Power and Virginia Electric, too. Harris began a series of meetings with managers that continued through the weekend. His concern was how to reduce cash flow immediately. On Monday came his announcement: salary reductions of five percent for employees and 10 percent for the 16 highest salaried executives, deferral of tree trimming and plant maintenance, suspension of payments to EPRI for research and development, a halt to some construction activities, and a ban on corporate contributions for charitable purposes. He described the actions as "making the cloth fit the table."

When the written Commission order was received on Monday, it specified the reduction in the fuel adjustment would apply only to residential billings. Thus the revenue loss was not as great as had been feared. But Wall Street took notice. The prices of CP&L and Duke shares dropped quickly. Sell orders on Duke stock were so heavy that trading was suspended temporarily.

On Tuesday the chief executives of the companies appeared before a joint meeting of the Senate and House public utilities committees. Harris told the panel that CP&L had revenues of \$461 million in 1974 and spent \$236 million for fuel. In cents per million BTU, fossil fuel expense went from 50.57 cents in 1973 to 118.82 cents in 1974.

Momentum to change the fuel clause continued to build. Lt. Governor James B. Hunt, Jr., proposed abolishment of the fuel clause and establishment of a "separate and expedited" adjustment procedure to take its place. He called for enlarging the Commission and greatly reducing regulatory lag.

Claude Sitton, executive editor of the News and Observer and frequent critic of the CP&L, wrote in his Sunday column that "a bankrupt CP&L would be in no one's best interest. The pensioner left shivering by an inability to pay inflated rates would be even worse off if the generators stopped spinning."

The North Carolina Commission set a hearing on the fuel adjustment clause for late February, opening it to the three companies, the attorney general and other parties. It also ordered an extension of time from the usual 20 days to two months before a customer's service could be interrupted for non-payment.

Bond Rating Downgraded

While all this was happening in Raleigh, Moody's Investors Service downgraded the Company's bonds from A to Baa and its commercial paper from Prime 1 to Prime 2. Ironically, as consumers protested prices, the investment community was sending a signal that revenues from customers did not cover the cost of providing service. For the first time in its history, CP&L was considered a "speculative" investment. Teacher and state employee retirement systems in the Carolinas were prohibited from buying securities rated less than A. They could no longer invest in CP&L. The downgrade limited the investment funds available to the Company and raised the cost. When the next bond issue was sold, Harris estimated the interest rate was 1.5 percent higher than for a comparable A-rated company.

The gravity of the financial picture was underscored repeatedly. In January the Company sold four million shares of common stock for \$14.75, only 63 percent of the book value at the time. Harris commented: "When someone suggests that the investor suffer a little during the current recession, I suggest that earlier investors who paid \$43 or \$35 or \$32 for their shares have been hurt badly by the \$14.75 price."

The Company had to negotiate a March sale of preference stock because under its charter it did not meet the financial requirements for issuing preferred stock. Similarly, when first mortgage bonds were sold in April, the Company found no market for the usual 30 year bonds. It had to settle for nine years and an interest rate of 11 percent.

CP&L's fuel adjustment charge which peaked at just over one cent per kilowatt-hour for January declined steadily thereafter, dropping 22 percent in March and 40 percent by April.

Fuel Clause "Reasonable Method"

After a hearing which generated renewed attacks on CP&L's coal buying strategy, repeated calls for repeal of the fuel clause and created a field day for the media, the Commission decided the fuel clause was a reasonable method to adjust rates to reflect changes in fuel expense. It changed the procedure to require monthly hearings on proposed charges, hoping "to eliminate misunderstandings and uncertainties in the minds of the consuming public." It allowed the utilities to resume collecting the full amount on April 1. CP&L estimated the two-month reduction of the fuel charge cost it \$3 million.

More importantly, the Company desperately needed further rate relief. All of the protests did nothing to slow inflation. But in the prevailing political climate, management decided to delay filing in North Carolina until the legislature adjourned.

In a message to employees, Harris explained that the pay cuts would not have been made had there been any way to avoid the action and preserve the security of "our jobs. We were faced with the immediate necessity" of finding expenses we could cut that would be reflected in February. His theme was that curtailing expense was critical to the Company's ability to raise

capital to maintain construction on the almost finished Brunswick plant and get it into operation. His ultimate concern was that employees understand why the Company had elected to continue dividend payments while their pay was reduced.

Previous pay levels were restored after four months. One unanticipated benefit of the cuts was to dramatize for the Commission and the political community just how fragile the Company's financial situation was.

Responding to its experience, the Company called on a management consulting firm to help it design a fuel management system which used the latest computer technology. Invoices for freight and coal were generated internally. Better controls assured that purchases would be at the lowest available prices and invoices would be paid promptly. The new CP&L system provided history about the supplier and the mine from which shipments came. It became a model for other utilities.

Construction Work in Progress

Earnings statements showed that without the Allowance for Funds Used During Construction (AFUDC), the Company was earning nothing to pay common shareholders for use of their money. And AFUDC produced only a credit on the balance sheet -- no hard dollars. It was an accounting procedure by which interest on money invested during plant construction was added to the cost of the plant. It would produce no real income until the plant was finished and put into rate base. Therefore, a portion of the capital raised for construction sometimes had to be used to pay dividends on common stock. Management believed that to omit a dividend would have been to cut the lifeline to raising capital.

Lilly noted that AFUDC was 49 percent of the earnings for common stock in 1972, 106 percent in 1974 and 58 percent in 1976. Explained another way, the Company had no earnings from selling electricity to its customers in 1974. The earnings it did have from construction were only an entry on the books, a promissory note of sorts. Financial writers described AFUDC as "phantom" profit. There was no spendable cash flow.

One positive result of the sharply higher prices for energy was to give impetus to conservation. Homeowners suddenly found it economically attractive to install additional insulation, add storm windows and doors, and modify their personal habits by actions such as using less hot water. Industries which previously had been unable to justify investment in energy-saving equipment now found it necessary if they were to remain competitive. Major CP&L customers introduced plant innovations which cut energy use by up to 40 percent. CP&L industrial engineers assisted manufacturers in applying energy-saving techniques.

As a result of these changes, the forecasting of future demand became extremely difficult. Growth in energy sales was only two percent annually for 1974 and 1975. But peak demand grew 6.1 percent in 1975. Forecasters debated whether there was elasticity in the demand

for electric energy.

Center Plaza Building

Against a background of financial strain, the Company announced in January that it would relocate its general offices to the Center Plaza building which would be constructed on Fayetteville street in downtown Raleigh. General office employees were housed at 11 different locations. Bringing them together figured to increase efficiency. Center Plaza would be ready for occupancy in late 1977. The Company made it plain that it would not erect the building and it would not own it. But by its decision to keep its headquarters downtown, even in a leased building, it was pumping new life into efforts to revitalize the area.

The move from the Durham Life building, later known as the Wake County Office Building, came in November and December, 1977. General offices of the Company had been in the Durham Life building for 35 years. The 21-story Center Plaza structure was the tallest in Raleigh at the time. It had an open-landscape concept with acoustical screens to divide work areas and allow easy rearrangement of space.

First Nuclear Power in North Carolina

On March 20 the first Brunswick unit achieved criticality. It produced the first nuclear-generated electricity in North Carolina on April 29, underwent weeks of test operation and was declared commercial on November 3. Ed Hollowell, a man who had a wealth of experience in fossil generation, was the manager. He was followed by Fred Tollison who in turn was succeeded by Charles Dietz. The task for managers at Brunswick was very demanding and stressful.

With nuclear power under attack nationally, a group of 32 eminent scientists, including 11 Nobel Prize winners, issued a statement in New York saying "we can see no reasonable alternative to an increased use of nuclear power to satisfy our energy needs. On any scale the benefits of a clean, inexpensive and inexhaustible domestic fuel far outweigh the possible risks."

But the nuclear attack which had been led by Ralph Nader since the early '70s continued. Nader was a Washington-based consumer advocate. Public criticism had grown so loud that the Atomic Energy Commission, characterized as licenser and promoter, had been divided into the Energy Research and Development Administration and the Nuclear Regulatory Commission at the beginning of 1975. Every nuclear plant was licensed individually and custom built. Voices within the industry began to call for standardization of design as a means of expediting construction and lowering costs. Local intervenors in the licensing process got assistance and encouragement from national sources such as the Nader organization. Patrick W. Howe, who headed nuclear licensing for CP&L, said the NRC became adversarial, insistent on treating utilities at arms length, its wants difficult to discern.

As early as 1973, Nader joined forces with the Union of Concerned Scientists to question the safety of nuclear plants. He called for a moratorium on proposed reactors and those under construction. News reports quoted Nader as saying he would go to Congress, the courts and the stockholders of electric companies with the message that nuclear plants "represent bad economics, dangerous immature science and incestuous politics."

Three university scientists claimed new evidence that an earthquake could occur in the Southport area where the Brunswick plant was located. A nationally-known psychic added sensationalism by predicting the date on which an earthquake would occur. To dispel public concerns, several geologists announced they would be in Southport at the hour of the predicted quake. Nothing happened. But the NRC required CP&L to install seismic monitoring devices and make further studies which cost \$500,000. The incident illustrated how easily the investment in a nuclear plant could escalate.

Project Communicate

The Company launched a massive, new effort to communicate with its customers which it called Project Communicate. Initially, customer service representatives focused on all-electric residential users, seeking to meet with them individually and in small groups to draw out their concerns and respond to them. By year-end they reported 30,000 contacts. The program, born out of the need to gain better public understanding of the pressures which were forcing rates up, eventually reached more than 60,000 customers annually.

In North Carolina the General Assembly "abolished" the fuel adjustment charge, providing instead for frequent Commission hearings to adjust the fuel cost component (approved fuel charge) included in the base rate. It acted to strengthen the Commission by increasing the size from five to seven commissioners, and to reduce regulatory lag by authorizing hearings by three-member panels.

In July the Company filed its fourth general rate case, asking the North Carolina Commission to grant 12 percent on an interim basis and 22 percent permanently. Five weeks after the filing the Commission granted the interim, saying that further downgrading of CP&L bonds would have "serious and far reaching consequences not only to the company but also to its customers." The filing in South Carolina was for 23 percent with a 12 percent interim.

The summer brought another development which would prove a financial help to the Company. Electricities raised the question of whether some or all of its members could buy an interest in CP&L generating plants. Smith indicated a willingness to discuss the possibility. There was a precedent. Georgia Power had sold an undivided interest in some of its plants to the Oglethorpe Membership Corporation, the Georgia organization of REA co-ops.

With capital unavailable on reasonable terms and revised forecasts indicating a slower growth, the construction plan was cut to support a growth rate of 6.5 percent annually. That

meant Roxboro 4 was pushed out to 1980, a coal-burning plant at the Mayo site in Person county to 1983, and the first Harris unit to 1984. The construction budget for 1976 was down to \$270 million from expenditures of \$381 million in 1974. There was genuine concern that the reduced construction would lead to power shortages in the early 1980s.

Management Performance Audit Ordered

In December the North Carolina Commission issued an order soliciting proposals for management performance audits of CP&L, Duke Power and two telephone companies. Harris who had advocated the audits in testimony before the Commission observed: "If it indicates there are ways we can save money in our operation, that certainly will serve the interest of our customers. If it shows that we already are managing efficiently, as we certainly believe that we are, it will provide reassurance for our customers that their electric utility is doing a good job for them."

For several years, the Company had been measuring its performance by comparing itself with seven other southeastern utilities. Those measurements had been used by Harris in an appearance before N. C. Senate and House committees to demonstrate the quality of CP&L's performance. Joe V. Henderson who helped generate the comparisons said they were useful to management and regulators because they provided yardsticks for forming objective judgments about how well the Company was doing in different areas. He said CP&L was one of the first utilities to establish corporate goals, and the yardsticks were a useful tool for doing this. To give added emphasis to the development and use of such data, a new department of corporate performance analysis was formed. Darrell Menscer headed it.

Howe was named manager of special services, which later became the technical services department, succeeding Menscer. He had come to CP&L in 1971 from the Atomic Energy Commission's division of reactor licensing where he was chief of the site, environmental, and radiological safety group.

Hearings on the rate case filed in July were underway in December before a three member panel, reflecting the speedier new procedure. One of the witnesses, Eugene W. Meyer of a New York brokerage firm, testified that CP&L had sold common stock below book value on its last three offerings. Referring to the loss of its A bond rating, he said that "If the Company's senior securities are not deserving of an A rating by both bond rating agencies, enormous increased costs will continue to accrue, in the long run, to customers."

Harris had extended his influence in national affairs. He was chairman of the Federal Power Commission's National Power Survey, a director of the U. S. Chamber of Commerce and the National Association of Manufacturers, a trustee of the Committee on Economic Development, and a member of the Business Council and the Business Roundtable executive committee. He used those forums to call for a national energy policy which "should balance the need to protect the environment with reasonable use of domestic resources to supply energy. As it is now, some 50 committees and agencies of the federal government administer a fragmented energy

program. Until this inefficient system is streamlined, there is little chance for developing a comprehensive program to resolve the national energy dilemma."

In an address before the annual meeting of EEI, Harris declared that electric utilities had the responsibility to the American public to close the energy gap with more electricity generated from coal and uranium as petroleum and natural gas became scarcer and more expensive. To help utilities get capital, he advocated that regulators allow investments in new plants under construction to be placed in rate base.

1976: TURNING THE FINANCIAL CORNER

Pressures on the Company and its employees eased in 1976. The North Carolina Utilities Commission started the year on an encouraging note with a February decision to allow the full 22 percent retail rate increase requested only seven months earlier. Regulatory lag was shortened. The Commission said the approved residential schedules "reflected a more equitable and effective rate design."

Later, the Commission focused on opportunities to encourage voluntary load management, asking the utilities to supply information about plans for peak-load pricing, time-of-day metering and load management. Company representatives in South Carolina began an energy-conserving activity with builders of new homes that became the "Common Sense" concept, and by 1977 it was adopted as part of the customer service program. Features of Common Sense structures included extra insulation and high efficiency heat pumps. The first Common Sense House was constructed at Marion, S.C. Later the Common Sense program was expanded to include apartments, commercial buildings and manufactured homes.

The cumulative impact of 1975 and 1976 general rate increases, including those for wholesale customers, was to add \$146 million to 1976 revenues. Earnings rebounded to \$2.74 per share. Industrial activity returned to a more normal level, propelling energy sales to a 7.7 percent growth. Total cost for fuel dropped, requiring only 33 cents of the revenue dollar. Operation of the two nuclear units saved more than \$50 million annually in fuel expense.

Continuing its effort to bring reason to the debate about the price of electricity, the Company noted in its communications that from 1960 through 1975 the average household use of electricity rose from 5,067 to 11,094 kilowatt-hours. Average household income climbed from \$5,643 to \$13,285. So while the use of energy more than doubled, the percentage of income required to pay the bill rose only 51 percent -- from 1.73 to 2.62 percent. In short, while the price of electricity admittedly was much higher, it had not risen as rapidly as family income. Harris used the figures to demonstrate that the Company had done a good job for its customers through a very trying period.

He went further, encouraging consumers to become more protective of their own interests in guaranteeing adequate energy. In a speech to the Cheraw Chamber of Commerce, he said "consumers have every right to demand that regulatory agencies hold electric rates at the lowest reasonable level. But I would suggest they go one step farther in their own interest, and simultaneously insist that the price be set high enough not to jeopardize the availability of adequate energy in the future."

It was an election year. Polls showed electric rates to be an emotional issue and energy to be a major concern all across the country. The regulatory climate had stabilized, and some voices were coming to defense of the utilities.

In Raleigh, WPTF radio commented editorially: "Many of us have complained about increases in electrical rates. But we did no complaining during the many years that no rate increases were sought by the power companies. For example, when fuel costs went up, and the power companies asked the commission to approve an increase in the fuel adjustment charge, news stories said 'power companies have asked for a rate increase based on increased fuel costs'. But a month later ... when the fuel costs went down, and the same power companies asked for a decrease, the news stories said 'the commission has ordered a rate decrease'. It appears the power companies aren't going to get credit for anything good they do for us."

Charles Taylor, former state senator and chairman of a subcommittee of the North Carolina Energy Policy Committee, made a statement: "It is intellectually dishonest and unfortunate that some would try to persuade the public that by manipulating the Utilities Commission, by changing personnel or shifting emphasis we can control power rates. We are deluding our citizens in saying there is an easy way to cut the cost of utilities.... If we have economic growth, we must pay for that."

Meeting with Presidential Nominee

In August, Harris was one of 14 environmentalists, scientists, academicians and industrialists invited to meet with Jimmy Carter at Plains, Georgia, to brief the Democratic presidential nominee on energy matters. Harris was the only representative of the electric industry. As he considered the opportunity, he weighed carefully how to organize his comments to gain the

more favorable reception for his advocacy of nuclear power. He sought to demonstrate the limitations on supply and use of gas, oil and coal, leaving a need for additional energy that could come only from nuclear fuel.

It was a tribute to his national leadership that Harris' advice on energy also was sought by the Republican nominee, President Gerald Ford. The essence of his thinking was reflected in his message to shareholders in the 1976 annual report:

"As a nation, our basic energy problem is that while petroleum and natural gas represent only about 4 percent of our fossil fuel resources, we presently are dependent on these scarce fuels for 75 percent of the total energy that is used. To have the energy we shall need during the remainder of this century, our country has no choice but to make far greater use of coal and uranium. Neither coal nor uranium alone can supply this nation's additional energy requirements, but there is hope if we make maximum use of both. It is imperative that we have national energy policy which will permit cohesive action now to avoid crippling energy shortages in the future."

The Company's consideration of pumped storage as a method of generating part of its electricity ended with announcement that investigation of a site in Madison county was being discontinued. The economic feasibility of pumped storage had depended heavily on the use of larger amounts of nuclear generation. Scaling back the plans for nuclear plants effectively killed the pumped storage option. Earlier the Company withdrew from the Caney Fork site in Jackson county near Sylva, N. C., a location which was bitterly opposed by residents and environmentalists who formed the Caney Fork Defense Association.

Employees Reject Union

Throughout the summer and until the election in November, representatives of the International Union of Operating Engineers (IUOE) made a vigorous effort to persuade CP&L employees in the central service area to vote for union representation. Employees eligible to vote were in the Roxboro, Lee, Weatherspoon, Robinson, Darlington county, Blewett and Tillery plants. When the ballots were counted, they favored CP&L by a margin of more than three to one.

Smith commented on the union vote. "I think those who voted have said loud and clear to a very aggressive group of union organizers that our employees already have a good working relationship directly with their Company and do not desire the intervention of a third party on their behalf."

The Cape Fear plant remained the only Company facility with a union. Its members voted in 1979 to decertify, ending their union affiliation.

To assure the continued efficient operation of the Company, another major change in organization was made in December 1976 following a study by senior management with the assistance of consultants. Smith became president and chief administrative officer, Jones continued

as executive vice president and was designated chief operating officer, and Lilly who continued as group executive for finance and accounting was designated chief financial officer.

In addition, four others were named senior vice presidents and group executives. Graham became general counsel and group executive for legal, regulatory and communications; Utley was promoted to group executive for power supply; M. A. McDuffie to group executive for engineering and construction; and Menscer to group executive for corporate services.

Elected vice presidents were Patrick W. Howe, technical services; Wilson W. Morgan, system planning and coordination; Earl F. Stephenson, customer service operations support; E. Wilson Craig, eastern division; C. Joe Turner, southern division; and W. Burt Grant, central division. Paul Bradshaw was named controller and chief accounting officer.

The second unit of the Brunswick plant moved toward operation. To get the investment in it into rate base, the Company in December filed for a 15 percent general rate increase. The plant was declared commercial in March 1977 and in June the Commission granted an 11 percent increase.

1977: A VERY GOOD REPORT CARD

The report card from the management audit by Booz, Allen & Hamilton launched 1977 on a high note. The 20-man audit team had spent eight months studying the Company's management systems, procedures and performance. In its report to the North Carolina Utilities Commission, it said "the Company's basic organizational structure is sound. Recent organizational and staffing changes have been particularly well-conceived and carried out."

Menscer who coordinated the Company's interface with the audit team summarized other findings:

- i. Our coal management system is "well designed" and we "pay competitive prices and have adequate long-term agreements for coal and nuclear fuel."
- ii. We have "above average levels of cost performance relative to other utilities in the South Atlantic region."
- iii. The Company is among industry leaders in utilization of state-of-the-art technology in functional areas such as organization, load forecasting, and fuel procurement.
- iv. The design and construction of our generating facilities is being performed efficiently and our current programs in power plant operation are well-conceived and should further ensure efficient and safe operation.

- v. While the price of electricity has risen sharply, "CP&L's trends in cost per kilowatt-hour have generally been favorable in comparison with a group of southeastern utilities."
- vi. Employees have "a cost conscious attitude" and a "strong customer service orientation."

Harris was more succinct in his summary: "It shows we are doing a very good job for our customers."

The report identified four areas as opportunities for further improvement, noting that the Company was moving directly and promptly on them. Menscer termed them minor as compared to the scope of CP&L's total operations. The opportunities identified were reorganization of selected functions for better coordination and control; upgrade of work management systems for enhanced productivity; improved purchasing and inventory management procedures; and strengthening of the financial reporting system.

Record Winter Cold Tests the System

It was a cold winter. During the week that began on Monday, January 17, the eastern half of the country was in a deep freeze. Temperatures in Raleigh dropped below zero, setting a record. Coal piles froze and cooling systems iced at generating plants. Larry Cartwright and Marvin Watkins, senior system load dispatchers at the Skaale Center, underscored the severity of the situation as many electric utilities resorted to energy conservation and curtailment programs. "On that Monday there wasn't a megawatt to be bought east of the Mississippi. You couldn't buy one anywhere. It was tough."

As CP&L customers set record demands, employees at coal-burning plants used their muscle and ingenuity to get as much production as they could under the circumstances. Voltage was reduced five percent. Nearby companies had to resort to rotating outages. The Utilities Commission called for statewide maximum effort by all consumers to cut use of electricity. By Wednesday afternoon it had been necessary to run the IC turbines for so long that oil supplies were dangerously low. The situation was aggravated further by failure of a conveyor belt on Roxboro 3. So there came an urgent public appeal for voluntary curtailment of usage. Conservation efforts and a slight moderation in weather combined to reduce total energy consumption on the CP&L system by about 10 percent during the next two days.

By Friday morning crews who had worked around the clock had Roxboro 3 back in operation. Among other things, plant personnel had scoured the county for molasses which they poured on conveyor belts to help move the icy coal. Oil supplies for the IC turbines had been substantially replenished. The appeal for conservation was eased, but the voltage reduction remained in place until the following Monday.

In February new security regulations for nuclear plants were issued. They had to be implemented by 1979. Fences were erected. Access into the plants was carefully monitored with elaborate security systems and by armed guards. Within the plant, employees could enter certain areas only if they carried cards which permitted them to open controlled doors. Security requirements added millions of dollars to annual operating costs. Howe later recalled that the 125-person security force at Brunswick was almost as large as the staff the Company initially estimated would be required to operate the plant.

President Carter Calls for Conservation

Newly-inaugurated President Carter, speaking to the nation, warned that the energy crisis "is here to stay" and "sacrifices will have to be made to conserve energy." He called on utilities to promote conservation, not consumption. He made it clear he intended to maximize use of coal, emphasize solar research and other renewable energy sources, and maintain "strict safeguards on necessary atomic energy production." Environmental activists were calling for a moratorium on nuclear plant construction and for phasing out existing nuclear facilities over the next 10 years. Within months, Carter vetoed a bill to provide continued funding for development of the demonstration breeder reactor, saying it was obsolete.

Sherwood Smith who was emerging as a spokesman for the industry was quick to respond. "Unfortunately, this action is an illustration of the basic flaw we see in the President's energy proposals. Instead of providing for an increased and adequate supply of energy for the future, the proposals have relied on usage constraints that make energy more difficult to produce and more costly for consumers. The President's action, unfortunately, may have the effect of restricting future energy supplies and increasing their cost."

As Americans heard themselves chastised for using one-third of the energy consumed in the world when they represented only six percent of the world's population, Harris reminded the Chamber of Commerce of the United States that we also were producing 32 percent of the world's gross product. "This should give us a little different degree of wastefulness and a little different potential for conservation," he cautioned. At the same meeting, with the concurrence of CP&L directors, he became vice chairman of the Chamber.

A professor at Georgetown University Medical School brought another dimension to the energy debate. Dr. Estelle Ramey noted that the liberation of women is based almost entirely on the availability of electric energy. Without the labor-saving devices made possible with electricity, she pointed out, it would be impossible for women to pursue meaningful careers while maintaining a home. One of the contradictions of society, she commented, was the large number of women who devoted themselves to such activities as opposing nuclear development without realizing they were in reality placing a limit on their liberation.

Bond Rating Restored

The Company's financial performance improved enough that Moody's Investors Service restored the A bond rating which was lost in 1975. There was a move in the North Carolina General Assembly that would help overcome the financial obstacles to new construction. In an appearance before the House Public Utilities Committee, Harris said that inclusion of Construction Work in Progress (CWIP) in the rate base would mean smaller, more regular increases in the price of electricity, but customers would be spared the "larger, precipitous increases that now accompany the completion of new facilities."

The General Assembly acted to authorize the Commission to allow CWIP in rate base effective July 1, 1979. Harris told shareholders this action would have the dual effect of reducing the amount of capital that must be raised for construction and of keeping the price of electricity to customers lower over the long run.

Another legislative action was to establish a public staff at the Utilities Commission to look after the interest of consumers. The Commission staff was divided to create the public staff. Hugh Wells who as a member of the Commission had earned a reputation as a consumer advocate was the first director. He lost little time swinging into action, asking the Commission to reconsider the rate increase granted only weeks before on the grounds that it allowed too high a rate of return. His appeal was unsuccessful, but the uncertainty it created did delay temporarily a sale of CP&L bonds.

The law required the Commission to develop and keep a current plan for new generating capacity as a means of assuring a proper level of construction by power suppliers to meet future energy needs. After 1977 this annual forecast was originated by the public staff. Its forecasts frequently indicated need for more capacity than CP&L was projecting.

North Carolina EMC Sues CP&L

On August 17 the North Carolina Electric Membership Corporation (NCEMC) filed a \$150 million anti-trust suit against CP&L and South Carolina Electric and Gas company. The suit charged the two utilities with monopolistic practices which prevented the rural electric co-ops from developing their own generating plants because the two electric companies dominated the "bulk power exchange market".

Graham responded for CP&L: "The complaint apparently makes accusations against the Company dating as far back as the 1920s. Similar allegations have been raised by these cooperatives on numerous occasions in other proceedings -- never successfully. Their claims are meaningless and without merit and the lawsuit will be vigorously defended."

There followed 15 years of costly research and legal maneuvering until in 1992 the case came before the U. S. District Court in Greensboro, N. C. By then the damages sought were more than \$300 million and one of the allegations was that CP&L illegally refused to sell NCEMC an interest in its Brunswick plant. The presiding judge dismissed the lawsuit, ruling that NCEMC

failed to present evidence that CP&L had violated federal anti-trust laws.

Spent Nuclear Fuel Shipped from Robinson to Brunswick

The moratorium on nuclear fuel reprocessing forced CP&L to seek permission to transfer spent fuel from the Robinson plant to Brunswick. The Robinson spent fuel pool was filled. The only way to refuel the plant for continued operation was to move some of the spent fuel. It could be stored only at facilities licensed by the NRC, and it had to be shipped in special casks carried on rail cars by a train dedicated solely to movement of the fuel.

Even with subsequent modification of the fuel pools at Robinson and Brunswick to expand their capacity, it became necessary in the late 1980s to ship spent fuel from the two plants to the Harris plant near Raleigh. There the spent fuel facility was designed to support four operating units. Fortuitously, it offered storage capacity to accommodate the Company's nuclear operations until near the end of the century. But the fuel movements, pending licensing of a reprocessing or permanent storage facility, were another expense added by government indecision.

Lack of National Energy Policy Costly

In their report to shareholders, Harris and Smith pointed out that "lack of a coordinated energy policy and governmental indecision have cost our industry valuable time and money. The national administration should reach a positive conclusion on nuclear fuel reprocessing and waste disposal. With current levels of technology, spent uranium removed from nuclear plants still contains about 40 percent of its original energy potential. Through reprocessing this unused fuel can be recovered."

They voiced another familiar theme: America's problem in responding to its energy situation is more political than technological or economic.

"Conservation is an essential element of any meaningful energy plan, but conservation alone cannot resolve our energy problems," they declared. "An estimated 20 million workers are expected to enter the nation's labor force between 1977 and 1990, and the economy must expand to create enough new jobs or the country will face social and economic crisis. Jobs and energy are inextricably tied together."

Privately, Harris expressed confidence the President understood what needed to be done about energy policy and intended to do it. But his administration included environmentalists, anti-nuclear advocates and no-growth spokesmen who erected roadblocks.

Smith Leads Opposition to Energy Bill

The energy bill which emerged from the U. S. House, H.R. 8444, bore little resemblance to the Administration proposal. Edison Electric Institute (EEI) said it "flunked the test

of workability." Among other things, it would have transferred utility regulatory authority from the states to the federal government through a complex series of guidelines and restrictions. It would have imposed another layer of bureaucracy and delayed both the rate-making process and the construction of plants. It would have mandated seasonal rates nationwide, encouraged adoption of "lifeline" rates, restricted fuel clauses, and banned the burning of natural gas in electric generating plants after 1990.

Smith was designated to coordinate the industry effort to modify such damaging legislation. It put him in a position where during 1978 he interfaced with utility executives all across the country, and with their congressmen and senators to discuss the Public Utilities Regulatory Policy Act (PURPA). He was in Washington much of the time. The experience gave him opportunity to expand his personal contacts on a national basis, and he quickly established his effectiveness in a leadership role for the industry.

The construction program was getting back on track. NRC hearings on the application for a construction permit for the Harris plant were held in the fall of 1977, six years after plans for the plant were announced. Changing regulatory requirements and intervenor involvement in the licensing process accounted for most of the delay. Intervenors included the Conservation Council of North Carolina, Wake Environment and the Kudzu Alliance. A certificate of convenience and necessity for the coal-burning Mayo plant in Person County was granted by the North Carolina Commission. Restoration of the A bond rating opened the door to more reasonable financing. Construction expenditures which were \$236 million in 1977 were projected to be \$453 million in 1978 and \$1.7 billion for 1978-80. Peak demand was forecast to grow 5.9 percent annually over the next 10 years.

There was indication that industrial growth could accelerate. A McGraw-Hill study ranked North Carolina second and South Carolina fourth among the states as the most preferred locations for new or expanded manufacturing operations.

The Company's fuel mix was a major plus. For the year 61 percent of generation was from coal, 35 percent from nuclear, and less than 2 percent from oil.

Harris Speaks on Responsibility of the Press

Harris capped an effort he began earlier to encourage the press to do a more adequate job of reporting on energy issues. In a 1975 appearance before the Southern Newspaper Publishers Association, he had called for reporting "aimed at serving the best interests of your readers." Now in an appearance before the Ohio Newspaper Publishers Association, he acknowledged that "business must bear some of the responsibility for its own bad image. But one of the problems with energy reporting is an anti-business and anti-utility bias among some elements of the press.

"Perhaps the most disturbing single aspect of energy news coverage," he observed, "is the amount of misinformation disseminated by the press as the direct result of talking with and quoting individuals who have no expertise about energy issues, and who have no responsibility for

energy supply."

Saying that reports about nuclear power frequently were filled with half truths, misrepresentations and distortions, he lamented that any person who expresses an opinion could be qualified by the media as an "authority" when he made charges about nuclear energy. Harris said it was his belief that newspapers should send out energy reporters who understood basic economics, and who were willing to learn enough about the business they covered to write about it intelligently rather than emotionally.

The trade press gave wide coverage to his comments. It was a public expression of the private frustration Harris had experienced for years. Unfortunately, his comments provoked some members of the Carolina press who perceived him as trying to tell them how to run their business.

1978: CONSTRUCTION BEGINS ON HARRIS PLANT

The long-awaited construction permit for the Harris plant came on January 27, 1978. Activity at the site picked up immediately as Daniel Construction Company, the major contractor, began hiring and training craftsmen, building toward a force of 3,500. Consistent with its commitment to play a larger role in managing construction, CP&L had stationed Roland Parsons and a staff of more than 30 engineers and inspectors at the site. Parsons had come to the Company from Ebasco Services where he had been senior resident engineer for building the St. Lucie nuclear project in Florida. Earlier he was resident engineer for construction of Robinson 2. Target date for completion of the first unit was 1984. The schedule had anticipated construction would begin in 1976. To make up time already lost, work began with two shifts.

Activity had been underway at the Harris site for several years. The AEC had granted a limited work authorization under which land clearing, excavation and site preparation was permitted. So within hours after the construction permit was received, concrete was being poured. During the excavation, a minor geological fault had been discovered. Geologists judged it to be 150 to 200 million years old, and therefore of no consequence to the plant.

Major plant components such as the 355-ton steam generators already were at the site. Security guards in 1976 thought they saw a mysterious visitor, an unidentified flying object. A newspaper reported, "while most people slept or were at home getting ready for work, strange white lights hovered over southern Wake county, then rose into the sky and disappeared as the day became brighter." One guard said he could not explain what it looked like. "At first it had the shape of a boomerang, then it would appear to be round. And it had bright lights on it," he described.

Workers commuted long distances. Busloads came from Robeson county. Parsons recalled that persons of Indian heritage constituted a valuable part of the workforce, especially iron workers. Johnnie Locklear, one of those who commuted from Robeson, estimated there were 300 workers from the county, most of them rod-busters and carpenters.

Parsons regarded CP&L as a pioneer in getting women into the construction work force by providing craft training opportunities. At the Harris plant, the jobs filled by women included pipe-fitters, electricians and welders.

Painful Coal Strike

United Mine Workers had struck again in early December 1977. In anticipation of the strike, the Company during the previous fall had built its stockpiles to more than 100 days. By late February coal supplies dropped to 50 days, triggering Phase I of the Energy Conservation Plan. Appeals were made to customers for voluntary reduction in their usage, and the Company cut back, too. Customer service representatives called on all customers with loads of 300 kilowatts or more to help them identify opportunities to reduce loads by 10 percent. A few days later, with supplies down to 40 days and the resolution of the strike uncertain, Phase II was implemented. It included a five percent voltage reduction and renewed appeals to customers.

While all this was happening, employees questioned why management had planned the refueling outage at Robinson 2 during the coal strike. Of all times, this was when nuclear generation was needed. The answer was simple: refueling of Robinson had been scheduled for the preceding fall, but the federal government's decision not to license a reprocessing or permanent storage facility necessitated postponement. There was inadequate space in the Robinson storage pool for another refueling. Thus refueling had to wait while the Company sought permission to ship spent fuel to Brunswick, and then made the shipments. Robinson 2 was shut down in late January after use of its fuel core had been extended as long as possible.

To stretch coal supplies, the Sutton plant was allowed by the Department of Energy to burn oil from early March until mid-May. The strike ended after 110 days and coal deliveries improved, permitting the Company to go out of Phase II during the first week of April.

An assured supply of quality low sulfur coal was extremely important. Electrostatic precipitators had been added at all major coal-burning plants to comply with the Clean Air Act. High stacks dominated the Sutton and Roxboro skylines. But low sulfur coal was a necessity if the installation of a complex new sulfur removal technology called scrubbers was to be avoided.

Joint Mining Venture Ended

The Company's Leslie mine in Pike county, Kentucky, yielded its first production, about 300,000 tons for the year. The decision had been made to expand the venture with Pickands Mather to a second nearby mine, McInnes, on which construction began in 1977. It was expected to be in production in 1983, combining with Leslie to provide yearly supplies of 1.6 million tons of high quality coal.

By the time the McInnes mine was ready for production, however, the mining

venture had soured. Initially viewed as necessary to assure dependable supplies of quality coal for the Roxboro and Mayo plants, it became unattractive when regulation did not allow full recovery of the costs involved. The Company got out of the coal mining business in 1984 by selling its interest in Leslie and McInnes. It could acquire quality coal from other sources at lower prices, and without the risk of incurring costs that would have to be borne by shareholders.

Expenditures since 1970 for environmental protection totaled \$241 million. Cooling towers and an after-bay had been added at Roxboro to reduce thermal releases downstream. Off-stream cooling lakes were in place at Lee, Sutton and Weatherspoon. Cooling towers had been added at Cape Fear. Brunswick had an expensive canal system to funnel cooling water through the plant's condensers and out to the ocean.

Domestic Electric System Acquired

In March 1978, 2,200 customers were added to the system through the purchase of Domestic Electric, a small privately-owned enterprise on the outskirts of Rocky Mount, N. C. Domestic had been buying electricity generated by CP&L, so there was no change in the energy requirements. As part of the transaction, CP&L and the Rocky Mount municipal system swapped customers so that Rocky Mount would serve former Domestic Electric customers within the city limits.

Load Management Studies

"Load management" had become a prominent phrase in utility jargon. Regulators and utilities looked for ways to control demand and improve load factor. The Public Service Commission approved a pilot program in Florence which used radio control switches to interrupt service to water heaters and air conditioners of 225 residential and commercial customers. It was a study designed to determine customer reaction and whether the benefits would equal or exceed the cost of implementation. Similarly, the Company in cooperation with the N.C. Utilities Commission and the U.S. Department of Energy was testing peak-load pricing to determine whether time-of-day rates could be advantageous. One drawback was the relatively high cost of time-of-use meters.

In North Carolina the Commission probed lifeline rates. It sponsored a conference at which Sam Behrends, then vice president for corporate regulatory policy, represented CP&L. He summarized: the consensus was that there is a problem, but a lifeline rate is not the answer. The burden of helping those in genuine need is properly a function of the government, not a duty of ratepayers. Lifeline must be recognized for what it is -- a tax on some for the benefit of others. Electric utility rates simply are not a workable vehicle for accomplishing the purposes of lifeline.

Subsequently, James M. Davis, Jr., who succeeded Behrends as manager of rates and service practices, told an energy management exposition that cost-based rates encourage energy management. Through cost of service studies, he said CP&L had brought more certainty to the

process of assuring that each customer class paid its fair share of total costs. The number of rate schedules was being reduced by eliminating specialized rates for different types of commercial and industrial customers and moving to general service schedules.

Energy sales were up only 2.7 percent for the year, less than the gain of 5.2 percent the previous year. Projected gain in peak demand for the next 10 years was reduced to 5.2 percent annually. Forecasting remained difficult. Ed Lilly anticipated that \$450 million of new capital would be required in each of the next five years.

Ironically, in a year when nuclear accounted for 47.1 percent of the Company's generation, Harris and Smith concluded that "we do not believe it is possible to license and construct a new nuclear facility within a reasonable period of time." Licensing the Harris plant had been a slow and costly process, not at all like the experience with Robinson 2. Directors authorized the executive committee to cancel two 1150 megawatt nuclear units tentatively planned for the South River site in Sampson and Bladen counties, viewing additional coal-fired plants as a more predictable alternative.

Energy to Support a Full Employment Economy

When Harris assumed leadership of the U.S. Chamber of Commerce in February, he used the occasion to call for a national energy plan adequate to support a full-employment economy. The speech, entitled "Energy and Economics: a Political Decision," also reflected his personal philosophy. Again noting that 20 million more persons would enter the workforce by 1990, he said those who advocate a slow or no-growth economy frustrate the legitimate ambitions of those who have yet to share in the national wealth.

"A good case could be made," he said, "for blaming many of the current problems of American industry on short-sighted and frequently contradictory government policies that on the one hand require extensive capital expenditures in non-productive facilities and simultaneously restrict earnings that would otherwise be available for investment in productive facilities.

"It is inherent in the nature of government action that legislators and bureaucrats not forced to operate within market-imposed budgetary constraints, attempt to develop policies and programs to please everyone. The contradictions that would become immediately obvious to managers who must work within budgets are unrecognized in the governmental process, and laws and regulations get on the books that must be met by industry regardless of the economic penalties that are extracted."

He cited the frightful impediments to building facilities to supply more electricity. In addition to the problem of financing, he called attention to the numerous regulatory policies that presented obstacles to putting new plants into service. To illustrate the point, he said 15 separate permits involving more than 65 different regulatory agency approvals had to be obtained before a nuclear plant could be operated.

Harris referred to CP&L's \$500 million dollar "debate" with the EPA over the requirement for cooling towers at Brunswick, saying that all appropriate government agencies approved the \$42 million once-through cooling system. "Between design of the plant and its operation, the government changed its mind," the EPA ordering construction of cooling towers. If we are unsuccessful in our appeal of this decision, "\$500 million of capital will go into nonproductive facilities instead of into facilities that would have produced permanent jobs for a growing population.

"The most appropriate government role in encouraging economic growth is in setting policies that reduce the uncertainty of potential investors and allow for formation of private capital. Chief among these policies should be a reduction of inflation and establishment of tax policies that encourage rather than discourage savings and investment in productive facilities.

"As a nation, we can overcome inflation, we can provide the capital that will produce a growing economy, and we can produce the energy necessary to support it. However, to accomplish each of these objectives will require both individual and collective discipline. We must, for example, be willing to decrease the pressure on our elected officials to provide at government expense more and more of those services we ought to be willing to pay for ourselves...

"Capital can be made available for increasing productivity, but to do so will require changes in our taxation policies, and a recognition of the importance of savings and investment in our social system.

"Finally, energy can be made available to fuel the productive capacity of our economy, but it cannot be made available unless we are willing to pay the price now. We must quit assuming the worst of motives by energy producers, and resist the temptation to blame producers for price increases. While we will no doubt pay more for energy, we must balance this increased cost against the very real consequences of an inadequate energy supply, and make the choices that will assure energy for our future, and for that of our children."

It was a speech that said much about why Harris was nationally acclaimed as a spokesman for business. A long-time director of Wachovia Bank and the Durham Corporation, he had been elected to the boards of General Motors and United States Steel. He traveled extensively during his year as head of the Chamber, repeatedly urging national policies to curb inflation and support a full employment economy.

Political Mismanagement Causes Inflation

"Inflation is the fruit of the political mismanagement of the American economy by several administrations, indulged in over a number of years by both political parties," Harris told his audiences. "Sixty percent of the driving forces behind the inflationary spiral are directly attributable to government policies and government actions in three areas: deficit spending, the cost of regulation, and tax policies that discourage saving and investing."

He said 20 percent of the force behind inflation was the imbalance of foreign trade, and the remaining 20 percent was attributable to miscellaneous items, the chief one being wage settlements that were not related to productivity.

During the previous nine years, the national debt had more than doubled. Harris lamented deficit spending as the biggest government contribution to inflation and as "leaving a debt to be repaid by our children and their children in order to gratify our own desires." He suggested cutting federal spending to balance the budget over a period of three years, saying a four percent across the board reduction would not materially impair government services.

Harris also had some advice for a graduating class at Wake Forest University. "A society that finances its current prosperity and comfort by borrowing from successive generations is indulging in an immorally irresponsible course of conduct. Those of you who face the prospect of inherited national burden to be borne during your productive years have the greatest reason to stop this immorally irresponsible conduct: your own enlightened self-interest. Every free democratic society is faced with the challenge of whether to live off its inherited political and economic capital stock or to work productively and manage wisely so as to leave behind an increased heritage.

"I must confess to you that my generation is making a mess of your future. In the '60s, young people sparked a revolution against the pollution of our physical environment. Your generation has a like opportunity to lead a revolt against the degradation of your fiscal -- or economic -- environment. A nation that lives off its seed corn is beginning the process of liquidation."

To Harris, inflation was simply too many dollars chasing too few goods. The problem was that everyone wanted to be untouched by the solution. The solution was two-fold. First, reduced government spending was essential and should lead the way. Second, personal spending must be reduced and personal saving increased.

Interestingly, while Harris headed the U.S. Chamber, Smith was chairman of the Greater Raleigh Chamber of Commerce.

There were some who thought Harris was spending too much time away from the Company. Hoover Adams, publisher of the Dunn (N.C.) Daily Record, was the most outspoken. He used the newspaper's editorial page to voice his criticism. But Harris never accepted major national responsibilities without the concurrence of the Company's directors. They saw the intangible value to the Company of having its chief executive in positions of national leadership where he could gain insights and influence actions impacting the industry.

Shareholders in their annual meeting passed a resolution which commended Harris for his election as chairman of the U. S. Chamber and recognized that this service and leadership would be of great value to the Company, its shareholders and customers, and to the state of North

Carolina.

1979: TMI ESCALATES NUCLEAR CONCERNS AND COSTS

Undoubtedly, the most memorable event of 1979 for the electric industry was Three Mile Island (TMI). The accident in this nuclear plant at Middletown, Pennsylvania, kindled public fears, gave instant credibility to nuclear critics, and underscored that neither the NRC nor the electric companies were prepared adequately to deal with public concerns in the wake of such an event. Equally important, it led to a plethora of new regulations that required expensive back-fitting of existing plants and modifications to ones under design or construction.

It happened at a very bad time. President Carter was pushing for legislation that would speed the construction of nuclear plants by shortening the inordinate time required for licensing. After TMI, Senator Edward Kennedy expressed the growing sentiment on Capitol Hill: "It is more important to build these plants safely than to build them quickly."

The accident began on March 28. News reports spoke of the possibility of a meltdown and of a "hydrogen explosion" that could release clouds of radiation. For a few anxious days state officials advised children and pregnant women to leave the area. Television showed deserted streets and "for sale" signs on lawns in Middletown. NRC brought in Harold Denton, its director of nuclear reactor regulation who was a native North Carolinian and a nuclear engineering graduate of North Carolina State University, to be the spokesman to the media. The plant's tall natural draft cooling towers became symbols of nuclear, even though they were not unique to nuclear plants.

NRC investigators subsequently determined that a sequence of events had left the fuel core partially uncovered by coolant, allowing some melting. But there never was any reason to fear a hydrogen explosion. Roger Mattson, director of NRC's division of systems safety, admitted a "foul up", acknowledging that NRC issued "misinformation" about the possibility of an explosion. Later, he told a congressional panel the amount of concern was entirely undeserved. The apparent threat "may have been blown out of proportion in the press, but it originated in the staff," he said.

It was alleged after the confusion had cleared that some reporters had based their stories on "what if" scenarios that could not possibly have occurred, and that some television crews created the impression of deserted streets by asking people to stand aside while they filmed.

CP&L Response to TMI

At CP&L the reaction was fast. A task force was formed to study the details of the accident, and determine what ramifications it held for the Company's plants and their operators. Dave Waters, principal engineer -- nuclear generation, was coordinator. Jim Zaalouk,

mechanical/nuclear unit manager, and Mike Connor, principal engineer for operating plant support, were leaders for the teams which included personnel from the Robinson and Brunswick plants and representatives of the reactor suppliers and architect-engineers. One team focused on boiling water reactors and the other on pressurized water reactors.

The teams determined it was safe to continue operation of the Company's plants. They recommended modifications in plant systems and operating procedures to guard further against a TMI-type of accident. These changes were underway before the Presidential Commission issued its report. One of the actions for which that report called was a moratorium on licensing nuclear plants. The moratorium was temporary.

The industry united as never before to assure safe plant operations. CP&L was in the forefront. A Nuclear Safety Analysis Center was established at EPRI to investigate the accident and apply the technical lessons learned to improve nuclear safety. The Institute of Nuclear Power Operations (INPO) was formed as a utility industry organization to assure high quality in operation of all nuclear plants. It would achieve this by establishing and monitoring uniform standards for plant operation and operator training.

After the establishment of INPO, Smith sensed the need for a national communications program to help restore public confidence in the nuclear option. He persuaded Bill Lee and James O'Connor, chief executives of Duke Power and Commonwealth Edison, respectively, to join him in calling for a study which led to formation of the U. S. Committee for Energy Awareness.

Only a month before TMI, the Harris Visitors center had opened. Its focus quickly shifted to briefings and plant tours for public officials and the media as the Company sought to help people understand what had happened at TMI and why it should not occur at Harris. The center director was Charles Moseley, a nuclear engineer whose previous assignment had been to help license the Harris plant. Included in the building with the visitors center was a \$5 million computer-operated simulator for training reactor operators. It duplicated the control board for a pressurized water reactor and provided opportunity for hands-on experience. Officially known as the energy and environmental center, the building also included other training facilities, environmental laboratories and testing labs to support operations of the entire Company. When the E&E building was located, it was anticipated visitors would be able to look from the visitors center across the lake and see the plant. But the decision to shrink the size of the lake eliminated the anticipated view.

'The China Syndrome'

In an uncanny coincidence, "The China Syndrome" began showing two weeks before TMI. It was Hollywood's first major production on nuclear power. Its stars were Jane Fonda and Jack Lemmon, both real life anti-nuclear activists. The film began with a "near miss," potentially catastrophic accident, showing operators in the plant control room trying to determine what was happening and how to deal with it. While its technical authenticity was described as

"weak", its timing was remarkable. It only added to the woes of the nuclear industry.

Time magazine linked the movie and TMI in its April 9 issue: "Reassuring statements flowed from the plant's press spokesmen, sounding as if they were taken right out of the script for the film 'The China Syndrome', a thriller that depicts nuclear plant officials as placing greed for profits far above their concern for public safety. But if the movie ... is unfair in its villainous caricature of power- and construction-industry officials, its basic premise will no longer seem so far-fetched to those movie-goers until now unattuned to the nation's debate over nuclear power."

There was no denying that TMI was the worst accident, and the first significant one, in this nation's nuclear power experience. Bad as it was, subsequent official findings showed that public health and safety were not compromised. No one was killed or injured. Nor was there any adverse impact on the surrounding environment. The cost of new regulations to which it led was enormous. Howe, the CP&L manager who once worked at the Atomic Energy Commission, said the accident brought the industry together, but it afforded extremists and zealots in the NRC credibility to get into many areas previously considered very acceptable, leading to what Howe termed a high degree of instability in the regulatory system. NRC became concerned about management of nuclear plants and wished to be involved in key personnel decisions. It wanted managers to be well-qualified and credentialed.

Ralph Nader pronounced it the "beginning of the end for nuclear power in this country." Ott Jones responded for CP&L: "We must consider nuclear power in the overall energy picture. We have a vital need for increasing amounts of energy. National policy recognizes that we are rapidly running out of natural gas and oil."

Jones added that it was important to recognize that much of the furor over TMI occurred because nuclear power is an exotic industry and technologically a mystery to the general public. "For the media, it makes good copy. We cannot afford to downplay its importance. We must openly investigate the basic causes, correct them and prevent repetition."

Time magazine reported: "It is clear that the grounds of the long national debate over nuclear energy have now shifted dramatically. For many years the foes ... of nuclear power were very much on the defensive. Their complaints on plant safety had lacked credibility; the exigencies of the nation's energy crisis were unarguable; the fragility and risk, to some degree inherent in many parts of an industrialized society, had a common sense acceptance as inevitable. But the price of progress, like the price of anything, has a ceiling, and for the nuclear power industry, the radioactive gases drifting from Three Mile Island have undeniably raised the price -- and public consciousness about the risks -- of nuclear power."

Members of the Kudzu Alliance, one of the groups which opposed the Harris plant, staged a day-long sit-in at CP&L's general offices. On April 10 a group of 19 stormed into the building demanding to meet with Company officials. They then occupied the elevator lobby on the eleventh floor of the building and remained until late afternoon when they were arrested by Raleigh

police for refusing to leave.

Precipitators not Efficient Enough

Using the best available technology did not guarantee that the expected results would be delivered. To minimize particulate emissions, the Company had spent \$64 million during the first half of the '70s to put electrostatic precipitators on its coal-fired boilers. The precipitators were rated 99 percent efficient. But they fell short. The Company said it could meet a requirement of 97.5 percent. So it requested a variance, effectively asking the N.C. Environmental Management Commission whether it wished to lower its clean air standards slightly or require that an entirely new generation of precipitators be installed. The cost of replacement was estimated to be \$173 million, an expense which Smith said would amount to a four percent rate increase. Other utilities were having the same kind of problem with precipitator performance. The Commission decided to grant a variance. As a result the Company only had to replace one precipitator -- Roxboro 3.

In a report on nuclear plant performance, which was made more significant by the publicity about TMI, the Associated Press said that Brunswick had one of the worst track records in the nation during 1976 and 1977. Ed Utley called the findings questionable, saying the survey used "fragments of materials gathered from voluminous files and operating reports." The AP survey cited the number of licensee event reports as indicative of poor performance. But Howe quarreled with that assumption, saying a major difference was that Brunswick was the first plant licensed with standard technical specifications which required considerably more testing of equipment and reporting of plant events.

Harris Hospitalized for Heart Surgery

In early April Shearon Harris entered the hospital for coronary by-pass surgery. That thrust upon Smith the responsibility of presiding over the annual shareholders meeting, a session in which a proposal was offered to "request the directors to see that no more nuclear power generating facilities are built after completion of those now under construction." The issue generated an hour of debate during which members of the Kudzu Alliance and the Triangle Sierra Club voiced vigorous support for the proposal, even questioning whether construction of the Harris plant should continue. Anti-nuclear protesters marched along city sidewalks outside the meeting place. Some who entered the meeting as shareholders wore gas masks.

Noting that nuclear plants had saved the Company's customers \$129 million in fuel costs during 1978 alone, Smith insisted "there is no alternative source. If we are going to have electricity, we are going to have to move ahead" with nuclear power. The shareholder proposal was defeated overwhelmingly.

Harris recovered from his heart surgery only to be sidelined again. In August he underwent surgery for removal of a brain tumor. On his recommendation, the directors in September elected Smith to be chief executive officer as well as president. Harris described it as

another step in the Company's senior management development and succession program.

It was the second time Sherwood Smith had been thrust into a position of major responsibility ahead of schedule. He acknowledged later that he didn't realize how big the flood would be. He likened the experience to inheriting command of a ship in the middle of a storm. But his established practice of working long hours, doing what had to be done, put him in a good position to cope. He manifested uncanny ability to juggle a menu of issues and focus on the salient points.

Organization Restructured

Earlier in the year, the organization had been restructured to strengthen senior management in anticipation of the retirements of Harris, Jones and Ridout. As a result there were 27 departments in three administrative groups reporting to Smith and four operating groups reporting to Ott Jones who was elevated to senior executive vice president and chief operating officer. Utley was promoted to executive vice president with responsibility for the bulk power supply and the customer and operating services groups. Darrell Menscer became group executive for power supply and James M. Davis, Jr., was elected vice president for a new fuel and materials management group. Wilson W. Morgan was elected senior vice president and group executive for corporate services.

There was one new face on the organization chart. Dr. Thomas S. Elleman came to the Company as vice president of the new nuclear safety and research department. He had been chairman of the nuclear engineering department at North Carolina State University. He was an articulate, credible public spokesman on nuclear issues.

One of the first major decisions Smith made after becoming CEO was to delay the sale of 4.5 million shares of common stock from October until February. In November the Company sold \$100 million of first mortgage bonds at an interest rate of 12.5 percent, the highest rate it had ever paid. The consumer price index was up 11 percent for the year, the first of three years when its rise would be in double digits. In September, the Company started another cycle of rate cases, asking for a 9.2 percent increase in North Carolina. Effectively, it would be the first price increase in three years.

The N. C. Utilities Commission asked power suppliers to submit proposals for establishing a non-profit alternative energy corporation to research solar, biomass and other alternative energy sources. It was the North Carolina Alternative Energy Corporation, and it would be funded by a fixed charge collected by suppliers on each unit of electricity sold.

Decade of Dramatic Growth

A look at the scorecard for the decade showed how dramatically the Company had grown. It had been a period of tremendous construction, financing and inflation. The figures also

told a story of change and pain.

Total utility plant rose from \$821 million to \$3,883 million, system capability from 3,395 megawatts to 7,796, and capitalization from \$599 million to \$2,939 million, reflecting the tremendous amount of new capital that had been attracted into the business.

The number of customers grew from 548,799 to 725,017 and the Company's average investment per customer from \$1,495 to \$5,355. Annual energy sales climbed from 16.7 billion kilowatt-hours to 28.7 billion, and annual revenues from \$187 million to \$926 million. While annual energy sales increased 72 percent, annual revenues rose over 400 percent.

Licensing, building and staffing new plants required more people. The number of employees jumped from 2,641 to 6,247. There was a subtle change underway that went beyond numbers. The new generation of employees was more mobile and sophisticated. They were more inclined to ask "why" and to seek input into the decision-making process. The corporate culture was shifting. Competition in a national labor pool for nuclear talent had brought individuals from distant places and diverse backgrounds. It had forced wage levels up, benefiting the entire employee population.

Looking back, Ed Lilly observed that the Company had been preoccupied with serving its customers and meeting their demand. It would have to sharpen its business focus in the years ahead. This would include managing demand to avoid construction.