

A History of
Carolina Power and Light Company

1958 -- 1992

By Albert L. Morris

Preface

This history of Carolina Power and Light Company is a reflection of the cumulative effort of thousands of employees, each doing an essential job which blends into the big picture to enable the company to provide the dependable service which customers expect.

It also is a reflection of the dreams, frustrations and personal philosophies of those who have led the Company, of responses to the environment in which the enterprise has operated, of efforts to maintain employee enthusiasm and morale during difficult periods, of the blending of new and old technologies, and of opening the door for the introduction of a new corporate culture.

This history of CP&L explores what happened in and to the Company between 1958 and 1993. It looks at the problems and opportunities of each period through the eyes of the chief executive officers -- Louis V. Sutton, Shearon Harris and Sherwood H. Smith, Jr. It reflects the achievements of the Company and its employees, and it describes the public, political and regulatory environment in which the Company operated.

Acknowledgments

The writing of this history required the cooperation of many individuals to whom the author wishes to express appreciation, individually and collectively.

For assistance with research, I am particularly indebted to Larry Lancaster, former secretary of the Company; to Stephen Meehan, a former employee of the corporate communications department; to Roxie Hart, secretary to the vice president for corporate communications, and to librarians Paula Fish, Donna Hitchings and Ann Carmichael.

Others who have provided information through interviews or by searching documents include:

Sherwood H. Smith, Jr.\W. E. Graham, Jr.

Lynn W. Eury

Charles D. Barham, Jr.

James M. Davis, Jr.

Richard E. Jones

Norris L. Edge

Barbara Allen

C. V. Bailes

Elizabeth Bean

Sam Behrends

R. H. Berly

Kay Boyd

Larry Boyer

Joseph Branch

David Britt

Tom Byrum

Jackie Clements

Paul S. Colby

Fred Day

Robert F. Drennan

R. T. Dwyer III

Thomas S. Elleman

Fred Ellington

Ben J. Furr

Edgar Geddie

Cecil Goodnight

Mac S. Harris

J. V. Henderson

Mike Hill

Patrick W. Howe

J. A. "Ott" Jones

R. Michael Jones

Martha Leak

Edward G. Lilly, Jr.

James W. Loy

M. A. McDuffie

Jack McGirt

W. P. McPherson

John S. Monroe

Hayden Moore

Wilson W. Morgan

David Nevil

Henry Oehmann

Thomas N. Owen

Roland Parsons

E. N. Pope

W. J. Ridout, Jr.

John Senter

Dan E. Stewart

W. Reid Thompson

C. Joe Turner

E. E. Utley

W. F. West

Steve Whatley

Robert Williams

Tom Wyllie

Larry Yarger

Rick Yates

Joyce Young

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HISTORY IS ONLY AN INDICATION OF THINGS TO COME

The year was 1958. Dwight D. Eisenhower was president. Elvis was king of rock and roll, the hula hoop was the latest fad, American Express was launching its then-new credit card business, and Carolina Power and Light Company was marking its 50th anniversary. Louis V. Sutton, an engineer who had been chief executive since 1933, had led the Company through the Great Depression, the trying times of World War II, and to corporate independence

which placed the "CPL" symbol on the "big board" in New York for the first time in 1946.

Only six years earlier, Sutton had led the merger with Tide Water Power Company which gave CP&L its final geographic shape. The Company served about half of North Carolina and one-fourth of South Carolina. It had 408,000 customers, 2,126 employees, and its generating capacity was 1,391 megawatts. A new 185 megawatt plant was under construction in Darlington county, South Carolina.

In 1958, CP&L had revenues of \$70.3 million, net income of \$12.7 million, and utility plant in service of \$310 million. Its rates were going down. But the winds of change were blowing. Sutton talked about these in an address to the Newcomen Society of New York, a group which bore the name of the inventor of the atmospheric steam engine.

"The progress of the past half-century is a mere indication of things to come," he said. "The electric industry proudly moves hand-in-hand with the citizens we serve toward a still better day, made the better by the 'team' that makes up our Company.

"The next half-century offers challenges and opens vistas as vast and unexplored as any that faced our pioneer predecessors. Out of the courage and integrity and enterprise of the past, we can draw inspiration for the future."

These were prophetic words from a man nearing the end of his career at the helm of a rapidly-growing utility company, words whose truth was echoed through the next three and a

half decades of change at a pace more remarkable perhaps than Sutton ever dreamed. The changes would shape Sutton's Raleigh-based company into a \$7.5 billion corporation serving more than one million customers. This is the story of CP&L during those years of challenge and change.

Sutton, then 68, guided the Company with a firm hand. Associates viewed him as flamboyant, a somewhat crusty southern gentleman, a leader in the power industry who had been president of Edison Electric Institute, the trade organization for electric utilities. He was credited with having insight into the kind of construction and money problems which the next decade would bring. A sales-minded engineer, he had introduced inducement rates during the 1930s. He had a firm jaw, a wide grin, and a reputation for being a man of action. He could be a very persuasive manager.

When Sutton was elected president of EEI in 1950, Electrical World said he "talks as readily and dynamically as any executive in the utility business" on system operation, rates and merchandising. Noting that his "soft drawl and easy manner are deceptive," the magazine described him as "neither reticent nor ultra-conservative."

Working closely with Sutton as vice president and general manager was H. Burton Robinson who had been with CP&L since he joined the Company in 1931 following a stint with Electric Bond and Share Company in New York. He had been elected vice president in 1943, a director in 1953 and general manager in 1955. He was a brilliant engineer, dedicated to cost control and to providing affordable, quality service. Associates perceived him to be ready and

willing to use new technology, an important virtue in view of changes taking place in the industry.

A small man physically, he would pound his desk and raise his voice to make a point, prompting his secretary of many years, Izzy Gill, to say of him, "His bark is worse than his bite." He frequently would approve proposals and then add, "I hope you are right ... for your sake." Described as one who operated "by the books", he was not politically minded and was said to have little appreciation for public relations. Across the Company, people assumed he would succeed Sutton.

Perhaps Sutton's most trusted confidante was W. Herbert Weatherspoon, then 74, a vice president since 1932 and general counsel and a director since 1935. Described as having a sense of caution that balanced the sense of action of Sutton, Weatherspoon had served in the state legislature before coming to CP&L. One of his frequent phrases is recalled as, "Now wait a minute, Louie". The Company's plant at Lumberton was named for Weatherspoon.

Joseph C. Richert was vice president for district operations, a post he had held since 1948, and R. B. Carpenter who had followed Sutton from Mississippi to Raleigh in the early 1930s had been treasurer since 1946.

Preparing for Succession

One of Sutton's priorities was to prepare for management succession. He had brought Shearon Harris, an attorney and former member of the North Carolina General Assembly into the Company in 1957 as associate general counsel. In 1960, Reid Thompson also would join the Company as associate general counsel. Thompson was a former member of the General

Assembly and had been the youngest superior court judge ever appointed in North Carolina. Weatherspoon was generally credited with recommending Harris and Thompson. However the employment of the two came about, it would prove to be a good judgment of executive talent as Harris would become chief executive of CP&L while Thompson would move to the same position at Potomac Electric and Power in Washington, D. C.

E. N. Pope, long-time manager of advertising and sales promotion and author of many of Sutton's speeches, credited Sutton with having the foresight to recognize that the Company's greater problems in the future would be in the regulatory and political arenas rather than engineering. For this reason he looked for leaders with political and regulatory insight and experience.

Sutton had a long history of opposing government power, specifically the Tennessee Valley Authority, the South Carolina Public Service Authority and the rural electric cooperatives. He had testified before congressional committees during his year as president of Edison Electric Institute. He saw subsidized, untaxed power suppliers as unfair competition for investor-owned, taxpaying public utilities. This issue would intensify during the early 1960s.

The Company had other needs. More than half of its industrial sales were to textile manufacturers. Its service area was heavily dependent upon an agricultural economy. How to attract a more diversified industry and how to help farm customers increase their income were major concerns for a utility which saw its future as being inextricably tied to the future of the area it served.

The establishment of the Research Triangle Park, championed by Governor Luther Hodges, had just been announced. Located near the center of a triangle formed by Duke University, the University of North Carolina at Chapel Hill and North Carolina State University, its 4,300 acre campus was a prospective site for industries desiring to build research and development facilities.

A basic marketing decision had been made, but it remained to be fully implemented. The coming of air conditioning was causing the Company's summer peaks to grow faster than winter peaks. Therefore, the promotion of electric heating had become a way to keep the summer and winter loads more nearly balanced, and to achieve a better system load factor.

Customer opinion about the Company was very positive. For 20 years surveys had been commissioned to measure attitudes about the value of electric service, about the Company and its employees as community citizens, and about private versus government ownership of their electric supplier. In all areas, CP&L consistently had shown a better customer relations picture than the national average.

Many would recall later that the decade after 1958 was CP&L's brightest. Communities would actively seek to be the location of the Company's new, more efficient power plants. Customers would buy more and more electricity. The price would go down. Area lights would brighten the countryside. New industries would come, bringing new and better jobs. Construction would begin on the first commercial nuclear power plant in the southeast. The

territorial issue with REA cooperatives would be resolved. And a new management team, headed by Shearon Harris, would assume leadership.

1959: ENTERING THE NUCLEAR FUTURE

An exciting new technology for the generation of electricity was on the horizon as 1959 began. The United States Atomic Energy Commission had granted an Access Permit in 1955 for certain CP&L employees to receive classified information on nuclear energy. Some CP&L engineers had completed nuclear courses at North Carolina State University, the first institution in this country to establish a nuclear engineering department and have a reactor on campus for instructional purposes. In 1956 the Company and three neighboring utilities -- Duke Power Company, South Carolina Electric and Gas Company, and Virginia Electric and Power Company -- had chartered Carolinas Virginia Nuclear Power Associates, Inc.(CVNPA), a non-profit organization to do research and development of nuclear fuel. Now came the next big step.

John A. McCone, chairman of the Atomic Energy Commission, announced that a

contract had been signed with CVNPA for a demonstration nuclear power plant at Parr Shoals, about 25 miles northwest of Columbia, South Carolina. Westinghouse would be the contractor for a 17,000 kilowatt heavy water, moderated pressure, tube-type reactor. Under the agreement, CVNPA would put up \$22 million for capital costs while the AEC would pay \$15 million for research and development and fuel use charges.

Other power companies were entering into similar agreements with the AEC to explore the feasibility of other types of reactors for generation of electricity on a commercial scale. There was optimism that the power of the atom could be harnessed to produce electric energy at much less cost. Raymond Talton, an engineer who was responsible for system planning, was assigned to oversee CP&L's interest in the Parr project. He was chairman of the project's technical committee.

There were two types of nuclear reactors which were viewed as potentially suitable for commercial use -- light water and heavy water. The light water type emerged as the choice for commercial application. Talton recalled that the heavy water design was chosen for Parr because it was the only one "we knew about that wouldn't require fuel enrichment. No one else in this country was building a heavy water reactor. There was a pioneering spirit associated with the project -- a sense that we were doing something that had never been done before. It was exciting, enjoyable and challenging."

Marketing Given More Emphasis

While taking a giant step into its nuclear future, CP&L also stepped up its

marketing effort. The rationale was simple: new coal-burning generating plants were larger and more efficient, so growing sales benefitted both the Company and its customers.

One of the first all-electric home promotions attracted 6,000 persons for an open house in Wilmington. A local newspaper reported that "large lighted closets throughout the house, with unique quick fold doors, were appreciated by the ladies. The men were attracted to the heat pump.... Day visitors were entranced by the yard light. When they placed their hand over the PE cell, the lamp would come on."

That the same machine could heat a house in winter and cool it in summer boggled the mind of many. This was the magic of the heat pump. The explanation to the curious was that the heat pump "is simply an application of refrigeration that utilizes a building as its cabinet and either heats or cools as it is directed by the inside temperature of the building."

There were other types of electric heating. Perhaps the most popular in the early years was electric ceiling. Small electric wires were imbedded in the ceiling. When activated by a thermostat, the invisible system would radiate heat. Baseboard heaters also allowed room temperature control. The least efficient system was the electric furnace.

In January 1959 the Company offered a \$25 prize to the salesman who would sell the first electric school heating job. The prize went to Houston Black for the four-room Anson County Training School at Wadesboro.

1959 also saw the end of the Finer Carolina program, a competition which encouraged community improvement. The awards for the last year were to Hartsville, S.C., and to Cary and Parkton, N. C. During the seven years of Finer Carolina competition, 180 communities worked on more than 4,600 separate projects aimed at beautifying residential areas, improving cultural opportunities, upgrading municipal facilities, stimulating business, and attracting new industry. Cleveland Thayer, long-time manager in Asheboro, was quoted in the local newspaper:

"Show me a community whose citizens are proud of their town and what it has to offer, who are proud of their homes, of their jobs, of themselves, and what they are capable of doing; and I will show you a community with a future and one in which it is a real pleasure to live."

Shareholder Meetings in South Carolina

Seeking to broaden understanding of issues confronting CP&L, Sutton and other senior managers met with shareholders in Florence and Sumter. Robinson reminded that modernization, automation and careful planning had enabled CP&L to hold down its charges and avoid rate increases while everything else increased in cost. "Our residential customers," he said, "are using 43 percent more electricity than the national average and paying 24 percent less per unit for it." The theme was one that would be repeated often in ensuing years.

Harris told the shareholders that about one-fourth of every dollar CP&L customers

were paying for electric service was used to pay taxes which for the most part were not required of TVA and REA cooperatives. Weatherspoon noted that the Company's \$17 million tax bill was almost double its payroll. "There is something wrong when taxes become the largest item of expense," he added.

This also was the year when the withholding for Social Security rose from 2.5 to 3 percent on earnings up to \$4,800. The Company bought its first compact cars, a Ford Falcon and a Chevrolet Corvair, expecting to test their suitability. None of the vehicles were air conditioned. An automatic dispatch computer and generation controller was installed at the Method dispatching center. A new access area was opened for public use on the southern shore of Blewett lake. The old landing near the dam was closed because the dam was a hazard for boaters and skiers who approached dangerously close before seeing it. The mood of the period was captured in a letter written by a retired minister to Jack Riley, publicity manager. The minister wrote, "I have seen how electricity helps people, and it seems to me that a company that brings so much good to so many people must be a good company to invest in."

The stage was set for the soaring '60s.

THE SOARING SIXTIES

The '60s saw the United States land men on the moon, lose its President John F. Kennedy to an assassin's bullet, bog down in a fruitless war in Vietnam, and birth a major anti-establishment movement. While those events were happening, CP&L was reaching new milestones in the size of its generating plants, the energy required by its customers, the use of nuclear technology, the diversity of industry it served, and the quality of life it brought.

Look magazine in a national survey entitled "How America Feels as We Enter the Sixties" asked the question: "Of the things you buy and the services you pay for, which one do you feel is the best bargain?" Thirty percent answered "electricity". It was the most popular response. For CP&L customers, electricity would become an even bigger bargain until the downward cost trend reversed itself at the close of the decade.

Attitudes within the Company were optimistic. Sutton set the tone at the 1960 meeting of shareholders when he declared the Company would quadruple in size over the next 20 years. He said growth would require an investment of \$180 million over the next five years for new facilities. He later said of 1960 that "our Company has never before, during one year, dedicated a new steam electric plant, started construction of another such unit at another plant, completed the installation of an additional unit at a hydroelectric generating plant, and shared in the ground breaking ceremony of a nuclear fuel generating plant."

Robinson Plant Dedicated

More than 2,000 people attended the dedication on June 11, 1960 of the Company's first generating facility in South Carolina. The coal-burning plant in Darlington county was named for H. B. Robinson, a native South Carolinian, "in recognition of his engineering skills and executive ability, and in commemoration of the efficient services he has rendered in the expansion and operation of the Company's properties and business during 30 most important years."

The Robinson plant with its 185,000 kilowatts of capacity was a milestone, marking the step to significantly larger units and the first use of computer technology. For operators accustomed to calculators, slide rules and logging readings manually, it was a giant leap.

When the 24,000 kilowatt hydroelectric generator at the Tillery plant came on line in August 1960, it was the first hydro generation added by the Company in 30 years. And it would be the last. Only a few weeks before, the small Eury hydro plant near Tillery had been retired as a part-time peaking facility. It was unique in that it had only one operator during its 48-year life. He was Renzy Richardson who, as a crane operator, helped build the plant. Richardson's retirement coincided with that of the plant.

The 252,000 kilowatt third unit of the Goldsboro plant was designed to be the world's first coal-fired generating facility operated entirely by an electronic computer. Robinson knew that another utility already was installing a computer to operate a gas-fired plant. He wanted CP&L to be the first to use the technology for coal.

The annual report described the Steam Power Automation and Results Computer (SPARC). "It will monitor and record operating data, and when 'educated' will operate the unit from memory data stored in its electronic brain. SPARC will be able to take the power unit out of operation in response to danger signals and return it to service after such dangers are eliminated. With its ability for almost instantaneous computation of problems, which previously would require many human hours to calculate, the SPARC is expected to improve operational efficiency and reduce costs."

Although the computer hardware was unreliable and the system never produced the automation that was anticipated, the installation of the computer was a very clear signal of the Company's intention to be a leader in using new technology.

As ground was broken in October for the Parr nuclear plant, Robert H. Solomons III, executive secretary of the Regional Advisory Council on Nuclear Energy, declared "this plant is tangible evidence of the progressive attitudes shown by the people of the southern states in meeting the challenge of the Atomic Age."

Additional Officers Elected

When the directors met in December 1960, Sutton proposed a resolution which would authorize the Company to include nine vice presidents among its officers. After the resolution was approved, five new vice presidents were elected: Shearon Harris, Hugh G. Isley, Arthur J. Skaale, Dan E. Stewart and E. N. Pope. The action was seen as evidence of the "growing up" of the Company. Harris continued as associate general counsel, Isley was responsible for sales, Skaale for engineering, Stewart for area development and Pope for advertising and sales promotion.

Employees enjoyed esteem and respect in their communities. For example, E. E. Utley was superintendent of the Weatherspoon plant. Steeple Times, newsletter of the local Methodist church, described him as "a young man with enthusiasm, courage and ambition." Then it reported on a softball game in which he was pitching:

"As he wound up to let one go, the fellows were calling for him to 'put it in orbit'. He kept winding harder, faster, faster. Finally, he thought he'd let go. He did, but when he loosened the atomic grip on the ball, the shock from the jet-like propulsion was too much for his arm. It was broken."

For Utley it was an early manifestation of the commitment which would carry him to a senior executive vice presidency.

The same measure of intensity was shown by CP&L crews which restored service following an ice storm that left customers without service in areas stretching from Raleigh to Southern Pines and Selma. Their work prompted Col. George M. Nevius of Southern Pines to write Sutton:

"I have had occasion to witness similar storms in other parts of the U. S., but I have never seen public utility repair crews react more quickly, nor work more diligently and efficiently than your maintenance men."

Such tributes were heard routinely. The public considered the Company a good place to work and regarded its employees as fortunate.

BUILDING THE MANAGEMENT TEAM

The forming of a new management team was an orderly, deliberate process. In 1962 Weatherspoon, then 78, turned the duties of general counsel over to Harris. Mr. Herbert, as Weatherspoon was affectionately known to his associates, was a pillar of the community -- former president of the Raleigh Chamber of Commerce and of the North Carolina Citizens Association, a prominent Baptist layman for whom a building on the Meredith College campus was named, a giant among legal minds in the electric industry.

Skaale's responsibilities as head of the operating and engineering department were passed to Paul S. Colby at the end of 1962. Colby had come to CP&L in 1951 following 10 years as an engineering consultant with Ebasco Services. He was superintendent of substations prior to becoming department manager. Skaale was retained as a consultant to complete the development of plans for the Carolinas-Virginia power pooling agreement on which he had been working since 1961.

In the spring of 1963 Harris was named president. His rapid rise came as a surprise to many employees who were accustomed to seeing senior management positions go to persons with long years of service. At the same time, Robinson was elected executive vice

president and Thompson was elected vice president and general counsel. Robinson's disappointment at not getting the presidency was no secret. He thought it had been promised to him. The ensuing years until Robinson's retirement in 1967 were marked by tension between him and Harris that was felt by others.

Harris brought to the presidency a keen intellect, quiet confidence, disciplined work habits, a sincere concern for people and what his classmates at Wake Forest University called a fierce determination to rise to the top. The son of a Baptist minister, he had entered the University on his fifteenth birthday and earned a law degree by the time he was 20. He paid his way by managing "Miss Lula's" boarding house, recruiting workers and boarders, and sometimes waiting tables.

He had demonstrated his political instincts early. Even though few students could vote, he persuaded the campaign manager for Clyde Hoey, a conservative democratic candidate for governor, to schedule Hoey for an appearance at the University. Harris borrowed a pickup truck, parked it near the administration building to serve as a platform, and proceeded to make a stirring introduction, assuring the candidate that the students would influence voters. Hoey was elected.

Harris added to his political insight by serving as assistant principal clerk in the Senate during the 1937 and 1939 legislative sessions and as principal clerk in the House during the 1941 and 1943 sessions. After military service, he had practiced law in Albemarle. One of his clients was a bus company which he represented before the State Utilities Commission. He had

served one term in the state legislature, representing Stanley County.

John S. Monroe, administrative assistant to Harris during the mid-70s, was impressed that Harris had such deep insights and could get at root causes so quickly. "He dealt with the vital few things," Monroe recalled. "He never went to a meeting merely to be in attendance. He went to influence action. He expected to have substantial input. He was a very sensitive, caring, emotional person who caused you to feel he would do anything for you. He was frugal. He was an inspirational manager."

To those who would greet Harris with a polite inquiry about how he was getting along, he had a consistent answer: "the best in the world". It was a phrase carried from an unforgettable experience. While he was home from Wake Forest University for a holiday, his father asked him to visit a family friend who was critically ill. Usually when he had seen the friend and asked how he felt, the response had been "first rate." This time the friend was so ill he could not speak. But he held up one finger to signal he still was first rate. From that moment, Harris determined he could never be less, so he adopted the phrase "the best in the world."

As he assumed the duties of president, Harris did so from a background rich with political and legal experience, and with over five years of service in the utility. One associate said he talked often about being a professional manager, not a lawyer or specialist. He knew many of the challenges he would face. There would be others.

Electric Industry Entering Its 'Third Phase'

Reid Thompson recalled a meeting with Sutton before coming to CP&L. He said Sutton told him the electric utility industry was in its third major phase. The first phase was getting started, a time of utilizing a new technology which demanded engineering leadership. The second phase was a time of financial stress when many consolidations and reorganizations occurred and financial guidance was crucial. In its third phase, the industry found itself besieged on every hand by regulation and in need of "good lawyers".

Sutton saw himself as an engineer who had managed through the first two phases and recognized the challenge of the third, Thompson reflected.

What Thompson brought to CP&L was a depth of judicial and political experience that was unusual for one of only 36. He had served with Harris in the General Assembly and the two were close friends. He was a quick learner, one who could quickly probe for the salient points and analyze situations. His manner was very direct. From the beginning, he had the ambition and the drive that marked him for success. He and Harris appeared to form a team to build for the future.

Reflecting on the early '60s, Thompson said the Company's problems were "relatively minor," especially when viewed in the context of what was to come during the 1970s. "We were building a new plant every two years, each one a little larger than its predecessor; rates were stable or going down, all the new capital we needed was available for about 4 percent, and the major concern was competition for territory with REA co-ops."

Shortly after becoming president, Harris merged the advertising and sales promotion function with publicity to form a public relations department headed by E. N. Pope. He wanted more corporate emphasis on public affairs and he wanted a formal management development program. Because the only other department reporting to him at the time was the legal function, he chose to make management development a part of public relations. To direct management development, he promoted W. J. Ridout from his position as head of agricultural development.

What Harris wanted to do, Ridout explained, was to identify 48 persons without their awareness and train them for management responsibilities. Further, he wanted an additional program to provide training for supervisors.

In 1964, Harris gave added emphasis to governmental relations at the federal level by removing the function from public relations and elevating Jack Riley to vice president - public affairs. Riley's only responsibility was for Washington issues. He reported to Thompson.

The premise on which Harris acted was simple. He believed decisions made in the political arena would have a major impact on the Company's future. "Employees should be players, not spectators," he declared. He authorized information meetings for all employees to have opportunity to participate in a program to help them understand how individuals become involved in the political process.

With the assistance of an outside consulting firm, Harris and Thompson began an organizational study. The process was long and the new form of organization was implemented over years. But the plan provided a road map for Harris, and every major personnel move carried him closer to his goal of four groups, each headed by a senior executive.

The retirements of Robinson, Pope, Richert and Carpenter in 1967 opened an opportunity for less painful transition to the new organization. When Isley retired in 1966, Harris named Ridout general marketing manager. Ridout was assigned to report to and understudy Richert who headed district operations, anticipating the formation of a customer services group. James S. Currie succeeded Carpenter as treasurer. Currie had been commissioner of revenue for the state of North Carolina before coming to the Company in 1961.

Group Organization Established

The first group to be formed was legal and finance in 1967. It was headed by Thompson who became executive vice president when Robinson retired. Departments in the group were legal, treasury and accounting, rates and service practices, corporate secretary, and public affairs. Charles F. Rouse succeeded Thompson as head of the legal department and was elected a vice president in 1968. While it attracted little attention at the time, the assignment in 1966 of Samuel Behrends, Jr. to head the rates and service practices department spoke loudly

about what Harris and Thompson saw ahead. Behrends had come to CP&L after stints as assistant attorney general and in private law practice where his experience was heavily oriented to utility regulation. He would be elected vice president in 1969.

In May 1968 the other three groups were formed. Ridout headed customer services which included three departments: district operations, managed by J. V. Henderson; sales, directed by W. P. McPherson; and area development, managed by C. J. Turner. The operating and engineering group was headed by Colby who had been manager of the operating and engineering department since 1963. It included three newly-created departments.

Raymond S. Talton, a veteran of 31 years with the Company who had been responsible for system planning, became manager of the engineering department; Edgar M. Geddie who came to CP&L in 1935 and had been superintendent of lines became manager of the transmission and distribution department; and J. A. "Ott" Jones, a CP&L employee since 1951, headed power supply. Talton was elected a vice president while Jones and Geddie were elected assistant vice presidents. Both were elevated to vice president during the next year.

The administrative services group was headed by James R. Hinkle. Harris had persuaded him to return to the Company in 1965 after three years as director of the North Carolina Division of Industry and Commerce. He returned as manager of area development. Departments in the new group were personnel, public relations, and purchasing which were headed respectively by James S. Newbold, A. L. Morris and Harry Caldwell.

Harris envisioned his group executives and himself as being removed from the day-to-day operations to permit them to focus on planning and policy decisions. Their offices were relocated on a separate floor of the building. But they never could isolate themselves from daily happenings within the Company.

Sutton Retires

At the end of 1968, Sutton passed the duties of chief executive to Harris, retaining his title as chairman. He had led the Company for 36 years during which it had grown from 62,500 to 530,000 customers, from \$8.5 million to \$169 million in annual revenues, from 630 to 2,500 employees, from 321,000 to three million kilowatts of generating capacity.

His last major speech was to the Southern Furniture Manufacturers Association. It was vintage Sutton, a ringing endorsement of the free enterprise system filled with warnings about threats to it from within.

"The principle difference between our economic system and all others is that ours was intended to be a privately owned economy. The profit incentive is a spur to all men. That is the only real basis of success in America -- the hope of reward -- the incentive to produce, together with the necessity of competing with others. Incentive might be called the spark plug of our system. Incentive is what makes our system tick.

"Our trouble ... is that we have not held fast to that system. We need to remember

that economic freedom and political liberty are inseparable. You cannot throttle one without weakening and destroying the other.

"We saw assaults upon enterprises and industries that began in the thirties, gained speed in the forties, continued in the fifties, and now these past eight years of the sixties appear to have taken the greatest toll," he cautioned. And then Sutton exhorted his listeners: America needs us, every one, to help keep the fires of freedom burning. What is at stake is survival itself.

On January 5, 1970 Sutton died. At the March meeting of directors, Harris was elected chairman. From his earliest days with the Company, he had heard reports that the investment community was concerned about the age of CP&L officers and directors. He established a policy that Company officers retire at 65. If officers also were directors, they were required to leave the board at the time of their retirement. The policy did not apply to incumbent directors. Two years later, after extended consideration, the board adopted a policy that outside directors retire at age 70.

The new management structure was in place. And none too early. Major problems were on the horizon.

EXPANDING THE SYSTEM

The buzzword on the production side of the Company was "economy of scale." The Robinson plant was 185,000 kilowatts. Advances in power technology allowed manufacturers to offer systems five times as large. The bigger plants required little more land and operating staff, and per unit of capacity, they were more economical to build. Regardless of size, the new plants made better use of fuel, producing a kilowatt-hour from less than one pound of coal. Older plants operated by CP&L required more than two pounds.

Clearly, the Company and its customers benefited from building new plants as rapidly as the capacity could be utilized. The problem was that the CP&L system was needing only about 200,000 kilowatts of additional generation every two years. What could the Company do to let it realize more fully the economies of scale?

Carolinas-Virginia Power Pool

CP&L joined with Duke Power, South Carolina Electric and Gas, and Virginia Electric and Power to form the Carolinas-Virginia Power Pool (CARVA). The pooling agreement was announced in 1961. It called for joint planning of transmission lines as well as generation. Under the plan, a company would build a large unit and contract for sale of the excess capacity to the other companies until its system grew to require full output of the unit. Another economic benefit of pooling was that individual companies would no longer require

spinning reserve equal to or larger than their biggest unit. For reliability, the combined spinning reserve only needed to exceed the size of the largest unit in the pool.

A. J. Skaale, director of the operating and engineering department, represented CP&L in the early planning of CARVA. He likened the spinning reserve aspect of the pooling arrangement to four automobiles traveling together. As long as they stayed together they would require only one spare tire. If traveling alone, each needed a spare.

The CARVA agreement was fully implemented in 1967.

New Coal-fired Plants

Circumstances dictated a build and sell philosophy. State governments in the Carolinas were promoting industrial growth and economic development to create new and better jobs. Rates for everyone were going down as new and larger plants were added to the system. The Company responded energetically. In 1961 ground was broken at Asheville for a 198,000 kilowatt coal-fired plant. It would be the primary source of power generation for the western division. To protect air quality, it would have the first electrostatic precipitator on the Company's system. Other plants used mechanical dust collectors.

Speaking at the groundbreaking, Senator Sam Ervin noted that the United States was producing more electric power than the next five countries combined. "The plant that will rise here ... is tangible evidence of the way the American free enterprise system is outproducing --

and will continue to out produce -- the best that the rest of the world can muster."

In 1962 the 252,000 kilowatt addition at Goldsboro was completed, and the plant was named for Harry Fitzhugh Lee, a retired Goldsboro district manager who spent 45 years with the Company. Associates said his name was synonymous with electric service in Wayne County. Lee was a great grandson of "Light Horse" Harry Lee of Revolutionary War fame, and a grand nephew of Robert E. Lee, the Confederate general.

Also in 1962 came the announcement of plans for the Roxboro plant in Person county. The 385,000 kilowatt first unit was scheduled for service in 1966. The 7,000 acre site was judged to have the potential for development of 2,850,000 kilowatts. It would include a dam across the Hyco River to create a 3,750 acre cooling reservoir. A major factor in selection of the site was its accessibility to the coal mines of West Virginia and Kentucky. Transportation represented about half the cost of coal. Shortening the haul was an opportunity to control costs.

Soon after land clearing began, Sutton traveled through the area on his way to a meeting in Virginia. Observing the extent of activity, he commented to his driver, Oley Baugh, that it looked like something big was about to happen and he wondered what it could be. Baugh responded, "This is us."

The Asheville plant began operating in 1964. The cooling lake and adjacent land was made available to the City of Asheville for the development of a recreational park. The reservoir later was named Lake Julian to honor Julian B. Stepp, the Company's district manager in

Asheville from 1943 until 1966. The only stipulation was that the recreational use of the land and waters must not interfere with operation of the plant. Not far away, the small Elk Mountain steam plant which had operated since 1916 was retired. A year earlier, the 3,300 horsepower Weaver hydro plant on the French Broad River had been retired.

Of all the people who worked at Weaver and Elk Mountain, Loomis Marshall probably knew them best. He worked at the plants from 1921 until their retirements, rising from maintenance man to superintendent. He could recall when 60 men were required for the operations. The number was down to 10 for Elk Mountain which Marshall described as "far from being worn out" but so inefficient in burning coal as to make it obsolete.

Consistent with its schedule of adding a major new generating facility at two-year intervals, the Company planned a second Roxboro unit for operation in 1968. It was the first unit the Company constructed under the CARVA agreement and its 670,000 kilowatt capacity brought more economy of scale to the system.

While building and planning coal-fired plants, the folks in engineering and operations kept an anxious eye on nuclear developments.

Parr Plant Begins Operation

Governors Ernest Hollings of South Carolina, Terry Sanford of North Carolina

and Albertis Harrison of Virginia were present for the dedication of the Parr plant in October 1962. Speaking at the dedication, Dr. Robert E. Wilson, a member of the Atomic Energy Commission, said it was the short-range goal of the AEC to make large nuclear power plants competitive by 1968. He declared that "supplemental energy sources must be fully developed for the future if our country is to enjoy continued and expanded economic and technological growth." And he added: "The Commission believes there is no substitute for knowledge gained from actually designing, building and operating selected prototypical plants."

The Parr plant achieved criticality on March 30, 1963, and delivered its first electricity the following December 16. The power was channeled into the transmission system of South Carolina Electric and Gas, and through interconnections into North Carolina and Virginia. It was the first electricity generated from nuclear energy to flow into the homes of consumers in the southeast.

Sutton, then president of CVNPA, hailed the event as "fulfillment of a program begun in 1956 to develop a facility which would use nuclear fuel to generate electricity and serve as a source of research and development data for the sponsoring companies and the Atomic Energy Commission."

One CP&L person who was on the scene at Parr was Walter E. Selkinghaus, administrative engineer for the Parr plant. He had been a professor of mechanical engineering at North Carolina State University and subsequently superintendent of CP&L's Weatherspoon plant.

Writing in the May 1964 Spotlight, he said "those who have worked so diligently in the past few years to see these efforts bear fruit feel that although this prototype unit is small, it has answered many questions leading to larger units that will be built in the future."

The Parr facility operated until the summer of 1967, providing valuable training in instrumentation, control, operation and maintenance. One observer wrote "it may be that Parr did its job too well. It fulfilled its objectives efficiently and thoroughly ... and perhaps more quickly than anyone could have imagined ... and in so doing accelerated its own rush toward obsolescence."

Study of Nuclear Power's Potential for CP&L

The successful start-up of Parr combined with other developments in nuclear technology led to an in-depth study of nuclear power's potential for CP&L. Raymond Talton was in charge of the study. He concluded that nuclear fuel would cost only half as much as coal. Even with the larger investment required to build a nuclear plant, the saving on fuel could save millions of dollars. He carried the preliminary report to H. B. Robinson, executive vice president, who asked him to have it reviewed by Ebasco Services.

In New York, Talton had an all-day session with Ebasco officials. They brought in many different people to ask questions. When the day was finished, he said he felt like a plucked chicken. He had the distinct impression that Ebasco had seen its first nuclear study. A few weeks later, Ebasco reported it agreed with the conclusions reached by CP&L.

Robinson then scheduled a meeting with Sutton who had seen the study and knew the Company faced a decision about its next generating unit. Robinson opened the session by saying, "We've been dabbling in nuclear now to the point where the next plant should be nuclear."

Sutton agreed. It was a short, upbeat meeting that cleared the way for Talton to move ahead with plans for the first commercial nuclear power plant in the southeast.

Specifications for a 650,000 kilowatt unit were prepared and bids invited from four manufacturers. The bids were due October 15, 1965.

Meanwhile, Talton also was seeking a location for the plant. In July 1965 he made a visit to Hartsville, South Carolina. His mission was two-fold. He met with local officials and on the next day he spoke to a Hartsville civic club. He told them that the Company was considering the location for its next increment of generating capacity. He said the unit could very well be nuclear and that it could become the second phase of the Robinson plant. He explained that a nuclear unit would have a capacity of about 650,000 kilowatts and represent an investment of more than \$70 million. It was a deliberate effort to test community reaction. The response was entirely positive.

State Senator J. P. Mozingo III rose to comment following the civic club presentation. He pointed out the effort put forth to attract small manufacturing plants which required local governments to provide water, sewer and other services. Then he noted that an addition to the Robinson plant would dramatically increase the tax base without imposing

significant demand for additional services. He referred to this new plant as "gravy" for Darlington County.

Within a few days, Mozingo forwarded a resolution from the Darlington county legislative delegation which noted that "the Darlington county development board, the Darlington county commission, and the chambers of commerce of the various municipalities located within Darlington county as well as numerous other people have written the officials of Carolina Power and Light Company requesting that this facility be located at the Lake Robinson site”.

"Therefore ... the Darlington county legislative delegation hereby extends to the Carolina Power and Light Company a most cordial invitation to locate the contemplated facility at the Lake Robinson site ... and pledges its full and complete cooperation ..."

G. Graham Segars, chairman of the Darlington county commission, also forwarded a resolution from the commissioners "urging CP&L to give fullest consideration to the expansion of its present facility at the Robinson Plant location..."

Joe Wiggins of the Hartsville Messenger gave his support in an editorial entitled, "Glad Tidings". A few days later, Talton reported there had been no unfavorable resolutions, letters or editorials. CP&L could not have asked for more from the community.

In August, Talton accompanied Harris, Robinson and Paul S. Colby, vice president of the operating and engineering department, on a trip to Washington to meet with the

Atomic Energy Commission. Their purpose was to make the AEC aware of the Company's plans to build a nuclear unit. They shared the resolutions they had received from Darlington county officials and groups.

Harris said the resolutions and letters "...implied not only an enlightened acceptance of progress, but also an energetic desire to be in the forefront in this exciting age of scientific advancement. They made a favorable impression on the commission."

Talton recalled that the AEC was encouraging industry to examine nuclear and consider it . "They said ours was the best presentation they had seen. Ten years later you couldn't have gotten in the door with the report we gave." As to the type of reactor, the report said it would be boiling water or pressurized water with the selection based on proposals from manufacturers. The Company made clear that it did not intend to experiment with an unproven system.

Directors Approve Robinson Nuclear Facility

When CP&L directors met on January 19, 1966, they approved the recommendation for construction of the nuclear unit at the Robinson plant. The decision was announced that evening at a meeting with Darlington county officials. A week later the announcement came that Westinghouse had been awarded a turnkey contract to supply components and construct the 700,000 kilowatt unit. Ebasco Services was chosen to be architect-engineer and subsequently was named constructor, too.

Most of the contract negotiations with Westinghouse had taken place in a

downtown Raleigh motel where CP&L was represented by Samuel Behrends of the legal department and J. A. Jones and W. B. Kincaid of the operating and engineering department. "We were a power plant engineer (Jones), an 'engineer of sorts' as Kincaid called himself and a country lawyer," Behrends recalled. "But it worked out fine. There's never been a nuclear unit of comparable size built at less cost."

Construction on Robinson 2 began in May 1967 shortly after the construction permit was received from the AEC. As the first commercial nuclear power plant east of California and south of Philadelphia, Robinson 2 attracted much attention during construction. The Company erected a visitors center on a knoll overlooking the plant and installed exhibits to help the public understand the operation of a nuclear power facility. Walter E. Selkinghaus who had been administrative engineer at the Parr plant was director of the visitors center and responsible for answering questions from the public.

The heaviest component of the plant was the 321-ton reactor vessel which was fabricated in Chattanooga, Tennessee. It was barged down the Tennessee, Ohio and Mississippi rivers to the Gulf of Mexico, across Florida through the Okeechobee Waterway, and up to Georgetown, S. C., via the Intracoastal Waterway. At Georgetown it was loaded onto a custom-built rail car with 12 axles. In preparation for moving the reactor vessel, the Seaboard Coast Line Railroad had to strengthen its trestles, construct sections of new track to bypass low bridges, and remove eaves from some of its stations to permit clearance. The special train traveled only during daylight and at speeds less than 10 miles per hour.

Movement of the reactor vessel reflected the kind of detailed planning that had to

go into construction of such a massive facility. Ebasco named M. A. McDuffie construction manager for Robinson 2. He had been working on CP&L projects for Ebasco since 1948, including assignments as construction engineer for Robinson 1 and project superintendent for Roxboro.

Site Sought for Nuclear Plant in North Carolina

As construction on Robinson 2 moved ahead, Talton began the search for another nuclear plant location. He focused on land along the Cape Fear River just upstream from Southport. There was an abundance of water available for cooling, and preliminary studies indicated the geology was suitable. The time for a public announcement came in 1968. Without identifying CP&L, the Brunswick Resources Development Commission invited about 60 of the county's leaders to dinner to meet a "prospect".

That evening Harris, Colby and Talton revealed that CP&L was investigating the Southport site as the potential location for a two-unit nuclear generating plant. If built, they said it would cost in excess of \$200 million and it would triple the county's tax base.

James Harper, publisher of the Southport State Port Pilot, prefaced a question. Brunswick county has been led to the altar with industrial prospects several times, he said, but a marriage has never been consummated. Then came his question. What can we do to assure that this time the marriage does take place?

Harris responded. We will not try to locate a plant where the local people don't want us. We will not pay exorbitant prices for land. We will expect assurance from local officials that they will be prudent in setting tax rates and spending revenues. Further studies must confirm that the site is capable of development from a technical standpoint.

Harper had another question: How will you determine whether the local people want the plant? Harris answered by citing the volumes of letters and resolutions from officials and community groups in Darlington county when Robinson 2 was being considered.

The chairman of Brunswick county commissioners, George Rourk, was quick to call the announcement a big day for the county. Later, he informed Harris that the "commissioners are wholeheartedly behind this project and are looking forward to it becoming a reality."

Harper editorialized in the State Port Pilot: "There is every indication that company officials can count upon complete cooperation... Everyone there was realistic enough to realize that some insurmountable problem may come up to block this project, but there was a general feeling of optimism, born of the thought that the citizens of Southport and Brunswick county will do everything in their power to see that this does not happen."

The Wilmington Morning Star also editorialized: "It is our belief that the Brunswick people, and the people of this entire section as well, will be in solid support...."

Within three weeks, Brunswick officials traveled to Raleigh to present Harris with four bound volumes of letters, resolutions and newspaper clippings which supported the project. Included in the group were E. B. Tomlinson, Jr., mayor of Southport; W. A. Powell, chairman of the Resources Development Commission for Brunswick county; and John Barbee, county commissioner.

Thus began the road to construction of the first nuclear generating plant in North Carolina, a development which would lead other industry to Brunswick and change forever the sleepy pace of this rural coastal community.

Only a few days later, the Company announced that it had ordered three nuclear steam supply systems and turbine generators from General Electric. Two of them were expected to go to the Southport site.

The Northeast Blackout

When Thomas Edison died in 1931, the suggestion was made that as a tribute to him the nation turn off all electricity for one minute. The idea was rejected as unthinkable. On November 8, 1965, residents of the northeast experienced what it would have been like. Except that for some of them, the experience lasted 13 hours. Suddenly, the public became very interested in an industry it had taken for granted.

The Northeast Blackout, as it became known, left 30 million people in eight states, including New York city, and part of Canada without electric service. It came at the evening rush hour, stalling hundreds of packed commuter trains, stranding thousands in elevators, and snarling traffic. Economic losses exceeded \$100 million. It tarnished the image of the electric industry and prompted lawmakers in the nation's capitol to begin looking for legislative fixes.

The problem was the malfunction of a tiny relay on a 230 kilovolt line carrying power from a plant at Niagara Falls into the Ontario system. Its failure caused four other lines to trip, reversing the plant's output into the New York grid and causing instability that shut down systems in domino fashion. CP&L and other companies across the country responded quickly by increasing their generation and through interconnections dispatching power to the distressed area. Most customers had service restored after two hours. But in Manhattan the outage stretched to 13 hours, largely because Consolidated Edison suffered damage to some of its bigger generating units during the abrupt shutdown.

Six weeks later Jesse Helms, then the editorial voice for Raleigh's WRAL-TV, reported that some politicians saw the blackout as absolute proof that the electric industry ought to be placed squarely and entirely under the federal thumb. He said there were demands all around that private companies be investigated and that legislation be sent to the Congress to prevent such chaos ever occurring again. Ironically, the failure that triggered the blackout was in the government-operated Canadian system. Helms reported this fact was little known because the U. S. State Department asked the Edison Electric Institute to withhold the information from the public lest it "injure international relations with Canada."

The blackout left an indelible imprint on the power industry. Colby said it triggered further federal involvement in the companies' decision making. The Federal Power Commission established the National Electric Reliability Council made up of regional councils. CP&L joined with 22 other power systems to form the Southeastern Electric Reliability Council (SERC). Purpose of the Council was to assist member systems in assuring maximum reliability in supplying power within the region. It provided a vehicle for coordination between systems -- public and private, large and small.

But the interconnected power grid which enabled distant systems to come to the aid of the Northeast had been in place for years, a result of planning by investor-owned companies. As it entered into planning of the CARVA pool in 1961, CP&L had reported to shareholders that "similar pooling is practiced or contemplated by the majority of ... companies across the nation.... The power industry expects within the decade to invest \$8 billion in new transmission facilities, so interconnected as to constitute one continuous power network reaching into almost every region of the nation. Nearly all electric power systems east of the Rocky Mountains -- 100 companies in 32 states -- now are interconnected."

Larger Transmission Network Started

As new generating plants were added, it also was necessary to build more and larger transmission lines. Through 1964, the major transmission voltage on the CP&L system

was 110,000 volts with a relatively small amount of 132,000 volts. In 1965 construction began on a 315 mile network of 230,000 volt lines to span the system and link it to the Roxboro and Robinson plants. The 230,000 volt transmission grew to 900 miles by 1970. In concert with Duke Power and Virginia Electric and Power, CP&L in 1968 began construction of 207 miles of 500,000 volt transmission to provide a loop of "superhighway" for movement of large blocks of power. The CP&L section linked with Duke at the Union county line and with Virginia Electric near Littleton. To be completed in four years, it was another safeguard for reliability.

By the end of 1991, the Company's transmission system had grown to 5,858 miles, including 2,901 miles of 230,000 volt and 292 miles of 500,000 volt. The system had 34 interconnections, including ties to Virginia Electric and Power, Appalachian Power, TVA, Duke Power, South Carolina Electric and Gas, and the South Carolina Public Service Authority.

Scorching Summer Triggers Record Growth

1968 was a stressful year for system operations. The Company had never seen anything like it. Air conditioning had become the norm for shopping centers, commercial buildings, factories and homes. The resulting energy demand during a long, hot summer repeatedly set new peaks, finally reaching 2.8 million kilowatts on August 19. That was almost 25 percent above the peak for the previous summer. For a two year period, growth in peak was near 35 percent.

One official observed later that any planner who would have suggested such

growth in only two years would have been thought to have lost his sanity. Since World War II the Company had added new units as fast as it expected the capacity could be sold, staying comfortably ahead of customer usage. Now its reserves were wiped out.

The problem for CP&L was two-fold: meeting the demand of 1968, and adding generation fast enough to keep up with customer needs in 1969 and beyond. There were short intervals during the summer of 1968 when the Company lacked capacity to carry its load independently, could not make firm purchases from other companies because they had nothing to sell, and thus had to depend on in-flow of power from the interconnected grid to get it through peak periods. Dispatchers described it as "riding the tie lines." Where it was feasible, voltage was reduced, stretching the Company's energy supply by about two percent.

Fortunately, construction of the Roxboro plant had been on schedule. When unit 2 came into operation in May, 1968 it brought the plant's total capacity to 1,091,000 kilowatts. Roxboro represented one-third of CP&L's capability. In anticipation of starting Roxboro 2, the Company in 1966 contracted for the entire output of one mine and half of another to assure an uninterrupted supply of quality low-sulfur coal. The plant was burning 2.25 million tons annually. To supply it required five unit trains a week, each pulling 90 coal cars.

Stephen Meehan, a member of the Company's news staff, rode one of the trains from the mine to Roxboro. He reported in Spotlight that the 37-hour journey through the West Virginia mountains to Roanoke and up the steep incline of Nace Hill was high adventure. To climb Nace Hill, the train was divided into two sections. When the four engines pulled the first 45

cars to the top, they went back to get the second section. He noted that at the mine each coal car was filled in 1.5 minutes. When the train arrived at the plant, a large machine that resembled ice tongs seized the cars, five at a time, and emptied them in only two minutes.

Five internal combustion turbine-generators also had been added to give 90,000 more kilowatts. Sutton called them monuments to poor planning. They could be delivered and installed within 12 months. In the CP&L system, they were intended for operation only at times of peak demand. They were quick-starting, oil- or gas-burning units which had low capital cost but relatively high fuel expense. They were placed strategically at the Sutton, Lee, Robinson and Roxboro plants so that in the unlikely event of a system failure they could provide an alternate power source for emergency start-up of large coal-fired units. The fifth was at Morehead City, on the periphery of the system where its location added to reliability.

Accelerating the Schedule for New Generation

The future was cloudy. Next unit scheduled on the CP&L system was the nuclear addition at Robinson. At the earliest, it would not be available until the summer of 1970. The CARVA pool faced shortages, certainly inadequate reserves. Colby blamed this on overly conservative planning, a preoccupation in the CARVA executive committee with achieving the economies which had been anticipated from reducing reserves.

Colby moved quickly to add coal-burning capacity. Equipment manufacturers had backlogs of orders. But he found space in General Electric's schedule for a 200,000 kilowatt

turbine generator which he bought. Then he asked Ebasco Services to help locate a boiler. With these components assured, he obtained an existing plant design and entered into an incentive contract with Brown and Root to build Asheville 2 by May 1971. It was an ambitious schedule, but it was met.

Looking to other existing sites where capacity could be added quickly, Colby and Jones contracted for Sutton 3, a 420,000 kilowatt unit which was designed to burn either coal or oil, depending on which was more economical. It was scheduled for 1972. At this time, Brunswick I was expected to be operational in 1973.

Something had to be done for the short term and the only choice was the addition of more combustion turbines. Six IC turbines totaling 139,500 kilowatts were ordered for installation in 1969.

Colby watched construction schedules carefully. When Brown and Root reported concern that the steam generator and turbine for Asheville 2 would not arrive as expected, Colby and Jones flew to the General Electric plant in Schenectady. They found the turbine covered with snow, but ready for shipment. Unable to locate the generator, they learned it had been manufactured in Canada and was nearly ready for delivery.

As Colby bought the turbine generator for Asheville 2, he found GE had room on its production line for a second unit of the same size. He said he tried to convince CARVA to buy it, but his effort was rejected because others believed a plant could not be completed for the

summer of 1971. They also considered it too small.

Labor Protests Choice of Contractor for Brunswick

The Company's decision to use an open shop contractor for the Brunswick plant riled Wilbur Hobby, president of the North Carolina AFL-CIO. He organized and orchestrated a protest rally and march for union members and sympathizers in Raleigh on September 12, 1969. There were about 5,000 marchers, some from as far away as Chattanooga, many of them tobacco plant workers. Hobby was joined by labor leaders from Atlanta and Washington.

He prepped the marchers by telling them that CP&L's out of state contractor, Brown and Root, would bring in non-union workers and pay substandard wages.

As the chanting marchers moved up Fayetteville street behind a flat-bed trailer that served as a platform for the leaders, they halted in front of the Durham Life building in which the Company's general offices were housed. Hobby announced, "Now our first team is going in to meet with their second team."

In CP&L's fifth floor boardroom, Hobby and his team met with Ott Jones, assistant vice president for power supply; Ed Utley, power production manager; Robin Hinson of the legal department; and Albert Morris, director of public relations. It was an orderly meeting which Morris moderated. In rhetoric which contrasted sharply with their street language, the labor

leaders expressed concern about jobs and the quality of a plant built by non-union workers. Jones reminded them of the state's right-to-work law with which he said CP&L was complying. He said construction workers would be hired on the basis of ability. "We will not ask whether they carry a union card," he added. What Hobby wanted was a closed shop.

While the discussion was underway, the marchers circled the Capitol Building and returned along Fayetteville street, with such chants as "we want jobs, to hell with Brown and Root, send them back to Texas, we want TVA." Several times Hobby suggested a period of silence to hear the voices of the people in the street. He left the building telling newsmen that CP&L had rejected union demands and "considered working men in North Carolina second class citizens."

Behind the choice of Brown and Root was a little known circumstance. United Engineers of Philadelphia, a firm with experience in designing and constructing nuclear plants, tentatively had been chosen to design and build Brunswick. But when it was learned they would operate a closed shop for construction, the switch was made to Brown and Root, a large Texas firm with no experience in nuclear but a wealth of experience in designing and building complex facilities for the oil and chemical industries. United Engineers was retained as architect-engineer.

Two other developments signaled the increasing complexity of licensing, building and operating nuclear plants. A new six-person technical services section was formed by the Company to include environmental, chemical, radiation control, radiological chemical and reactor

engineers under the leadership of Norman Bessac, a colorful navy veteran who had commanded a nuclear submarine. With the continuing need for specialists in these fields, the Company moved to lessen its dependence on consultants. Delays in getting regulatory approval for the Brunswick plant forced rescheduling of the two units from 1973 and 1974 to 1974 and 1976. Roxboro 3 was added as a replacement unit to supply additional generation needed in 1973.

Talton later said the Company was building plants as fast as it could, much faster than it had envisioned would be necessary.

MARKETING IS KEY TO SUCCESS

Marketing was a major contributor to CP&L's success during the 1960s. The more energy it could sell, the more new plants it could build. Each succeeding coal-burning plant was larger and more efficient than its predecessor. So all customers benefited from growth as the Company's prices trended downward.

The man who led the sales effort was Hugh G. Isley who had come to CP&L in 1919 as a "new business solicitor" and who would log 47 years of service before retiring in 1966. He was followed as general sales manager by W. J. Ridout who in turn was succeeded by W. P. McPherson. It was Isley who in the 1930s made the bold decision to get CP&L out of the appliance sales and service business, and begin establishing a network of strong dealer allies in every town where the Company operated. He had recognized that with CP&L selling 88 percent of the electric appliances its customers bought, local merchants couldn't be expected to stock electric appliances and compete with the power company. Rather, they offered ice boxes instead of refrigerators, coal and wood ranges instead of electric ones. The decision would serve Isley well.

Through 1969, CP&L developed annual marketing plans with emphases on major electric appliances such as washers, dryers, dishwashers, water heaters, frost free freezers and refrigerators. It held meetings around the system for appliance dealers and distributors to share with them about its marketing goals and promotional plans. The man in the forefront until his

retirement was Isley who with the zeal and style of an evangelist would exhort his guests to join him in another year of helping people live better electrically.

Similar efforts would evolve to encourage homebuilders to construct all-electric or "Medallion" homes, a concept which incorporated electric space heating and cooling. The Company promoted open houses for cooperating builders. By the mid-60s, more than half of the new homes being constructed on the CP&L system were all-electric.

Field support for the appliance marketing programs was provided by the Company's home economists, later titled electric living specialists. They conducted sales training programs for dealer personnel, demonstrated the use of appliances and encouraged dealers to coordinate their advertising with the Company's promotions. In addition, each district office staff included an appliance service representative who worked with dealers to train their service personnel.

Customer surveys were conducted periodically to track the saturation of different appliances, identify marketing opportunities and measure results. Later these surveys became a tool for forecasting demand. The 1960 survey showed the following appliance saturation percentages: electric ranges, 76.5; refrigerators, 97.3; freezers, 35; electric water heaters, 66; dishwashers, 5.4; automatic washing machines, 47.5; clothes dryers, 5; air conditioning, 18.4; and television, 79.

'Clothes Line Emancipator'

Flameless, clean and modern became key words in promoting the advantages of electric appliances and total electric living. With only five percent of customers owning electric dryers, one of the annual appliance promotions focused on "clothes line emancipation". A newspaper advertisement listed seven reasons for buying a dryer:

- i. "A dryer saves you work. The lifting and carrying of over two tons of wet clothes a year is eliminated.
- ii. "A dryer is kind to clothes. The tumbling action doesn't weaken fabrics or seams as whipping winds and ice do.
- iii. "A dryer lets you forget about the weather. All of the hanging problems connected with rain, sleet and snow are over for you.
- iv. "Dryer-dried clothes are cleaner. There is no street dirt or dust inside your dryer to soil your wash.
- v. "A dryer cuts down on ironing. Garments with crease-resistant finishes have fewer wrinkles than when drip-dried.
- vi. "A dryer doesn't fade clothes. The harsh, strong rays of sunlight quickly fade bright colors, as a dryer never would.

- vii. "A dryer finishes fabric better, softer, fluffier. Tumbling removes stiffness and harshness that goes with line drying."

Other sales messages focused on value. For example, "the average price of today's feature-packed electric dishwashers is 14 percent less than 10 years ago. And it takes less than a penny's worth of electricity to wash a load."

166 Electric Appliances Made Living Better

In 1963 a national television show, "The Price Is Right," gave away 166 electric home appliances, underscoring the great variety of ways that electricity helped make living better. Only 17 of the appliances had been available in 1930, and 110 of them had been developed during the 10 years prior to 1963. Among the more unusual appliances "were a cradle rocker, electric scissors, carving knife, and a face padder for removing wrinkles".

Howard Hicks, manager of residential sales, insisted that the annual promotions have a catchy slogan. Typical of the slogans were "Sell More in '64", "Total Electric: A Clean Break with the Past" which was graphically illustrated with a broken match, and "AcSELLerate in '68". The Coordinator, a monthly magazine which was published by CP&L for appliance dealers, introduced 1969 by declaring "your electric living specialist is now armed to help you with promotions that will let you 'Sell It Like It Is in 1969'."

In 1960 the Company offered a new service -- area lighting. For a modest monthly fee, CP&L would provide a pole, install a light fixture controlled by a photoelectric cell, and furnish the energy to operate it. The mercury vapor lamps would illuminate a large area, improving safety and protecting property. Within four months, 6,000 of the lamps were sold. In December 1968, the 50,000th area light on the system was installed. One pilot described the rural landscape as a "sea of lights".

By early 1961 the Company had its first all-electric subdivision, Windsor Park in Cheraw, South Carolina. Dick Lisk was the CP&L sales representative and Joe Helms was the developer. The project was planned for 80 homes. A similar development was underway at Boiling Springs, North Carolina. At the end of 1961, more than 3,600 homes and near 2,700 businesses and industries were being heated electrically, an increase of 53 percent in just one year. Three years later, the Company counted 13,000 electrically-heated homes and had added as many as 500 in one month.

The promotion of electric heating and Medallion homes received a major boost in 1962 when an all-electric residential rate was introduced. The monthly rate included a block of 450 kilowatt-hours priced at one cent per kwh. Chief obstacles which the Company had to overcome were consumer unfamiliarity with electric heating and concern about cost. Residential sales personnel found testimonials from satisfied users to be their most convincing sales tool.

Heat Pumps Slow to Gain Acceptance

Heat pump sales lagged in the early '60s. Manufacturers were overcoming difficulties with the early models. The people who were selling heat pumps discovered that air ducts had to be sized properly, else the results were not satisfactory. There was a shortage of well-trained servicemen.

But in 1967 W. B. McGowen, Wilmington district sales manager, reported that "from July 1960 to July 1967 we have progressed from less than 400 to a total of 4,713 residential heat pump users on the CP&L system.

"The experimental period of the heat pump is behind us. Customer acceptance has gained momentum to the point that about one-third of all electric heating jobs, new and conversion, in the Wilmington service area are heat pumps.

"Users are our best salesmen. They tell of the comfort, convenience, cleanliness, safety, low cost of maintenance, quietness and operating costs that are less than or right in line with competitive fuels."

Similar growth was occurring in the commercial sector. The commercial heating campaigns produced 2,000 kilowatts in 1959, 26,000 in 1965 and 36,000 in 1967. EEI recognized the 1967 "Space Age Heating" effort as the outstanding commercial heating campaign among all its members. It was a campaign which "blasted off", fueled by "economical heating rates, good sales presentations based on proven sales records, and hundreds of satisfied users."

All-Electric Schools and Buildings

Palmetto Plaza in Sumter, announced in February 1962, was CP&L's first all-electric shopping center. It included Colonial Stores and S. H. Kress as major tenants with a dozen other shops. The first unit of the new Hartsville High opened in 1962, making it CP&L's first all-electric school in South Carolina. Education officials from all parts of the state came to see it. Opening of the Pinkston Street elementary school in Henderson, N. C., in 1963 also attracted educators from a wide area. The architect who designed the 16-room Pinkston Street school said he specified all-electric for lower first cost, cleaner surroundings, greater safety and lower maintenance.

To reach the people who influenced decisions about heating and cooling systems for commercial buildings, the Company joined with Duke Power, South Carolina Electric and Gas, and Virginia Electric and Power to sponsor an "Architects and Professional Engineers Electric Space Conditioning Seminar". The first one was held in Asheville in 1964. Archie Futrell, CP&L heating and cooling engineer, said it assembled 200 top-flight architects and engineers, more than he had ever seen at one place in the Carolinas. The emphasis which the Company gave the two-day event was indicated by the presence of President Harris and Mrs. Harris to act as hosts.

More than 10,000 persons toured the new 11-story Wachovia Bank and Trust Company building when it opened in Raleigh in January 1965. The \$4 million structure was one

of the first to qualify for the All-Electric Building Award, and at the time was the largest commercial building in the CP&L area with electric heating and cooling.

In July 1966 Sutton made a trip to Wilmington for the dedication of the Cornelia Nixon Davis nursing home. With a capacity of 87, it was the largest facility of its kind on the CP&L system. Champion McDowell Davis, former chief executive of the Atlantic Coast Line Railroad and a close friend of Sutton, was described as the moving spirit behind construction of the facility. In presenting the All-Electric Building Award to Davis, Sutton noted that "in addition to featuring electric heating and cooling, the nursing home also has an all-electric kitchen and laundry...electric ice melting equipment at the front entrance ... and infra-red lights line the canopies" at the entrance.

Haywood county held open houses in the fall of 1966 at three new all-electric schools. The county's two high schools each had 51 classrooms, making them the largest all-electric schools served by CP&L. On the other side of the state, Northern Nash high school near Rocky Mount opened with 38 classrooms, becoming the 49th all-electric school on the company's system.

Bob Lively, an industrial power engineer in Raleigh, wrote a 1967 article for Spotlight which he captioned, "Industries Are Air Conditioning for Efficiency and Comfort". He reported on a study of a textile operation which showed "that when the mill is in full operation, heating is not required until outside temperature is minus 13 degrees F. The heat given off by lighting, motors and other sources is more than enough to fulfill the heating requirements of this

plant on the coldest day of the year. The plant must be cooled year-round to maintain a comfort level of 80 degrees F." He added that humidity control is "important to many production processes."

When the end of the decade came, CP&L residential customers had raised their average annual usage from 4,792 kilowatt-hours in 1959 to 9,027. They were using 38 percent more electricity than the average family nationally. There were 48,443 total electric homes and apartments. Half of the new home starts were all-electric. There were 10,056 all-electric commercial customers. For the 10 years, energy sales to residential customers were up 145 percent; to commercial customers up 191 percent, and to industrial customers up 249 percent. The Company's total energy sales had grown from 5.3 billion kilowatt-hours in 1959 to 16.7 billion annually.

ECONOMIC DEVELOPMENT OF THE AREA

The economy of the CP&L service area was highly dependent on agriculture. As farms became more automated, two things were happening: 1) more labor became available for

off-farm purposes, and 2) the opportunity for sale of electricity to drive labor-saving equipment expanded.

The Company responded with a two-pronged effort. It stepped up activities to attract new, more diversified industries to bring new and better jobs to its communities. It launched an agricultural development program that placed at least one agricultural engineer in each of its 14 districts.

One key to attracting industry was to help towns understand how to make themselves attractive. Having a nice piece of land was not enough. Access to air and highway transportation was essential. Communities had to be willing to provide water and sewer services. As Dan Stewart led the area development effort in the early 1960s, he found it difficult to convince local governments to commit financial resources to provide water and sewer to industrial sites.

The Company's first industrial development agent for South Carolina was employed in 1960. He was C. J. Turner who later would become the vice president of the southern division. He had been on the staff of Clemson University. His mission was to coordinate with state and local officials the Company's efforts to locate new industry.

To head the expanded agricultural development program, Stewart turned to W. J. Ridout Jr., publisher of Electricity on the Farm magazine who previously had worked with the Agricultural Extension Services in both Carolinas and with the Edison Electric Institute. By the

end of 1961, 14 agricultural engineers were on the job. Their mission was to help increase farm income and encourage greater use of electricity for farm mechanization. They called it "electromation". They worked with farmers individually and in groups. An important by-product was improved relationships in the agricultural community.

Poultry, cattle feeding, dairying, and grain handling operations became highly automated. "Parlors" for pig production became common. Barns for curing tobacco in bulk eliminated much of the hand labor required for the area's biggest cash crop.

Interest in farm mechanization mounted to the point that CP&L and other power suppliers joined with North Carolina State University to sponsor annual farm equipment shows. The first one in 1965 attracted 12,000 visitors. The focus was on materials handling.

In 1966 Justus "Jud" Ammons, then director of agricultural development, organized a one-day tour of five of the more highly automated farming operations. On the tour were CP&L executives Sutton, Harris and Robinson, North Carolina Commissioner of Agriculture James A. Graham; North Carolina State University officials Dr. H. Brookes James, dean of agriculture and life sciences, and Dr. F. J. Hassler, head of the agricultural engineering department.

The impact of mechanization was underscored as the group visited two cattle feeding operations which produced enough beef to feed 250,000 persons per year. They were told that only three workers were required for the farms. They also saw a poultry farm which

produced enough eggs daily to supply 75,000 people.

If there had been any doubt that farm mechanization was displacing labor, it was quickly erased. The necessity of creating other jobs for persons no longer needed on the farm was only too clear. As Sutton had said of the company on many occasions, "our future is the future of the area we serve."

Industry Attracted to CP&L Area

Fortunately, industry was beginning to look to the CP&L area with increasing favor. It was attracted by productive, non-union labor, a better than average tax picture, and by relatively cheap land. State governments were very aggressive in seeking to attract new industry. Community colleges and technical schools provided retraining for displaced workers who looked for other jobs.

Announcements for new or expanded industry in the CP&L area climbed steadily through the 1960s. By 1964 the Company reported that 54 of Fortune Magazine's "Big 500" companies had 108 plants on the CP&L system. By 1966 Wilmington was "fast becoming the chemical capital of the southeast." The city's industries included Dupont, Hercules, Corning Glass and General Electric's nuclear fuel fabrication plant.

In early 1965, Dan Stewart left CP&L to become director of the North Carolina Department of Conservation and Development. He had spent a career with the Company, and

as he neared retirement he viewed the post in state government as challenging and helpful. Willie York, a major developer in the Raleigh area, was chairman of the C&D board. It was he who approached Stewart. They had worked together in the early 1950s to bring Raleigh its first industry -- the Westinghouse meter plant.

James R. Hinkle, a former local manager for CP&L and more recently an industry hunter for the state, followed Stewart as manager of area development.

The Research Triangle Park, conceived by Governor Luther Hodges, began to have significant impact on the Raleigh area. Proximity to three major universities -- North Carolina State, UNC - Chapel Hill and Duke -- enabled the Park to compete successfully for high tech research and development facilities. When IBM came to the Triangle in 1965, it moved hundreds of families and provided jobs for thousands of others. It was a major breakthrough for the state.

At the end of 1969, 82 of Fortune's top 500 companies had 172 manufacturing plants on the CP&L system. During the decade new investments announced by industry had totaled \$2.13 billion, and an estimated 154,000 new jobs had been created. The percentage of CP&L's industrial revenue which came from textiles had dropped from 48 percent in 1959 to less than 42 percent .

The Company's success in agricultural development was recognized when it received Edison Electric Institute's 1967 award for outstanding work with its farm customers.

OPPOSING PUBLIC POWER

The dispute with REA cooperatives over territory and customers picked up steam. In 1960 a superior court decision allowed CP&L to serve Knob Hill, an area annexed by Rockingham that previously was served by the Pee Dee co-op. Legislation to give the co-ops "territorial integrity" was introduced and failed in North Carolina in 1961 and in South Carolina in 1962. The co-ops wanted to compel new customers within 500 feet of their lines to accept their service and they wanted to establish their right to continue serving areas annexed by municipalities.

In early 1961 CP&L began advertising in South Carolina. The Company's position, as stated in a later advertisement, was clear.

"In helping extend electricity to rural people, REA co-ops have served a worthy purpose. If these co-ops are going to keep on getting Federal loans at 2 percent and continue to be exempt from virtually all taxes, they ought to be confined to the job for which they were created ... that is, providing electric service to rural people who cannot be served by tax-paying companies.

"If the REA co-ops desire to serve urban, industrial and commercial customers who do not require subsidized electric service, the co-ops should be required to accept all of the obligations of a public utility company. These obligations are that they obtain their capital in the market at no burden to the government, pay taxes as other utilities do, and be subject to regulation by the Public Service Commission."

At the meeting of the National Rural Electric Cooperatives Association in March 1962, members were urged to "exercise missionary zeal" in their quest for state legislation to give them territorial integrity. The REA administrator, a government official, declared that to help you "in the battle for territorial protection, we have developed ... a Model Territorial Integrity Act which we hope will provide a focal point for the efforts of cooperatives in all states..."

Sutton responded in a speech to the 1962 meeting of the Edison Electric Institute. "Of the problems facing this industry in the foreseeable future none is more important, nor requires more careful attention and wisdom than the problem of expansion of government-owned and tax-subsidized power facilities....

"Many leaders in our industry believed in 1933 that the incidental power of TVA (Tennessee Valley Authority) posed no threat -- that those of us in adjacent areas were unduly alarmed. Nobody thought that within a single generation the total investment in TVA would approximate \$2 billion and that 82 percent of the total would be in power facilities. Few outside

the southeast believed that the TVA would absorb practically every electric utility in Tennessee."

He pointed out that between 1940 and 1960, the percentage of the nation's generating capacity owned by agencies of the federal government grew from eight to 17 percent.

Sutton warned that REA loans "illustrate the implementation of the avowed purpose of REA to make the co-ops self-sufficient, aggressive competitors with private enterprise." He cautioned that each year co-ops, with taxpayer dollars, are growing astonishingly, openly competing for urban and industrial distribution while retaining their two percent government loans and their tax-exempt status.

"We must recognize these movements frankly for what they are, and develop a positive program to expose and extinguish each fire lighted around the nation by the social planners before a general conflagration ensues."

Sutton in his letter to shareholders in the 1962 annual report wrote, "I urge you to exert your influence on your elected representatives to have them resist the waste of taxpayers' money on government power and correct the discriminatory tax legislation which exempts government-subsidized electric systems from taxation."

There was a further reference to REA and Clyde T. Ellis, general manager of the National Rural Electric Cooperative Association, in the Company's 1962 annual report. "Mr. Ellis also alleges that power companies 'operate cost-plus and are guaranteed a profit'. This is

comparable to saying that a man who buys a fishing license is guaranteed he will catch the limit. For a regulatory commission to say that a power company is entitled to a fair return on the fair value of its property in no way guarantees a profit.

"The continuing deviation of REA should be a matter of concern not only for stockholders, but all citizens who believe in American enterprise. In addition to having a direct financial interest in a company which is being encroached upon by subsidized, tax-exempt, unregulated competitors, you are one of the taxpayers who must help pay for the subsidies that REA co-ops no longer require."

Claims and Counter-claims

There were even more headlines in 1963. It started with a skirmish over whether CP&L had supplied adequate service to a rural customer in North Carolina. An REA co-op claimed it was serving the customer because CP&L had refused. There was a series of radio and newspaper advertisements and counter ads. In its ad, the company pictured the house and said:

"According to the electric co-ops, CP&L proposed to charge the owner of this house a price of \$3,400 to bring its facilities four-tenths of a mile to serve him.

"The fact is that for CP&L to serve the house would have required 1.2 miles of new line. The only 'price' quotation of which our Company has any record and which the owner

has documented was made in 1953. That was an estimate of \$1,080....

"REA co-ops also have said: 'Let the record show that this citizen is now getting the service he requested and so desperately needed from the EMC to which he later applied.'

"CP&L believes the record should show the TRUTH. The house is not occupied. The owner does not have and never has had the service which the co-ops said he is getting from EMC."

In another newspaper advertisement, CP&L defined the issue: REA co-ops want exclusive rural territories and the statutory right to serve in cities and towns ... a complete departure from the purpose for which they were created. "If CP&L could borrow capital for 2 percent as the REA co-ops do and enjoy the same tax exemptions they do, CP&L could reduce the price charged all its customers by 40 percent."

In South Carolina the 1963 General Assembly passed a bill providing for the sale of co-op properties inside municipalities with the consent of the local governing body.

South Carolina Project 'Unnecessary and Unwarranted'

The next battle was touched off by a July announcement from Washington that REA had approved a \$32.9 million loan to Central Electric Cooperative in South Carolina for construction of a power plant and transmission lines. Presidents Harris of CP&L, William B.

McGuire of Duke Power and S. C. McMeekin of South Carolina Electric and Gas issued a joint statement, saying their companies had offered wholesale power for the same price as the proposed project would supply it. They labeled the project "unnecessary and unwarranted."

In September CP&L fired another volley in South Carolina. It offered to buy seven co-ops in its service area. Duke Power and South Carolina Electric and Gas made similar offers to other co-ops in the state. Ellis responded from his Washington office by asking the Senate Anti-Trust committee to investigate CP&L. A South Carolina REA official called for an investigation to determine whether the utility companies were paying enough taxes. Harris said the retaliatory outbursts indicated the Company had hit a sensitive spot.

CP&L followed with a newspaper advertisement in South Carolina which outlined the benefits of its offer to buy the co-ops and merge their operations into a tax-paying, regulated company. Were it allowed to buy the co-ops, CP&L said it would result in \$840,000 of annual tax revenue, co-op members immediately would be paid their accumulated capital credits averaging \$110 each, and 80 percent of the co-op customers would get lower rates.

Governor Moore Calls for Resolution of Conflict

Legislators in both of the Carolinas were caught in the conflict. Onto the scene came Dan K. Moore, who in 1964 was elected governor of North Carolina. As he prepared for his administration, he summoned representatives of the co-ops and the electric companies to meet with him. He had spoken during his campaign about the need to resolve the dispute. Now he

asked them to sit around the conference table.

"It was a chaotic situation," Moore said. "There were law suits pending about who was to serve whom. I became an umpire. I wasn't trying to tell them what to do. I was only trying to keep them from fighting with each other. A settlement was in the best interest of the parties, but more significantly, it was in the best interest of this state and its future."

Key participants in the negotiations which took place during the last two weeks of 1964 were W. Reid Thompson, vice president and general counsel for CP&L; William Crisp, attorney for the co-ops, and Joseph Branch. Branch had managed the Moore gubernatorial campaign. He would later become chief justice of the North Carolina Supreme Court.

Moore subsequently observed that "both sides sincerely wanted to reach an agreement. There was a feeling on both sides that something had to be done."

Out of the negotiations came a "Statement of Principle Agreed upon between Rural Electric Cooperatives and Power Companies". It was signed January 6, 1965 and enacted by the General Assembly on April 20.

Rep. David Britt, a member of the public utilities committee who later became speaker of the House and a justice of the State Supreme Court, recalled that announcement of the agreement came shortly after the General Assembly convened. He said it was welcome news for legislators who had been dreading the fight between co-ops and companies. Municipalities which

operated electric distribution systems were quick to complain that they had not been party to the negotiations and they wanted changes. In spite of their objection, the bill was adopted in essentially the form which had been agreed upon.

The new law had four major points. First, it provided that an electric supplier had the right to serve new customers within 300 feet of its existing lines. If two suppliers were within 300 feet of a new customer, the customer could choose the supplier. Second, it provided that all territory lying more than 300 feet from existing lines would be subject to allocation by the State Utilities Commission. Third, it prohibited co-ops from competing for municipal franchises in cities and towns served predominantly by a power company. Fourth, it required that co-ops pay all state and local taxes applicable to power companies except the state income tax. Further, the law specified that all future generating plants would be subject to certification of convenience and necessity by the Commission, and it prohibited the co-ops from discriminating as to rates and service.

Territorial Assignment

Implementation of the territorial assignment was a major undertaking. Tom Byrum, a veteran engineer, was picked to head the project for CP&L. He worked closely with Paul Lyman, industrial sales manager, and Sherwood H. Smith Jr. of the legal department. The task required six years. Lyman was personally acquainted with the co-op managers because he handled the contracts for energy sales to them.

Byrum said the starting point was to put on county maps the location of all Company lines at January 1, 1965. Division engineers had that responsibility. Then came lengthy sessions with local managers to identify areas the Company would like to serve and those which could be given up. Area development personnel, large property owners and CP&L directors also were consulted.

Maps were exchanged with the co-ops to assure agreement as to the location of lines before maps were submitted to the State Utilities Commission. The Commission was responsible for approving territorial assignments. After the mapping was completed, territorial negotiations with individual co-ops began.

Byrum remembered the negotiating sessions as largely enjoyable and pleasant. "We tried to agree on natural boundaries such as roads, streams, railroad tracks and transmission lines. Where customers had strong preferences, we tried to accommodate their wishes, too."

There were lighter moments as well. Byrum recalled discussions with the Randolph co-op about a location near Pittsboro where CP&L and the co-op claimed to serve a customer. "Turned out," Byrum laughed, "that both of us had lines to the point. But neither of us had a customer. They were serving an oak tree and the nearest thing to our delivery point was a pine." The prospective customer had never built. In another case, a co-op wanted to keep an area because it was owned by the chairman of its board. "We agreed," Byrum noted, "but we told them that one of our directors had large land holdings in the county and we would expect to serve

that."

A short time later, South Carolina adopted similar legislation. Phil Ross, a veteran CP&L engineer who was based in Florence, led the implementation project for the Company. Thus a conflict over customers and territory which had flared intermittently since the early days of REA was finally resolved.

Electric Power in Carolina (EPIC)

The government power issue surfaced again in 1969 when North Carolina Electricities and REA cooperatives announced plans to build generating plants to supply their power needs. CP&L's annual sales in 1968 to these customers were \$18.6 million or 11 percent of total revenues. The plan was named Electric Power in Carolina (EPIC). It called for investment of \$1.75 billion in four generating complexes and related transmission by 1980. The money was to be raised by sale of tax-free revenue bonds by the cities and from REA or market loans by the cooperatives.

Harris promptly held a news conference where he labeled EPIC a "fantasy" and declared "the only way EPIC would deliver power at a savings to the municipalities and cooperatives would be by evading the real cost of capital and the taxes that investor-owned companies must pay." He denounced the unnecessary creation of further tax inequities when electric companies in the state are providing an adequate source of power for these customers and are expanding their systems to meet future needs.

The plan required the approval of regulatory agencies and endorsement by a sufficient number of the electricities and co-ops to make it feasible. The goal was to begin construction in 1972 and have the initial plant operating by 1975. Reaction to EPIC was skeptical.

The Clinton Sampsonian cautioned: "To build a second large electric distribution system across North Carolina would seem to be wasteful and not in the best interest of the people served by the electricities and those served by private firms."

The High Point Enterprise advised: "The electric generating business is no place for ill-financed amateurs spending public funds, for modern living is too dependent upon a strong and dependable source of power to allow any short circuiting of that supply."

And the Newton Observer-Enterprise suggested residents of cities and communities which become part of EPIC "lay in a good supply of candles, and switch to gas for heating and cooking. Times ahead could be very lean indeed."

CP&L: PEOPLE SERVING PEOPLE

Mention CP&L and the image more likely to come to a customer's mind was of a

lineman. Measure public attitudes and they always were most favorable just after a major storm or other disaster. Say you worked for CP&L, said one newcomer, and the doors of the community opened to you. Employees had a high degree of loyalty, turnover was low, and other people considered them fortunate to work for a good company. Decisions were made by a few managers at the top. That did not seem to bother other employees, many of whom had fought in one of the two world wars.

This was a company made up of people serving people, a company known as frugal. Its offices were inauspicious. It used an outdoor design for its steam electric generating plants to hold costs down. It operated its system with a minimum of manpower. It had a reputation for being dependable and well-managed.

On all stationery, communications and signs the identification was "Carolina Power and Light Company". Either of two taglines usually appeared with the corporate logo: "Helping to build a finer Carolina" or "An investor-owned, taxpaying public utility company". Later, the tagline "people serving people" appeared. Company vehicles were two-tone, a brown and dull red which was referred to as "blood and mud".

First Bucket Truck Purchased

The life of linemen changed dramatically in 1961 when the Company bought its first bucket truck. It was a 1961 Baker B-10. W. F. West was a member of a Raleigh line crew which used one of the first Pittman Polecats. Later he became a line foreman and subsequently

the Company's safety director. He said the new vehicles had augers to drill holes, eliminating need for the old spades and spoons and the hand labor which went with them. Poles could be lifted into position mechanically. The buckets took away a lot of pole climbing. Working from the buckets made it possible to handle higher voltages without service interruptions. Line crews for the big trucks shrank from five men to three. But, West recalled, the system was growing so rapidly that enough new line crews were created to absorb all the men.

Ed Geddie remembered that the Company's philosophy was to maintain only enough line crews that they would be fully occupied when work was slowest. Contractors were used for excess work, notably for constructing rural lines.

Bobby Morrison, then a lineman, was said to have taken to the new hydraulic equipment like a duck to water. Geddie who was superintendent of transmission and distribution gave Morrison the assignment of training others to use the mechanized trucks.

Joe F. Gainey and his line crew at Clinton took a major step in 1961 when they changed a pole supporting a 12 kv line and air break switch without interrupting service. Until that time, such a repair caused interruptions lasting several hours. The practice spread across the system.

On July 1 an employee stock purchase-savings plan became effective. Employees could invest up to 4.5 percent of base pay and the Company would contribute \$1 for each \$3 invested by the employee. About 80 percent of eligible employees took advantage of this

opportunity to become one of the owners of their Company.

Annual Revenues Reach \$100 Million

In 1963 chests were puffed with pride as annual revenues rose above \$100 million.

It was a milestone which in the eyes of many put CP&L into the bigtime of corporate America. A decision also was made to use computers for customer accounting and billing. That caused uneasiness among employees who feared their jobs might be eliminated.

Three years later, the electronic data processing system (EDP) reached full operation with two printers producing four bills simultaneously at the rate of 600 lines per minute. The bills were automatically inserted into envelopes. James Cooke, director of the EDP system, emphasized to his workers that "the care and feeding of a computer can be done only by humans. The continued success of this application will be completely dependent on the degree of accuracy maintained by all employees responsible for the transactions being fed through the system."

In 1964 Sanford, one of the three communities served by CP&L when it was formed in 1908, renewed the Company's franchise to serve the city. F. C. Lennon was the local manager who negotiated the renewal. Among his peers, he became known as the designated franchise-renewal manager because of the number of locations in which he faced that assignment. His next move was to Wilmington. 1964 also saw the Company's common stock split two-for-one.

A decrease in the federal income tax aided CP&L in making a 1965 rate reduction of \$1.25 million, giving it a record of reducing rates in 26 of the last 32 years.

Electricity finally reached the Doe Branch community of Madison county in 1966.

Lines were strung across the rough mountain terrain to reach people who talked excitedly about getting television sets and electric irons as they made the switch from kerosene lamps. Governor Dan Moore spoke at the dedication of Roxboro I. It was the last plant dedication for which the Company issued a public invitation for all residents of the surrounding community to be its guests for the ceremony and lunch.

In late January a blanket of ice 60 miles wide spread from Florence to Kinston, crippling the system and involving 1,200 men in the repair. The Laurinburg Daily News editorialized: "The entire community owes a big vote of thanks to the workmen who handled the emergency so splendidly. Laboring under the worst handicaps imaginable, these men did everything humanly possible to repair utility lines and clean up debris and our hat is off to every one of them."

The next three winters also brought ice storms that did heavy damage to parts of the system. After each one there was the predictable praise of workers from customers, grateful to have their electricity flowing again.

In 1967 the citizens of Elm City voted to lease their municipal system to CP&L.

Edison Electric Institute sponsored interviews with hundreds of persons to look at the role of electricity in 2000. Edwin Vennard, EEI executive, reported one of the results. "Portable computer terminals -- small devices through which information can be entered and

received -- will be commonplace. The doctor will carry one in place of his traditional black bag. The salesman will have one in his sample case and have current knowledge of inventories. The student may have one for homework."

October marked the end of Riley Fisher's 40-year association with the Marshall hydro plant. When Fisher went to Marshall in 1927, there was a staff of seven. Over the years men were replaced by machinery, until in 1964 it became Fisher's one-man operation.

If ever there was a year that brought shocking change, 1968 was it. There were the assassinations of Robert Kennedy and Martin Luther King. Demonstrations against the Vietnam war frequently turned into violence. Emotionalism surrounding the environmental movement mounted. At every turn, the establishment faced questions about traditional beliefs and values. Activism on college campuses was at a peak. Mini-skirts were the fashion. Electric utilities along the east coast which had always had power to spare suddenly found themselves in a long, hot summer which literally drained their generating reserves.

Losing the Battle with Inflation

Inflation was taking its toll. In the annual report to shareholders, President Harris said, "Through the years we have adopted new technology, installed larger generating plants and effected every other reasonable economy in a continuing battle to offset inflationary pressures. We are dedicated to continuing this effort. However, the accumulated and continuing pressures of inflation are having substantial impact on the cost of materials, supplies and almost everything

else essential to provide electric service, including the cost of investment capital. Our construction program will require large amounts of new capital in the years immediately ahead. We are making a continuing study to determine our revenue needs and will take whatever action is necessary to prevent erosion (of earnings) from inflationary pressures."

The price of coal hit bottom during the 1960s. The delivered price per ton was about \$8, roughly half for coal and half for transportation. Beginning in 1964, the part of the customer dollar needed to pay for fuel began to creep steadily upward -- from 19.2 cents to 26 cents in 1969. During the same five years, the Company's fuel requirements rose from three million tons of coal annually to six million.

The cost of vehicles, poles, transformers and other materials was going up. Of the company's major generating facilities, Roxboro 1 and 2 represented the lowest investment per kilowatt of capacity. Interest rates on long-term bonds were approaching 7 percent.

Ironically, the average price paid by residential customers for a kilowatt-hour of electricity reached its lowest point in 1969 and 1970 -- 1.64 cents. While the Company prepared to file its first general rate increase, it also sought through its communications to make customers aware of the bargain which electric service was.

The hour of reckoning was at hand. Harris expressed it succinctly: The ravages of inflation are outrunning the efficiencies produced by our ingenuity.

And in 1969, with the retirement of Sutton, Oley Baugh who had been chauffeur for the Company's chief executives since 1928 retired to his farm at Apex to grow hogs. He estimated he had driven a million miles. His passengers included persons prominent in business and government. Perhaps the best known was General Dwight Eisenhower whom he described as a close friend of Sutton. Baugh fondly remembered that the General always called him by his first name.

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 licensor 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 moviegoers 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.

COPING WITH PERIL

The 1980s were hard years, a period of scaling back earlier construction plans, of struggling to modify and backfit the Brunswick plant to meet new regulations and make it more reliable, of fending off opponents of the Harris plant to get it into operation, and of striving to protect the Company financially. There was new emphasis on conservation and load management, a winding down of construction activity, rise of a motto at the Roxboro plant that "we carry the load," introduction of total quality, and corporate down-sizing. The need for national energy policy persisted. Two things kept the Company in the headlines: its nuclear plants and its rate cases.

At the beginning of the decade, the fourth unit of the Roxboro plant was nearing completion. The four units of the Harris plant and two coal-burning units at Mayo remained in the construction plan. Growth in peak demand over the next 10 years was projected to average 4.5 percent. Expected construction expenditures for the first three years totaled \$2.4 billion.

Sherwood Smith was uneasy. He questioned whether the Company could afford financially to build the four units of the Harris plant, even though major components such as the reactor

vessels and steam generators had been purchased and already were at the site. Inflation was in double digits. The prime lending rate reached 21.5 percent. Regulation was instable, making it impossible to project either the eventual cost or the operating date for a nuclear facility. Years later, Smith described the early 1980s as the most perilous time CP&L had faced since the depression.

The nuclear option, promoted by the federal government during the '60s and into the '70s and made attractive by its promised low fuel cost, had become a burden of unpredictable proportions for utilities like CP&L which in good faith had tried to respond to the "national interest" by utilizing a new technology that would advance energy independence.

Now the question was whether and how to back away from construction commitments in which millions of dollars had been invested, and preserve the Company's financial viability. Smith was confident every decision CP&L had made with respect to its construction program was a conscientious effort to supply energy to meet, in the most economical and environmentally acceptable way, what it and its regulators believed customers' future needs would be. In the ensuing years, the Company would be called on to demonstrate the reasonableness of its decisions.

There were other wrenching developments. One was the necessity to keep selling new issues of common stock at prices below book value in order to continue construction. Each new sale diluted the equity of earlier shareholders. Smith saw his task as preparing the Company for a "soft landing".

One of his first concerns was to convince others of his management team that he was leading in the right direction. He retained a management consulting firm to help with a study of the Company's situation and its alternatives. The investigation identified the possibility of reducing anticipated peak demand by 1,750 megawatts by 1995 through load management and conservation strategies. That was the approximate capacity of two units of the Harris plant.

Smith appointed a steering committee for a Company conservation and load management program. Ridout, the senior vice president for customer and operating services, was chairman. Its mission was to develop specific strategies for implementation. All of the activity eventually would lead to creation of a conservation and load management (CLM) department. On the committee with Ridout were Norris Edge of rates and service practices, Bobby Montague of system planning and coordination, Earl Stephenson from customer services operations support, and Albert Morris of corporate communications.

Seeking Adequate Rates

Hearings on the request for a 9.25 percent general rate increase were held in January. It was CP&L's sixth general rate case since 1970. Smith testified that a clear indication of the inadequacy of the Company's earnings was that its common stock had been selling at 75 percent or less of book value in recent months. He warned that if CP&L were not allowed to earn enough revenues

to cover its operating expenses and provide a reasonable return to shareholders, customers inevitably would suffer from inadequate service and "the whole area would suffer from our inability to provide power to new and existing businesses and industry."

The CP&L area had just experienced its best year for industrial growth. Capital investments totaling \$808 million had been announced during 1979, creating an estimated 18,790 new jobs with annual payroll of \$196 million.

Smith noted in his testimony that the Company's last rate increase had become effective in July 1977 and that the consumer price index had risen 25 percent since then. "Our objective in this case," he testified, "is to seek the smallest increase which can sustain us in this economic period that is so troublesome to our customers."

The North Carolina Utilities Commission allowed an increase of 7.13 percent effective April 1, noting that it was well within federal wage and price guidelines which had been imposed to curb inflation. Graham reacted to media inquiries, saying the Company was disappointed. "Unfortunately, financial conditions have changed so much since the end of 1978, the test year on which this decision was based, that we shall have to ask for a further rate increase very soon."

In September the Commission was holding hearings again. This time the requested increase was 13.9 percent. Smith testified that 40 percent of the increase was to get \$205 million of

the investment in Roxboro 4 into rate base. The unit began commercial operation on September 15. The other major factor was inflation.

Smith said the combined effect of the earlier increase and the one under consideration would mean that between July 1977 and late 1980 CP&L rates would have increased about 22 percent while the consumer price index had risen 36 percent. The Commission allowed a 10.78 percent increase, effective December 11. In dollars, the two decisions in North Carolina awarded CP&L \$32.1 million less than it had sought in the jurisdiction where it had 63 percent of its sales. Of the Company's sales, 15 percent were in the jurisdiction of the S. C. Public Service Commission and 22 percent were under the Federal Energy Regulatory Commission.

Roxboro 3 and 4, both rated at 720,000 kilowatts, had dual boilers. This feature allowed the units to operate at partial capacity when only one of the boilers was available for service. With 2,477 megawatts of capacity, Roxboro easily was the largest generating station on the system. Its units 1 and 2, completed in 1966 and 1968 respectively, represented an investment of \$84 per kilowatt. Unit 3 was finished in 1973 at a cost of \$166 per kilowatt while the investment in unit 4 when it was finished in 1980 was \$314 per kilowatt. Roxboro presented a clear picture of how construction expenses had risen.

Shearon Harris Memorialized

In March, North Carolina Citizens for Business and Industry honored Harris with its citation for distinguished citizenship. A former president of the organization, he was unable to attend the presentation. Mrs. Harris accepted in his behalf. In late August he died. A memorial service was held at Raleigh's Hayes Barton Baptist church where he had been chairman of the deacons and a Sunday School teacher. He had been a prominent Baptist layman, a trustee of Wake Forest University and chairman of the trustees of Meredith College. He chaired one of Meredith's major funding campaigns.

Friends recalled a commencement address at Wake Forest University where he urged graduates "to exercise your trusteeship of citizenship in order to protect your basic rights to life, liberty and property -- for yourselves and those who come after you...."

In a resolution of appreciation for his leadership of CP&L, directors of the Company noted that he championed the cause of individual responsibility and freedom. Further, they said as "chairman of the Chamber of Commerce of the United States he campaigned vigorously for fiscal responsibility in government as a first step toward controlling inflation as the greatest present threat to the national welfare."

North Carolina Magazine commented: "Perhaps the qualities of Shearon Harris which most endeared him to so many people, both prominent and obscure, were those of simple decency and moral steadfastness. He was essentially an honorable man. He was honorable not so much for the

prestigious offices he held or for his national stature as for the fact that he carried and lived a code of principles from which he never deviated. One could not imagine the man practicing hypocrisy, intellectual dishonesty or deceit."

The memorial service was attended by heads of major national corporations and organizations. Governor James B. Hunt, Jr. and Senator Jesse Helms entered together and sang from the same hymnal. Later, they would face one another in a bitter campaign for the U. S. senatorial seat.

On Harris' recommendation, CP&L directors in May had given Smith the additional responsibilities of chairman, making him president, chairman and chief executive officer.

Menscer Goes to Public Service Indiana as President

Also in May, Darrell Menscer resigned his position as senior vice president for power supply to become president and chief operating officer of Public Service Indiana, a utility which was struggling to complete its first nuclear plant and license it for operation. Menscer's varied experience at CP&L fitted him well for the task. Smith termed Menscer's election a compliment to him personally and to CP&L. Subsequently, confronted with many of the same obstacles which faced CP&L, Public Service gave up on the nuclear option and discontinued construction of its Marble Hill facility.

Menscer's departure opened the door for the promotion of Lynn W. Eury to group executive for power supply. He had been vice president for system planning and coordination, a position in which he was replaced by Bobby L. Montague who had been director of project analysis at the Harris plant. The simultaneous announcement of Menscer's departure and the promotions of Eury and Montague reflected the effectiveness of planning by senior management to identify and train potential successors for management positions. The practice had been initiated in the early 1970s.

Later in the year, Eury and James M. Davis, Jr., group executive for fuel and materials management, were elected senior vice presidents. Seven others were elected vice presidents: Charles D. Barham, Jr., senior counsel and head of the legal department; Paul S. Bradshaw, controller and chief accounting officer; Norris L. Edge, manager of the rates and service practices department; Jack B. McGirt, head of the fossil operations department since its formation in 1979; R. A. Watson, manager of the fuel department; E. Charles Dyson, western division general manager; and Russell H. Lee, eastern division general manager.

An April sale of \$125 million of first mortgage bonds was the most expensive the Company had ever sold. The seven-year bonds carried an interest rate of 14.125 percent.

Hover System Used to Move Dome of Harris Plant

Still striving to make up time in construction of the Harris plant, CP&L and its contractors used an innovative technique to fabricate and place the 320-ton steel dome for the containment. The dome was fabricated on the ground, moved 715 feet on a cushion of air called a hover system, and finally lifted into place with a giant crane. It was the first time the hover system, frequently used in the construction of oil storage tanks, had been used to move the dome of a nuclear power plant. The press was invited to watch the event, scheduled to occur shortly after dawn on a summer day. The steel fabrication contractor, Chicago Bridge and Iron, had draped a huge banner across the dome emblazoned with the letters "CBI".

After several tries, the dome clearly was not going to lift until a balance problem was corrected. But as reporters watched the dome rise slightly only to settle back to the ground, one asked loudly what "CBI" stood for. Another reporter fired back, "Can't budge an inch."

The need to reduce capital expenditures was one factor in a decision at mid-year to delay the first Harris unit until 1985 and Mayo 1 to 1983. With other changes in the schedule, the move trimmed \$300 million from the 1980-82 construction budget. The new forecast indicated growth in peak would be only four percent over the next 10 years. Clearly, the practice in forecasting growth was to be as conservative as one reasonably could be. Economic conditions, customer attitudes and regulatory restraints made it unattractive for the Company to undertake any construction that was not absolutely essential.

In June, the Company launched a pilot energy management project in the Raleigh area. Its goal was to get 15,000 customers to participate in a water heater control program. Customers were offered a discount of \$12 per year to allow the Company to use radio-activated controls to defer operation of the water heaters to off-peak periods when more economical generating units would provide the energy. Later, the discount was increased to \$24 annually.

On a cold winter Saturday, a group of Raleigh area employees met at the Harris plant site to cut wood for delivery to an agency which would distribute it to less fortunate families. It was the beginning of a volunteer activity which quickly spread to other areas, and grew to yield as much as 600 cords annually. All of the wood was cut from Company lands.

The NRC levied an \$89,000 fine for improper handling of radioactively contaminated materials at the Brunswick plant. Some items such as discarded cleaning rags and clothing from the plant, described as low level waste, had been discovered in the Brunswick landfill. While they represented no threat to public health and safety, the radioactivity should not have gone undetected as the waste left the plant premises. Low level waste should have been packaged and sent to a licensed facility for burial. By levying larger civil penalties, it was said the agency sought to get the attention of top management. Unfortunately, the fines also undermined public confidence. The fine was just one indicator of the problems which would plague the Brunswick plant.

1981: Power Agency Buys Interest in Generating Plants

For those who had lived through the years of fierce competition with government power, the idea of selling generating capacity to cities or cooperatives may have sounded like heresy.

But times had changed. A group which called itself North Carolina Municipal Power Agency Number 3, made up of 22 cities which bought power wholesale from CP&L, had been negotiating over a period of nearly three years to acquire an interest in the Company's generating plants. During the negotiations, they were joined by Power Agency Number 2, a group of 14 cities for which Virginia Electric and Power was the supplier.

The sale could be beneficial to both parties. Cities could raise money at less cost than CP&L by issuing tax-free electric revenue bonds. An infusion of capital from the sale of capacity would enable CP&L to avoid some of the costly outside financing required for its construction program, including the issuance of more common stock at below book prices. Owning capacity would enable the cities to obtain their power at lower cost.

When a preliminary agreement was reached, it called for sale of interests ranging from 13 to 18 percent of Brunswick 1 and 2, Roxboro 4, Mayo 1 and 2, and the Harris units. It was

estimated the sale would yield about \$700 million from closings in 1982 and 1983, and an additional \$350 million through 1991. For the period 1981-83, it reduced the capital the Company would have had to raise in external markets from \$1.2 billion to \$411 million. The receipts came when capital costs were highest.

CP&L would continue to staff and operate the generating plants, transmit power to the Power Agency's participating members, and provide fuel management services. The Power Agency would have a site representative at each of the plants. Local governing boards of the cities had to approve participation in the sales agreement.

Wilson Morgan was the senior CP&L manager involved in the negotiations. Raymond Talton was chief negotiator for the Company, and he led a team which included Carson Carmichael of energy services, Samantha Flynn of the legal department, Don Weisenborn from system planning, Walter Simpson from treasury, Wayne Lewis and Jerry Kirk from system operations, and Tyler Presson from rates and service practices.

The agreement was signed on July 30. Federal and state regulators gave their approval in November. Thirty-two of the cities chose to participate in what became the North Carolina Eastern Municipal Power Agency. The cities were Apex, Ayden, Belhaven, Benson, Clayton, Edenton, Elizabeth City, Farmville, Fremont, Greenville, Hamilton, Hertford, Hobgood, Hookerton, Kinston, LaGrange, Laurinburg, Louisburg, Lumberton, New Bern, Pikeville, Red Springs, Robersonville,

Rocky Mount, Scotland Neck, Selma, Smithfield, Southport, Tarboro, Wake Forest, Washington and Wilson.

Carmichael became manager of joint project services, the position which was CP&L's interface with the Power Agency. He praised Talton's skills and his ability to lead through countless hard-nosed negotiating sessions.

Smith had said earlier that three factors were vitally important to the Company's financial viability: allowance of CWIP in the rate base, sale of capacity to the Power Agency, and timely rate increases that fully covered the Company's expenses. The first two of these had been achieved.

New Conservation and Load Management Program Announced

While the sale of capacity was being negotiated, the Company's energy management activities picked up speed with announcement of a major new conservation and load management program.

"We are redoubling our efforts to slow the growth in peak demand because of the tremendous cost of new power plants," Smith declared. "Finding ways to make more efficient use of every kilowatt of capacity is to the advantage of us and our customers."

He said the new program would include low-interest customer loans up to \$600 for home insulation, automated control of water heaters and air conditioners, time of use rates, co-generation by industrial customers, and promotion of renewable energy resources.

It was expected that the new programs would combine with those already underway to reduce peak demand by 1,750 megawatts from what it otherwise would be in 1995. By far the bigger block of demand reduction was expected to come from the industrial sector.

The conservation and load management department was established effective March 1, 1982, to commit the resources that were considered essential to conduct an expanded and successful CLM program. John Monroe, Wilmington district manager and formerly administrative assistant to Shearon Harris, was called on to lead the department. He would remember it as one of the more difficult assignments he ever had. "There was cultural resistance, particularly in the field," he recalled. It was a dramatic change for many. Part of the difficulty stemmed from the staffing of a new corporate department without an accompanying increase in field personnel to implement its programs. Nevertheless, through the end of the '80s, progress toward the goal remained on schedule as 1.1 million kilowatts of system load was avoided by energy management.

In May the directors elected Jones vice chairman and Graham and Lilly executive vice presidents. At the same time the customer and operating services group headed by Ridout was

assigned to Graham who already had responsibility for the communications, legal, regulatory and public affairs functions. Grouping these functions was expected to produce a more cohesive effort to gain customer understanding and public support which the Company sorely needed. Two new vice presidents were elected: Bobby L. Montague for system planning and coordination, and E. S. Noell for transmission and communication planning, engineering and coordination.

Later, Mendall Long was elected vice president for special projects. For 35 years he had been a key player in expanding the generating system. Jones had great respect for his abilities, and assigned him to consult with fossil and nuclear plant managements to help improve plant performance.

Smith Calls for National Waste Management Policy

In Washington, Smith focused on the need for federal legislation to establish a consistent and stable policy of nuclear waste management. He was chairman of the American Nuclear Energy Council and of the EEI policy committee on governmental affairs. In testimony before a House committee, he reminded that only the federal government had the ability to assure away-from-reactor jurisdiction. He pointed out that the public had lost confidence in the ability of government to meet its responsibility for waste management. Policy changes and agency reorganizations had come with every change of administration.

"If the federal government fails to act and should the lights go out in the Carolinas, we

and the people who we serve will remember that the problem and the failure of its resolution both were caused by actions and inactions of federal government," he warned. But movement on Capitol Hill came slowly and CP&L customers continued to pay for legislative inaction.

Several months later, Smith led a group of industry leaders who met with President Reagan at the White House to discuss nuclear problems. He had been pleased with the President's earlier statement on nuclear power.

The President had called on the NRC to improve the regulatory and licensing process to shorten the time required for planning, licensing and constructing nuclear facilities to only six to eight years as was typical in other countries. In the United States, the process had stretched to 10 to 14 years. The President had said he was asking government agencies to proceed with demonstration of the breeder reactor technology; he was lifting the ban on commercial reprocessing activities; and he was instructing the Secretary of Energy to proceed swiftly to provide for storing and disposing of commercial high-level radioactive waste.

It was late 1982 before Congress passed legislation to establish a comprehensive national program for the storage and disposal of nuclear waste, renewing hope that the nuclear fuel cycle would be closed. In spite of the President's position, there was little other progress toward making nuclear power plants a viable option.

Emergency Plans for Nuclear Plants

Out of the TMI experience had come an NRC requirement that emergency plans be developed for all nuclear plants. For CP&L the plans were joint undertakings with the emergency preparedness functions of state and county governments. The plans had to provide for evacuation of residents within a 10-mile radius of the plant. Effective communication was a major emphasis. Further, the plans had to be tested periodically and evaluated to assure that they were workable.

Mac Harris who was CP&L's manager of news services recalled that prior to TMI, each plant had an emergency plan, but coordination with local, state and federal officials was not clearly defined. He remembered that within weeks after the TMI accident, North Carolina Governor Jim Hunt arranged to visit a nuclear plant to evaluate the response capabilities of the Company and state and local officials. The Governor chose Brunswick, and he traveled on a state-owned helicopter to be briefed on a mock-accident scenario.

The briefing was held in the small auditorium of the Brunswick plant visitors center. News reporters were present. In preparing for the briefing, one of the Company's participants noticed that no space had been reserved for the Governor and his party. Fearful that the auditorium would fill and there would be no room for state officials, a frantic search was begun to find some type of ribbon or tape to mark off two rows of chairs as a "VIP" area.

The only material found was a yellow plastic marking tape with black symbols. It was used to designate the VIP area. Minutes later, as the Governor and his party were taking their reserved seats, a plant official noted that the tape so conveniently found was the tape used to designate radioactively contaminated areas.

The tape, of course, was clean and new, and no one in the audience knew its significance. But the CP&L news team lost no time removing it as the Governor left the auditorium.

A short time later, a larger exercise was conducted at Brunswick. The first test of the emergency plan for the Robinson plant came in March 1981. Both NRC and the Federal Emergency Management Agency (FEMA) observed and critiqued the emergency drills.

As a consequence of developing and practicing emergency plans to support nuclear plants, local communities found themselves better prepared to respond to other types of emergencies such as major accidents and storms.

Brunswick Problems Lead to Independent Audit

In a summer when power supplies in the region already were tight, the news from Brunswick was bad. Valve failures first reduced the output of Brunswick 2 and then forced it out of service. Brunswick 1 was being returned to service following an outage for major modifications and

maintenance when bearings in the turbine-generator were damaged. It was mid-July. The Company appealed to customers to curb usage. Voltage was reduced. Replacement energy was more expensive because it came from burning oil or coal. Consumers were warned that bills would be higher. Predictably, there was a public reaction that spurred regulators and the Public Staff.

The North Carolina Utilities Commission called for an explanation of what was happening at Brunswick. Graham and Eury responded. Graham acknowledged that Brunswick had not performed as expected since 1978, and that there would be major outages over the next three years for NRC-mandated modifications and for improvements initiated by the Company. Addressing the more immediate problem, Eury said bearings in the turbine generator, a non-nuclear part of Brunswick 1, had been damaged.

Citing the problems at Brunswick, the Commission ordered its second independent management audit of CP&L, specifying that it should focus on plant performance and power production at all of the Company's facilities.

Double Digit Inflation for Three Years

It was an unusual period. For three consecutive years, the rate of inflation had been in double digits, peaking at 13.5 percent in 1980. CP&L was playing a bigger game of catch up. Its prices were based on an historic test period. Even when it got an increase the new price was out of

date. Continued rapid inflation necessitated frequent price adjustments.

The Company launched a plan to encourage stock ownership by its customers. Lilly saw this as an opportunity to attract needed capital and to provide an opportunity for more people in the service area to learn about the financial situation of their utility.

In October the North Carolina Utilities Commission held hearings for another general rate case. This time the Company asked for 16.4 percent. It would be the third price increase of the 1980s. Smith testified: "While our rates have increased in the past year, we have never been able to earn consistently the return on stockholder's money which the Commission has found to be fair.... As a result of this continuing under-recovery of the cost of capital and other costs of service, CP&L shareholders have in effect been subsidizing customers for the past several years and have been absorbing a significant share of every cost increase."

Earlier, the director of the Public Staff, Dr. Robert Fischbach, charged the Company with attempting to create a stacked deck by swamping the Commission with requests for higher rates. He declared the Company was "totally insensitive" to its customers.

In December the Commission authorized a 13.09 percent increase, penalizing the Company for poor performance of the Brunswick plant. The return on common equity which it allowed was at the lower end of the reasonable range.

Continuing problems at Brunswick had two adverse side effects. Morale of plant employees suffered. In the customer and operating services group, the continuing volley of complaints from customers caused the frequent exclamation, "If they would just do something at Brunswick..."

Fossil plants kept rolling along, turning out a steady flow of kilowatts without fanfare or media attention.

Units 3 and 4 of Harris Plant Cancelled

With its conservation and load management (CLM) program underway, the Company chose to cancel Harris units 3 and 4. Smith warned that while there would be costs associated with implementing the CLM program, they would be only a small fraction of the cost of completing the two generating units. He said regulatory commissions would be requested to allow CP&L to amortize the \$187 million investment in the cancelled units over a 10-year period and collect the money through rates.

The rationale for asking customers to pay for expenses incurred for the cancelled units was explained by Smith. "When the decision was reached to build these units all conditions indicated, and the regulatory commissions concurred, that the construction of the four Harris units was in the public interest and should be pursued. Subsequent events, especially inflation and slower growth, have changed matters so that it is more in the customers' interest to cancel two of the units. Since the

investment was made for the benefit of customers, and the decision to cancel has been made for the benefit of customers, collecting the cost of this investment through rates is fair and reasonable," he said.

The Public Staff discouraged cancellation of Harris units 3 and 4, contending that they would be required to support economic growth in the state.

The Company was not alone in canceling nuclear plants. Similar announcements were heard all over the nation. Nearby, Duke Power cancelled five nuclear units during 1982. Nationally, 87 nuclear plant cancellations occurred between 1975 and March 1984.

For the first time, surveys indicated that more CP&L residential customers were using electric heating than were using oil heat. But energy sales for the year rose less than one percent, underscoring the conservation being practiced by customers.

This was a year reminiscent of 1975. Angry consumers again demanded that something be done about high utility bills. The media reported salary increases for top CP&L officers that were viewed by the average person on the street as unreasonable. No matter that officers had assumed new responsibilities or that salaries were low as compared to those paid executives of other major Carolina corporations. No matter that elimination of the salaries of top executives would have no noticeable impact on consumer bills. It was an emotional issue fanned by the media.

Politicians and the public debated it.

Almost as if it had made a conscious decision to try to bring pressure on the State Utilities Commission, the Raleigh News and Observer headlined a front page story, "To Wall Street, N. C. panel is utilities' buddy". Reporter Doug McInnis began his story, "Merrill Lynch is bullish on the N. C. Utilities Commission. The nation's largest brokerage house ranks the commission second in the nation in how well it treats utilities seeking rate increases.

"North Carolina generally ranks among the top 10 states in looking out for the needs of utilities and their investors," he wrote. "The Commission gives utilities a higher percentage of the amounts they request than commissions nationally. North Carolina utilities get higher rates of return on their stockholders' investment than the average return for utilities nationally."

McInnis noted that the state's laws allowed inclusion of Construction Work in Progress (CWIP) in rate base, and provided for expedited hearings so that higher rates became effective more quickly than in other states. The article added fuel to already growing fires of discontent.

In North Carolina the General Assembly, responding to consumer unrest, passed a law allowing the Commission to reject all or part of a fuel cost request if it determined higher fuel expenses were the result of shutdowns caused by poor operation or mismanagement. Similarly, legislation was enacted which left to the discretion of the Commission the amount of CWIP to allow in rate base.

The Company requested rates which would have increased revenues in the North Carolina retail jurisdiction by \$173.7 million. When the Commission issued its decision in September, it allowed only \$8.8 million, or less than one percent increase. One response was at the New York Stock Exchange where on the next market day CP&L was the most actively traded common stock and lost six percent of its value.

Night hearings had been held by the Commission in Asheville, Wilmington, Goldsboro and Raleigh. In all of the locations, consumers lined up to describe their personal hardships. Some managers spoke of branch manufacturing operations being placed at a disadvantage and jobs lost because energy prices from CP&L were higher than at locations served by other utilities. The largest crowd was in Asheville where the hearing attracted so many it had to be moved to a high school auditorium.

In its order the Commission criticized management in the nuclear area, penalizing the Company by allowing a lower than normal rate of return. It refused to increase the amount of CWIP in rate base to recognize additional construction expenditures. It specified that ratepayers should pay officer salaries at 1980 levels only and that 50 percent of the salaries of four officers who constituted the executive committee should be paid by shareholders.

Graham expressed disappointment at the Commission action. "Electricity rates are not

based on production costs at one plant, but on the operation of the entire system," he explained. "Even with increased downtime at our nuclear facilities, our total operating and maintenance expenses last year were the second lowest in the group of eight major Southeastern utilities. More importantly, look at what CP&L customers pay for electricity in comparison with rates up and down the east coast from Boston to Miami. CP&L's rates are low in comparison."

In South Carolina the Public Service Commission allowed \$25 million of a requested \$40.3 million.

Duff and Phelps, a Chicago-based investment research company which rated corporate securities, downgraded the Company's rating from 7 to 5, roughly equivalent to going from A-plus to A-minus.

Ratemaking Had Long Term Implications

Months before the rate decision, Smith had spoken to a national meeting of engineers in Chicago. He told them "regulators must begin viewing the long term implications of current ratemaking trends. That regulators take a short-term view is due to the weight of public opinion pressed against them.... We must seek to build a stronger foundation of public understanding about why rates must increase and why an adequate supply of electricity is so essential to economic growth, productivity and national security.... CP&L and the industry in general is on the horns of a dilemma

trying both to preserve their financial health and to assure future power supplies. It seems more and more like buying time until the final reckoning. Avoiding capacity expansion at the expense of an adequate future power supply masks the underlying problems of a regulatory system out of tune with the times."

Speaking to employees, Smith said "electricity consumers and utility shareholders should not be pitted against each other by governmental agencies. CP&L and the public we have served for so many years share a fundamental common interest in our being a financially sound, efficiently operated utility. Rather than drawing battle lines, we need mutual support."

After the decision which Smith described as devastating, he and Graham embarked on a personal campaign to talk individually with state officials and political leaders to help them understand better the consequence of denying CP&L revenues it sorely needed. Force the Company to forego construction and it was the customer who ultimately faced the prospect of energy shortages. Increase the Company's cost for capital by denying a fair return, and the higher expense inevitably would fall on customers. The Company was in a goldfish bowl. Treatment of it in response to public and political pressure had far-reaching implications.

The Goldsboro News Argus editorialized that something significant and sobering, but largely unseen, had happened after the State Utilities Commission issued its rate decision. Shareholders sold almost a million shares and the bond rating was downgraded.

"These were developments of little or no immediate concern to the average customer who was accepting the Commission ruling with mixed emotions: deploring another increase in rates but rejoicing that the jump will not be as high as requested by the power company. Utility companies do not win any popularity contests these days, the victims of necessary rate hikes and some public relations bobbles. They have an important story to tell. But they speak to a hostile audience that has difficulty seeing beyond the increasing magnitude of its monthly utility bill....

"Today, CP&L is forced to plan on meeting future demands not with more capacity but by consumer conservation. This places the economic well-being and certainly the future industrial development of the area served in a precarious position that consumers should not accept, much less demand, without full recognition of the potential consequences."

Rather than appealing the rate decision to the courts, the Company elected to file a new case. Graham said the move did not concede any of the issues decided against the Company. Instead, it recognized the time required for the appeal process would be long, and filing a new case was the more expeditious way to gain needed revenue.

Brunswick Improvement Program

The Brunswick plant was a nagging problem. An outage for refueling and

maintenance of unit 2 stretched deep into summer, weeks longer than expected. Unit 1 had valve problems which took it out of service for several weeks, again leaving the Company without Brunswick's nuclear generation during months of high consumer usage. Customers were paying a high fuel charge attributable in large part to unavailability of nuclear capacity during the preceding summer. The Commission had authorized recovery of the fuel expense over a period of 12 months. Now it appeared history was repeating itself. Management capability became a bigger issue.

Inability to keep outages on schedule led to a Company decision not to announce anticipated dates for returning nuclear units to service. Repeated delays, no matter how legitimate, were difficult to explain and drained the Company's credibility.

Charles Dietz had been employed in 1981 to follow Fred Tollison as manager at Brunswick. Before coming to CP&L he was manager of a General Electric Company nuclear operations training center and had 17 years of experience in nuclear plant work, including start-up and testing at Brunswick. Senior management decided to locate a corporate officer at the site and give him authority to make decisions which previously had been made in Raleigh. Patrick W. Howe, vice president of technical services, was chosen for the assignment. He answered to Utley. Reporting to him were Dietz and Tom Wyllie, site manager of engineering and construction. It was a move which pleased the NRC.

Utley said Howe would have total responsibility for plant operations, as well as all site

engineering and construction. The move would shorten decision time and increase flexibility, providing the organizational responsiveness required to take quick and decisive steps where necessary.

There was agreement that some of the problems at Brunswick could be traced to its design and construction, to the materials used, and to an all-out push to get it into operation on schedule. Some unfinished tasks were given low priority after the plant started, creating a backlog of work. Much of the difficulty was attributed to the salt water environment which caused extensive corrosion even before the plant began operating. Its impact had been underestimated. The sophistication of management required for a nuclear facility and the level of staffing proved to be greater than had been anticipated. This was true throughout the industry. Many of the changes for which long outages were required resulted from new regulations imposed by the NRC.

So Howe and Utley launched the Brunswick improvement program (BIP). It addressed the key points of an action order from NRC. It had seven major objectives and 119 individual tasks in 32 different areas. One aspect was reviewing and rewriting 3,000 procedures. Joe Holder was assigned to manage the program. Howe said BIP gave a tangible focus for work activity, provided a plan for the NRC to look at and check the plant against, and became a useful tool for reporting progress to employees.

He also worked to improve communications. He undertook a personal campaign to listen to employees, to visit different areas of the plant "just to talk", and to become acquainted with

plant workers. He concentrated on understanding his managers well enough to assure they were positioned properly.

It was the end of 1983 before the Brunswick improvement program was completed. While other major modifications remained to be done during the next two years, the plant had been brought into compliance with NRC standards. Howe considered the experience noteworthy for the openness and candor it produced in dealing with regulators. By 1988, when Howe retired and was succeeded by Russell Starkey, he said the Company had spent for modification and improvements dollars equal to about 93 percent of the original cost of constructing Brunswick.

Cresap Audit Was Good News

For eight months during 1982 a team of auditors from Cresap, McCormick and Paget performed the Commission-ordered audit of CP&L's operations. Its report came in December. For a company and a management which had been under attack, it was a refreshing change. The audit firm had been selected because of its strong reputation in assessing construction management, nuclear and fossil plant operations and maintenance, and complex management systems.

For one time, it was good to be in the news. The Raleigh News and Observer headlined its story, "Audit praises CP&L management." The Raleigh Times said editorially, "The audit itself, with its overall praise for CP&L's management, goes far to remove those blemishes.... We

congratulate CP&L on its good and promising report card." The Fayetteville Times commented, "After a long dry spell, some good news about the electricity business! CP&L ... is on the whole very well run."

The Cresap team found some opportunities for improvement. But its bottom line was that CP&L was well-managed and operated efficiently. "In many respects CP&L is one of the best-managed utilities that we have audited in the past several years," the report said.

It cited 53 specific strengths, including as more notable ones that the Company had well-organized, participative management with a commitment to excellence; good operation of fossil plants and the Robinson nuclear unit which had produced significant cost benefits for ratepayers; commendable cost and schedule performance in construction of Mayo 1; a sound management approach at the Harris nuclear project; a consistently superior safety record; a solid and innovative finance and accounting organization; and extensive and innovative formal management systems that compared very favorably with those of other utilities.

The report identified two areas as offering greater opportunity for improvement. The first was operation of the Brunswick plant. The second was enhanced public understanding of the Company's operations, an opportunity which was suggested to the audit team during a preliminary report to the State Utilities Commission. It reflected the Commission's sensitivity to political and public reaction during the rate hearings.

About Brunswick the auditors observed that the situation was complex and in their opinion traced back several years. The report said Brunswick "required, as all nuclear plants do, design modifications or enhancements soon after commercial operation. Superimposed upon this workload was a flood of design changes generated by TMI and mandated by the NRC." While commending the Company's plan for improving performance at Brunswick, the report stressed the importance of recognizing "that while the programs and structure set forth by CP&L are sound, the improvement process cannot be compressed in time and is likely to take two to three years to complete."

One of the recommendations in the audit was that an outside director with nuclear expertise be added to the Company's board. This was achieved in December 1984 with the election of Gordon C. Hurlbert, former president of Westinghouse Power Systems which manufactured the nuclear steam supply systems for Robinson 2 and the Harris plant.

Jim Davis and Thomas Dwyer, manager of performance review and audit services, coordinated the Company's interface with the auditors who conducted over 500 interviews. Auditors also examined over 1,500 documents, many of them from external sources such as the NRC, the Utilities Commission, intervenors and the media.

No one relished more the upturn in the tone of the news which the Cresap report

brought than Mac Harris, director of CP&L's news services. For several years he appeared to survive on the telephone, either seeking information from within the Company or responding to media inquiries -- days, nights and weekends. Media calls to his home were frequent and lengthy. A former college professor, he approached his job as being more than just to give bare facts. He sought to assure that reporters understood the information and knew how to put it in perspective.

Customer Questions, Comments Invited

To give customers opportunity to ask questions, offer suggestions and discuss issues affecting their electric service, public meetings were held in Company offices across the system, some of them attended by Graham and Smith. The numbers of customers who came was small by any measure. It was a procedure whose greatest value was the perception that the door was open for consumer input.

The Wilmington Star-News commented editorially following one of the meetings. "You have to wonder about people who squeal like stuck hogs every time Carolina Power and Light Company announces a rate increase and then, when CP&L bares its breast and says, 'Have at me,' are nowhere to be found.... When CP&L offers consumers a good chance to work off their hostilities and aggressions right out there in public, as the company does frequently, hardly a word is heard, discouraging or otherwise.... If any deep meaning can be drawn from this particular public apathy and inertia, it is probably that a meeting with CP&L executives is not an appropriate setting for a howl of

pain. You do that when the light bill comes."

What was happening in the larger energy picture was summarized in a report from the Oak Ridge Institute for Energy Analysis. Since 1960 industry had reduced total energy usage per unit of output by 41 percent, but the electricity used per unit of output had risen 10 percent. Electricity had been substituted for other forms of energy.

Ott Jones, Jim Ridout Retire

The year was marked by the retirements of Ott Jones, vice chairman, and Jim Ridout, senior vice president for the customer and operating services group. Utley succeeded Jones as chief operating officer. Russell H. Lee who had been vice president for the eastern division replaced Ridout and was elevated to senior vice president. Charles Barham was elected senior vice president for the legal and regulatory group. Richard E. Jones followed Barham as head of the legal department and was elected vice president.

Utley, a native of Moncure, N.C., had literally worked his way up from the bottom at CP&L. His career began as an electrician in a steam generating plant. Subsequently, he was manager of the Weatherspoon, Lee and Roxboro plants before coming into the general office with

responsibility for fossil and hydro generation. He was popular with employees, a man who understood the nuts and bolts of plant operations and who was a gifted manager. Associates saw him as one who set high standards for himself and expected the same from others, an extremely fair man who loved talking to people in the plants and was quick to recognize good performance.

A fellow worker recalled an incident that reflected Utley's incisiveness. When a manager who reported to him fumbled for words in answering a question, Utley gently queried, "If I ask more questions, will I force you to tell me more than you know?" Later, Utley commented that "to a great degree, the success I have enjoyed can be attributed to following the philosophy of always trying to keep around me people who had more potential than perhaps I did."

Barham, a Raleigh native, earned his undergraduate and law degrees from Wake Forest University where he was a member of Phi Beta Kappa and president of the student body. He was with CP&L from 1966 until 1973 when he left to go into private practice. He returned in 1981 as vice president and senior counsel.

Richard Jones came to CP&L in 1975 from the Tennessee Valley Authority. There he had been involved in the beginning of a big nuclear program and with the breeder reactor project, experience which proved valuable at CP&L. Before attending George Washington University Law School where he graduated with highest honors, Jones had been a Presbyterian minister.

Lee joined the Company in 1962 as an agricultural engineer. He was manager at Spruce Pine and district manager in Florence before advancing to manager of the eastern division.

1983: MAYO 1 BEGINS OPERATION

It was the Company's 75th anniversary year. It started on a sad note with notification that the NRC was proposing a \$600,000 civil penalty for non-compliance with NRC requirements at Brunswick. The Company had found and reported to NRC the preceding summer that it had failed to follow some technical specifications which required the establishment of procedures and the conducting of surveillance tests. Of the 500 surveillance tests required, one had been missed. The amount of the penalty reflected the extended period for which the oversight had gone undetected. When the oversight was discovered, the procedures written and the surveillance test conducted, the equipment was found to operate properly. The fine came months later.

News about Brunswick improved when Harold Denton, director of nuclear reactor

regulation for the NRC, visited the plant in October. After a tour, he declared "the facility compares favorably with any other plant in the nation." He said his interviews with employees and his overall observations indicated "the plant has turned around." His remarks prompted a headline in the Wilmington Star-News: "Official gives CP&L plant good marks."

Fishery Management Programs

A new environmental system was in operation at Brunswick. In addition to a diversion structure which kept adult fish from entering the canal leading to the cooling system, the Company had installed fine mesh screens to prevent the intake pumps from pulling smaller marine life into the plant. Larval fish and shellfish washed from the screens into a big trough which eventually returned them to their natural environment. Company biologists likened the 4,000 foot trough to a giant waterslide, a "slide to life." It emptied into an eight acre pond. More importantly, it demonstrated the length to which the Company went to assure the plant would have minimum impact on the area.

Biologists also were busy at the Robinson plant. During fish sampling in 1980, they had discovered some bluegill in the lake were deformed around the mouth and gills. Studies revealed that because of natural acidity in Lake Robinson, copper and zinc was being leached into the lake as cooling water circulated through the plant's condenser tubes. To correct the problem, the copper and zinc condenser tubing was replaced with stainless steel tubing in 1981. Subsequent samplings by biologists showed the tubing change eliminated the accumulation of copper in the lake and corrected

the fish problem.

Similar fishery management programs were underway for waters at other Company facilities. They were necessary to comply with National Pollutant Discharge Elimination System (NPDES) permits. Usually, the biologists made quarterly samplings of the fish population at each lake. Anglers applauded when the biologists installed artificial reefs in the Harris lake and added channel catfish and threadfin shad to its native population. When the Mayo reservoir was completed, old truck and auto tires were used to make reefs which provide cover for fish in otherwise open waters.

Mayo Plant

Mayo unit 1, a 720,000 kilowatt coal-burning plant in Person County, began commercial operation in March 1983 and was dedicated officially in June. Governor James B. Hunt, Jr., spoke at the dedication, noting the importance of the plant to the area's growth and prosperity. He said that as he sought to attract high technology industries to the state, he was questioned about educational resources, the type of work force, the business climate, and the availability of electric energy. Because he could give positive answers to the questions, the Governor reported that in the last six years industry had announced \$11.5 billion worth of new and expanded investment in the state -- more than in the preceding 25 years.

Only 10 miles east of the Roxboro plant, the Mayo site was selected to minimize the

distance coal had to be hauled from mines in West Virginia and Kentucky. Operating at capacity, the plant burned 8,000 tons daily. Fuel handling equipment allowed unit train deliveries, enabling the plant to take advantage of lower freight rates. The plant's name came from the stream which was impounded to provide water for the cooling towers.

Cost per unit of capacity for constructing Mayo was \$723, about 25 percent below the national average for similar units built during the same period, but well above the investment of \$314 per kilowatt for Roxboro 4 which was completed three years earlier. The initial plant operating staff was 100 persons, only a small fraction of the number required for a nuclear facility of comparable size. Within a few years, the staff had been reduced to 71.

Ned Kirby, plant superintendent, said Mayo had a remarkably smooth start-up and quickly established a pattern of excellent performance. It and the Roxboro plant, located in the same county, combined to supply more than half of the Company's energy requirements in 1984. They also combined to pay Person county almost \$3 million in property taxes in fiscal 1983-84, nearly 52 percent of the county's total.

75th Anniversary Celebrated

More than 300 persons gathered in Raleigh for a November dinner sponsored by General Electric to celebrate the 75th anniversary of CP&L. Dr. William Friday, president of the

University of North Carolina, praised the Company for manifesting a high level of corporate character and integrity, and "for its efforts to give us all a better way of life." Cautioning that the state could not turn away from established industries such as textiles, furniture and agriculture, he called for a vigorous program of adaptation of new technology to help supply the 900,000 additional jobs he said North Carolina would need by 2000.

Smith used the occasion to point out that over the last 25 years the number of customers served by CP&L had almost doubled while the peak demand had grown six-fold. Looking ahead, he said the task would be to provide power for a new generation of industry with new technology while continuing to meet the rising demand of existing industries.

Unit 2 of Harris Plant Cancelled

Demand growth was slowing. The forecast was for growth in peak at an annual rate of only 2.6 percent through 1995. Directors decided to cancel Harris unit 2 which was about 4 percent complete and represented an investment of approximately \$315 million. A primary reason for the cancellation was the "substantial increase in costs due to continually changing and restrictive federal regulatory requirements." Construction of Mayo 2 would be accelerated to replace the generation that was to have come from Harris 2. The interest of customers was better served by substituting a coal-fired unit whose completion schedule and final cost were predictable. Even with the cancellation, the construction budget for 1984 was \$888 million.

The Company announced its plans for cooperating with state and local agencies to allow public use of the lands and waters surrounding the Harris plant. As a result, 13,167 acres were committed for public access with 8,715 acres of this being registered with the North Carolina Wildlife Resources Commission as public game lands. Boat ramps were built at two locations to allow access to the lake. The state operated the ramps, and enforced boating, fishing and hunting laws. One tract of 660 acres was leased to Wake county for the development of a park. North Carolina State University was granted use of 1,222 acres for research and teaching purposes. Wildlife refuge areas totaled 2,750 acres, including one area for the red cockaded woodpecker, a bird protected by the Endangered Species Act. In later years, management of the lands and waters at the Harris plant and at other Company facilities brought frequent recognition from state and national conservation and wildlife groups.

Project Share Started

Project Share was launched in 1983 as a vehicle to allow employees and customers to help pay energy bills for low income, elderly and handicapped persons. The Company offered \$150,000 annually on a matching basis which it said would be sent to the division of social services in each of the Carolinas, based on the origin of the employee and customer contributions. Through its first 10 years, Project Share generated \$5.1 million which was distributed to help more than 47,500 families.

The 1983 rate case resulted in an increase of 8.22 percent in North Carolina, a little more than half of the 14.93 percent requested.

Rate Protests in South Carolina

Consumer and political pressures also were felt in South Carolina. The legislature passed a Reorganization Commission bill which provided for continuation of the Public Service Commission and specified that it give decisions in rate cases within six months and five days. Rates no longer would be allowed to go into effect under bond, as had been the practice. Graham recalled that a rate hearing in Sumter had to be moved from the courthouse to a high school gymnasium. It was promoted in advance by a local radio station which broadcast a play-by-play account of the meeting.

South Carolina also became the fourth state to adopt the Southeast Interstate Low-Level Waste Compact. Low level radioactive waste from the eight states in the compact was to be shipped to Barnwell until 1992 when one of the other states was expected to host a waste facility to serve the region. Subsequently, North Carolina was selected to be the next host state. But public resistance delayed the selection of a site, and 1992 arrived with the location still unsure. South

Carolina agreed to continue operation of the Barnwell facility until 1996.

Organizational Changes Announced

In a further move to consolidate responsibility, fix accountability and expedite decisions, Utley announced major organizational changes. He changed McDuffie's title to senior vice president - nuclear generation with the following departments and managers reporting to him: Harris nuclear project, R. A. Watson; Robinson nuclear project, Guy Beatty; nuclear engineering and licensing, A. B. Cutter; nuclear plant construction, Sheldon Smith; engineering and construction support services, W. V. Coley; and the nuclear staff support section, J. L. Harness.

Eury became senior vice president for fossil generation and power transmission. Departments reporting to him were fossil generation, J. B. McGirt; transmission, E. S. Noell; fossil engineering and construction, L. B. Wilson; and system operations, J. W. Kirk; plus the maintenance support section headed by C. G. Letchworth and the administrative section managed by R. M. Coats; and Mendall H. Long, manager of special projects.

Davis assumed the title of senior vice president - operations support. Departments reporting to him were fuel, W. J. Hurford; operations training and technical services, B. J. Furr; materials management, W. B. Kincaid; and the contract services section, S. F. Stidham.

1984: An Excellent Year in Many Ways

Energy, the foremost concern of Americans during the mid-70s, no longer was a bother. Cambridge Reports, a national opinion-sampling firm, found only two percent of the public believed energy or environment to be the most important issues facing the country. Only one percent named nuclear power. The major concerns were foreign affairs (48%) and unemployment (32%).

Earnings improved, economic activity picked up, and major modifications at the Robinson and Brunswick plants were completed, leading Smith to describe 1984 as "in many ways, an excellent year for our Company."

With delays in licensing, the cancellation of some nuclear plants and conversion of others, NBC-TV chose to make nuclear power a topic for its Today Show. Smith was invited to participate in a brief debate with Charles Komanoff, energy economist and nuclear critic who argued that the public should not have to pay for the investments in cancelled nuclear power plants. The

moderator reviewed recent nuclear setbacks, most of them during January, leading Smith to point out that it would have been a real "black January" without the nation's 80 operating nuclear power plants.

The Company removed its older nuclear unit, Robinson 2, from service in late January to inspect corroded steam generator tubes. The inspection revealed a need to replace the steam generators. While the cost of repairs was more than the original expense to build the plant, studies showed that replacement would save the Company and its customers \$2.2 billion between 1984 and 1998. The alternative to repairing it was to build an entirely new plant. In its first 12 years of operation, Robinson 2 had saved \$500 million with its lower fuel cost.

In 1981 the NRC had identified plants which had potential problems from pressurized thermal shock (PTS), a condition which results when cold water is pumped into a hot, pressurized reactor vessel to produce a rapid cool-down during an accident. Robinson was on the list of plants which the NRC contended had "embrittled " reactor vessels. It was projected to reach the NRC's minimum strength level for reactor vessels by 1993. Joe Sheppard, principal engineer in nuclear licensing, headed a team which by 1984 came up with a new fuel assembly design that effectively shielded portions of the vessel most vulnerable to embrittlement. Called a "Partial Length Shielded Assembly," the design reduced the rate of embrittlement to less than 10 percent of what it had been prior to 1982. The new fuel design was expected to correct the PTS problem through 2007, the year when the plant's operating license would expire.

Banner Year for Coal-fired Plants

Loss of Robinson 2 for the remainder of the year combined with the scheduled modifications on Brunswick 2 provided opportunity for a banner year for the Company's coal-fired plants. They operated at an equivalent availability of 86.2 percent, well above the industry norm, and burned 11 million tons of coal while supplying 79 percent of the generation for the system. Out of this experience came the slogan at Roxboro: "We carry the load." Roxboro employees scheduled an open house to show off the plant, which in the words of Manager Clint Wallace, "burned 18,000 tons of coal a day" and provided "almost half the electricity" CP&L was producing from coal. Staffing at Roxboro subsequently dropped to 237.

McGirt, manager of fossil operations, saw Roxboro as reflecting the pride felt throughout the department. As plants became bigger, more training of personnel had been necessary. One result was that people took more pride in plant performance. They looked for opportunities to reduce steam leaks around valves. They learned to fine tune equipment to pulverize coal, and to optimize the mixture of air and coal in the boilers. They maintained equipment better. These kinds of improvements combined to give additional output of 600 megawatts, the equivalent of a major new plant. It was conservation of a different kind.

New Training Center for Brunswick Plant

There was upbeat news from Brunswick. Unit 1 had a capacity factor of 72.5 percent for the year. A new training center was completed. It included an \$8 million simulator which was an exact replica of the plant's control room. Richard De Young, director of the NRC office of inspection and enforcement, spoke at the dedication. He cited the new facility as symbolic of management's commitment to excellence in training and to the dividends which can accrue from such a commitment. And he referred to the improvement program, saying it had made a decided difference in the performance of the Brunswick plant and the Company.

Another indication of the Company's focus on high standards for its nuclear operations came when the Institute of Nuclear Power Operations accredited the reactor operator training program for the Robinson plant. INPO had started its accreditation program in 1983. Timely accreditation of the training programs at Brunswick and the Harris plant followed.

Hearings on the Company's application for an operating license for the Harris plant were underway with the Conservation Council of North Carolina, the Chapel Hill Anti-Nuclear Group Effort, the Kudzu Alliance and Wells Eddleman intervening. Eddleman who lived in Durham was a persistent critic of nuclear power and CP&L. He appeared at shareholder meetings and hearings before the State Utilities Commission as well as in the NRC proceedings. Four parts of the five-part hearing before the Atomic Safety and Licensing Board were finished by year end. Some of the sessions were lively. A witness for the Company likened opponents to "medieval monks" while one critic suggested the plant could send "devils" into human lungs.

1984 brought another rate case, this one requesting 12.6 percent in North Carolina as the Company sought to get its CWIP into rate base. The Commission allowed 5.35 percent. Increases approved in the three regulatory jurisdictions added almost \$100 million to annual revenues.

Common Sense Energy Practices Applied to Schools

In Latta, S. C., Customer Service Representative Ernie Long called in David Whitesides to put his common sense approach to work at Carmichael elementary school, an energy inefficient building erected decades earlier. Whitesides, senior energy services engineer from Florence, proposed covering four of the six large windows in each classroom with insulating panels, adding insulation and installing a heat pump for each room. Superintendent Quincy Smith accepted the proposal, retiring a 27-year-old central heating system. His investment was \$54,000. The first year the school's energy bill was \$5,466 less than it had been the year before for heating and electricity. Air conditioning was a bonus.

More importantly to Quincy Smith, "there's a better atmosphere for learning, and that's had a big psychological impact... Our first concern has to be what's best for the children. Hot weather used to be an excuse for not learning. Now there's no excuse."

Two other school buildings in the Latta district were modified in the same way, leading

to a 1984 award to the district for wise and efficient use of energy. Latta became a model, an experience which was shared with other school administrators. Whitesides called it one of the best things he had seen. "Look at who you make happy: students, teachers, principals, school board members, parents."

Four years later, Whitesides accepted for the Company the South Carolina Energy Achievement award which was presented to CP&L by Governor Carroll Campbell. The award was for energy conservation projects with 40 Pee Dee area schools which reduced annual operating expenses by \$200,000.

Participation in CP&L appliance control programs was gaining steadily with more than 30,000 customers allowing air conditioners and water heaters to be controlled remotely. There were almost 59,000 Common Sense homes and apartments.

Tornado and Hurricane Damage

Weather twice brought damage and opportunity to the system. A spring tornado cut a path from Hartsville to Kinston, leaving 65,000 customers without electrical service and causing \$3 million of damage to Company facilities. Hurricane Diana struck Wilmington and the surrounding area in September, knocking out power to 45,000 customers and doing \$1.5 million of damage to CP&L facilities. For those who experienced the storms and shared in the clean up, there were

memories that would never be forgotten. Charles Hoffman, Maxton manager at that time, spoke of having to clear fallen trees from streets in order to reach lines that required repair. Twenty-five volunteers from the Weatherspoon plant, equipped with chain saws, spent two Saturdays clearing fallen timber for elderly tornado victims. One beneficiary of their efforts wrote Plant Manager C. V. Bailes: "It is men like them that make this a better world to live in."

Weather wasn't the only thing causing power outages. Media reports told of a "power-full snake" that zapped the City of New Bern, knocking out service to 5,000 customers, by crawling into an automatic circuit breaker in a substation. The Fuquay-Varina Independent said a "creepy night visitor" cut power to 4,000 by crawling into a substation. The midnight marauder was identified as a chicken snake.

The Company launched an annual merit scholarship program for the children of employees, offering 10 college scholarships of \$1,000 per year for four years. The first recipients entered college in the fall of 1984.

1985: Total Quality Introduced

A visit to the American Productivity Center in 1981 had sparked Smith's interest in total quality. He saw how it was being applied by manufacturing industries. Over the next three years he continued his investigation, while pondering how and when to introduce the concept at CP&L. He viewed successful leadership as coming not by authority or command but out of the effort, skill and ability to work with people. And he saw more competitive pressures ahead.

The first electric utility in this country to commit to total quality was Florida Power and Light Company. Smith arranged for a team from CP&L to visit Florida and learn what FP&L was doing, how they were doing it, and the results they were achieving. The CP&L team included John Monroe, representing the customer and operating services group; C. V. Bailes, representing fossil operations; and Richard Morgan, representing nuclear operations. They spent several weeks in Florida, being joined at times by other CP&L personnel. Their reports were positive.

Senior management then did an analysis, trying to answer such questions as what is

CP&L like, what are its strengths, what are its weaknesses, what are its challenges, and could total quality produce more effective working relationships. The concept was endorsed. To underscore the commitment, a new department was established to bring total quality (TQ) into CP&L. Monroe was designated to head the department which had only four other professionals: Roger L. Allen, Jr., manager of quality planning; Larry E. Boyer, manager of quality performance; Martha C. Leak, manager of team development and training; and A. Wade Pridgen, manager of quality support. Clearly, the intent was to equip and enable managers to implement TQ practices in the regular work routine. Once TQ was underway, the department's functions became a part of the employee relations department.

From the outset, Smith's vision was to learn as much as possible from the experience of other firms and from consultants, and then develop a program tailored to CP&L. Over an extended period, he met regularly on Saturday mornings with Monroe and Wilson Morgan, the senior manager to whom Monroe reported. They reviewed findings, assessed progress and charted direction. Whether it was recognized at the time, they in fact were shaping a formal effort that would change dramatically the culture of CP&L. Smith later said the decision to commit to TQ at CP&L was as important and far-reaching as any he made as chief executive.

Properly understood and implemented, quality should not be just a method of change, Smith believed. It should be an inspiration to excel.

Monroe spent three weeks in Japan, traveling with a group of 20 from FP&L. Among the businesses he visited were Kansai Electric and Toyota. Ironically, while the concept of total quality had been originated in this country following World War II, it had been marketed to the Japanese because there were no buyers here. In this country, Monroe visited IBM and other companies which more recently had implemented total quality. He said CP&L decided to focus on changing management styles and culture, depending heavily on classroom training.

Characteristics of Total Quality Companies

Smith said CP&L found that total quality companies had these common characteristics:

- * They consistently produced higher quality products and services for their customers at lower costs than their competitors.
- * They tended to provide greater long-term security and opportunities for growth and development for their employees.
- * They were proactive companies. When the business environment changed, they changed.
- * They made the tough decisions, but based those decisions on facts and data, not

opinions.

- * They planned well and took the time to understand an issue thoroughly before acting.

There had been earlier use of quality circles in CP&L. R. B. Richey, then manager of materials management, had formed a team to solve a document routing problem. Bailes established reliability teams at the Weatherspoon plant which used a similar problem-solving process. The Mayo and Roxboro plants had involved workers successfully in team efforts to improve facility operation.

The senior management committee functioned as the quality council. Smith established a TQ steering committee chaired by Monroe to help develop plans and activities. It included Bailes, manager of the Roxboro plant; Richard Morgan, general manager of the Robinson plant; Cecil Goodnight, manager of employee relations; Robert Lively, manager of the eastern division; and Albert Morris, corporate communications.

Education and training were the first step. "Making Things Better" was introduced as a structured problem-solving process. "Managing Relationships at Work" was a course to improve management practices. They were offered for employees, starting with senior managers and filtering through the organization.

In the 1985 annual report, Smith told shareholders that "total quality will be a dynamic, changing activity. Its goal is continuous improvement in everything we do. So in the sense of being finished, it never will be. However, all the basic components will be in place and fully implemented ... by the end of 1987."

The first five-year plan for total quality had four basic elements: 1) satisfying the needs and expectations of customers (internal and external) and employees, 2) making the most effective use of Company resources to meet key corporate objectives, 3) achieving breakthroughs to new, higher levels of performance in areas critical to the success of the Company, and 4) continually improving all operations.

Citing competitive pressures, Smith told employees that "if we are going to succeed with the team we have today, it's because we will be able to find new ways for everybody to contribute to the maximum extent possible to accomplish our goals."

He described total quality performance as providing to the customer, the regulator, the public, or to the "person next to you at the Company" that product or service that's exactly and precisely "fit for use." Others used the phrase "doing the right thing right the first time."

Corporate Mission Statement Expanded

To emphasize the commitment to total quality, the corporate mission statement was expanded by adding a sentence:

"It is the mission of Carolina Power and Light Company to provide the best service to present and future customers at the lowest rates consistent with fair compensation to employees, a fair return to those who have invested in the Company, safety for employees and the public, reasonable protection of the environment, and development of technology to provide future service. Through the development and contribution of all employees, to the maximum of their potential, the Company will assure total quality performance that results in the highest achievable levels of customer satisfaction and recognition for excellence."

Similarly, a set of CP&L beliefs was adopted:

"To conduct our business with integrity, safety, efficiency, and care; satisfying customers, suppliers, the general public and government.

"To maintain an atmosphere of respect, trust and fairness among all employees; providing opportunities for full development, contribution and recognition for achievement.

"To maintain the financial strength necessary to meet all obligations, provide for our customers' future requirements and earn reasonable returns for our Company's investors.

"To be responsible citizens supporting worthwhile programs, including economic development, in the communities we serve and to be involved in our social and political environment."

TQ -- A Way of Life at CP&L

After market testing a range of proposed slogans, the Company decided the one that was easily the favorite of employees was "Total Quality -- a way of life at CP&L."

By the spring of 1986, the first project quality teams were formed to work on specific problems. There were three teams of department heads. Russ Starkey headed a team to look at ways of streamlining approvals, Bobby Montague chaired a team to consider how to improve the budget process, and Pat Howe led a group which looked at the authorized personnel inventory.

Similarly, there were six teams of section heads. Leaders and their topics were Mike Hill, budget plans as they relate to operating decisions; Bill Stocks, enhancing the process for identifying waste and inefficiency; Bobby Suggs, shortening the time required to pay invoices and employee expense accounts; John Robinson, enhancing contract activities; Jim Marshall, reducing momentary service interruptions; and Bill Hindman, enhancing the purchasing system for low-cost items.

Each team had a facilitator to assure that it followed the TQ process. When a project quality team completed its assignment, it was invited to meet with the quality council to present its findings and recommendations. Changes began to occur. As training reached deeper into the organization, teams were formed within departments to probe issues which employees identified.

Key words became a part of most conversations: input, feedback, recognition, slam dunk, black hole, don't kill the messenger. Attitudes were changing. Those at lower levels of the organization who had been skeptical found management receptive to their input.

By the end of 1987, virtually all employees had received training in the fundamentals of total quality, and over 180 teams were functioning. In late 1986, Monroe had moved to Wilmington where he became vice president of the eastern division. Jerry Kirk who had been manager of the Weatherspoon plant followed Monroe as leader of the TQ department.

Record Cold Tests System, People

The year had started on a very cold note. Temperatures across the system dropped below zero, breaking weather records and leading to new highs in energy usage. It was 16 degrees below zero in Asheville, 9 below in Raleigh and 1 below in Florence. On January 21 customer demand reached 7,799,000 kilowatts, 13.5 percent above the previous system peak. During 24-hours

customers used 164,885,000 kilowatt-hours, up from the old record for one day of 137,314,000 set January 11, 1982. Once again, personnel in the fossil plants applied muscle and ingenuity to get coal from frozen piles into the boilers.

CP&L meteorologist Brian McFeaters had a word of comfort. He said it was the coldest ever and probably colder than the area would ever see again. At Roxboro where outside crews tackled frozen coal piles, Kelvin Wilson complained that wearing insulated overalls and wrapping faces with towels wasn't enough to protect against the cold.

David Moore, manager of the Skaale energy control center, said early warnings had allowed all available plants to be brought on line, maintenance to be postponed, and work schedules to be rearranged to have additional manpower available. Nonetheless, he said it was a severe test for the system, requiring a voltage reduction and public appeals for reduced usage.

Temperatures caused power lines to contract, snapping lines and poles. Near 50,000 customers suffered power interruptions. The familiar picture of linemen braving the elements to restore service was seen all too often, particularly in the northern and western divisions.

In February the Company sold its ninth consecutive issue of common stock at below book. But the price of \$25.50 was nearer the book value -- \$26.87 -- than for most issues sold since 1973. Over the 12 years, to maintain its equity ratio while financing construction, the Company had

sold almost 72 percent of its total shares outstanding at less than book. Later in the year, the market price finally recovered enough to climb above book.

Smith Installed as Chairman of EEI

Sherwood Smith's industry leadership was recognized again when he was installed as chairman of EEI. In the preceding year he had been elected a director of the American Nuclear Society. When he became chairman of EEI, CP&L could claim recognition as the first utility to provide three elected heads of the industry organization. Smith followed in the footsteps of Sutton and Harris. He had been instrumental in the merger of EEI and the National Association of Electric Companies, the lobbying arm of the industry. In 1987, he would have a leadership role in merging the Atomic Industrial Forum and the United States Committee for Energy Awareness into the United States Council for Energy Awareness. That merger was expected to give a clearer focus to industry communications. Like Sutton and Harris, he was effective nationally because he enjoyed the trust and respect of his peers.

In an address to the 1986 EEI convention, Smith declared, "If we are to be credible in our communications at both the local and national level, we must be perceived as producing and delivering a quality service in every way.... We must be perceived by our customers, our employees and our shareholders as managing well if we are to expect their support in successfully adapting to the changes we will face.... Preparing our companies to respond" to new issues "will take the efforts of all

our employees working together toward a common goal. Many companies have undertaken emphasis on total quality as one means of meeting the challenges they face. They understand that every employee in every activity must project a quality image. If we appear inept in responding to a minor problem, or to a customer complaint, we cannot expect those who witness our behavior to trust the company to manage a complex enterprise such as the operation of a nuclear plant."

Commenting on the challenge of building new generating capacity, Smith said "nuclear plants are not a reasonable planning alternative because of the regulatory system which gives no assurance that a plant can be designed, built and operated. There also is some uncertainty about what would be required to build a coal plant. Most utilities are concerned that with emerging coal technologies, new plants committed to in the near future may be obsolete before they are completed."

During his year at the helm of EEI, Smith also called for stronger public information and governmental affairs programs. He urged a willingness to commit the necessary resources, including executive time, to federal affairs. He identified issues facing the industry as acid rain, railroad deregulation and nuclear power legislation. But his major thrust was to urge a commitment to total quality in every utility's operations.

Customer Satisfaction -- Our Basic Business

The customer and operating services group adopted a slogan, "Customer Satisfaction -

- Our Basic Business." In October Charles E. Scott took a leave of absence from his position in customer operations support to become Adjutant General for the North Carolina National Guard. He was promoted to major general.

In its annual report, the Company said it had invested more than \$601 million in environmental protection systems since 1968, spending about \$95 million of that during 1985.

A new simulator for the Harris plant arrived in October. It was an exact replica of the control boards in the plant. The first simulator had become obsolete because of changes in the control boards which resulted from new NRC regulations. It was sold to a firm representing the People's Republic of China. Temporarily, the simulator at Harris continued to be used for training operators for the Robinson plant. But a simulator had been ordered for Robinson 2, too. Staffing and schedules were planned to allow licensed reactor operators to spend one week of every six in training.

With the simulators it was possible to create various scenarios that could develop in an operating plant and allow trainees to respond to them. At Harris one of the scenarios was the sequence of events which triggered the accident at TMI.

Robinson 2 returned to service in early 1985 after the planned replacement of steam generators, and set a performance record by generating 5,239,000 megawatt-hours while achieving a capacity factor of 89.9 per cent.

Prudency Audit of Harris Plant Construction

Across the country there had developed a new and different kind of hurdle for nuclear plants. It was called a prudency audit, an investigation to determine the reasonableness of decisions made by management during construction. Prudency audits were stimulated by cost over-runs and the resulting big investments which companies sought to get into rate base as plants came on line. By disallowing investment, regulators kept rates lower. For some plants, disallowances approached a billion dollars.

Given what was happening elsewhere, CP&L anticipated a prudency audit for the Harris plant. What had started out to be a billion dollar plant with four units had become a near \$4 billion plant with only one unit. While critics could fault the plant in one sentence, Dick Jones said it would take a book to respond. Consultants were retained to help develop a comprehensive history of the Harris plant, clearly establishing what was known when key decisions were made through the years. Jones coordinated the preparation.

In late 1985 the North Carolina Commission authorized the Public Staff to undertake an audit. Its order stated: "In consideration of the time span of the Harris construction, the total amount of money involved, and the potential impact on CP&L's rates, an investigation is in order for the purpose of assembling and preserving evidence for the general rate case to be filed by the

Company."

The Public Staff said its standard in reviewing CP&L management decisions would be whether such decisions were made in a reasonable manner, and at an appropriate time on the basis of what was reasonably known or should have been known at the time. The parties agreed that the investigation should not review the decision to build the Harris plant, or subsequent decisions to continue construction and to cancel three units. Both the Commission and the Public Staff had supported consistently the decision to build Harris 1.

One year later, the Public Staff selected Canatom, a large Canadian nuclear engineering firm, and Ben Johnson Associates, Inc., to perform the audit. The second firm looked at financing only. Jones later said the selection of Canatom spoke well for the fairness of the Public Staff. By mutual agreement, the beginning of the audit had been delayed to allow CP&L construction management people to complete the plant without the distraction of an audit.

There was a change in the responsibilities of senior executives. Graham was promoted to vice chairman, Utley became senior executive vice president, and Lilly was named executive vice president for finance and administration.

1986: CHERNOBYL

Hearings on the Company's application for an operating license for the Harris Plant had been completed. The Atomic Safety and Licensing Board was ready to recommend that a license for fuel loading and low power testing be granted. A group which called itself the Coalition for Alternatives to Shearon Harris (CASH) continued to protest, but its meetings attracted only 30 to 35 persons. Eddleman, the MIT-educated teacher and self-styled energy consultant from the Carolina Friends School, and a few of his associates from the Kudzu Alliance were the nucleus. Media reports indicated that he and two other activists had met in Chapel Hill to start CASH. Jay Mullins, director of the Harris visitors center, attended the CASH meetings to be aware of their concerns.

On April 26 there was an accident at Chernobyl, a Russian nuclear power plant. The first that the world knew about it came from reports out of the Scandinavian countries where unusually high levels of radioactivity were detected. One of four big reactors at the site was virtually destroyed by a power surge which resulted from faulty test procedures and operator errors. Because the Russian plant had no containment structure as nuclear plants in the Western world do, the accident released large amounts of radiation, forcing evacuation of the surrounding area. Experts were quick to

point out that the Russian plant was not comparable to United States nuclear plants nor could it have been licensed in the United States.

Panic was unleashed. Anti-nuclear activists found new life. CASH gained instant credibility. Its ranks swelled. Protesters took aim at the emergency plan for the Harris plant. Media coverage was extensive, once again unearthing alarmists who paraded as experts.

Nationally, the Nuclear Information and Resource Service set a day for nuclear protests and concerns, saying there would be demonstrations from the Seabrook plant in New Hampshire to Humboldt Bay, from Davis-Besse in Ohio to Arkansas Nuclear 1, from Grand Gulf to Big Rock Point, from Indian Point to Lafayette Park across from the White House. That the anti-nuclear organization failed to list the Harris plant was little consolation.

Nuclear Opponents Focused on Chatham County

Chatham county, one of four counties in the Harris Plant emergency planning zone (EPZ), soon became a focal point. Commissioners came under intense pressure to withdraw from participation in the emergency plan for the Harris plant. Finally, they scheduled an evening hearing in the courthouse at Pittsboro. An estimated 700 protesters overflowed the meeting room and surrounded the courthouse square. Speakers were set up so those outside could hear what was said inside.

The spokesman for CP&L was Graham who went into the meeting knowing that the commissioners had reached their decision during a morning session. They would vote to withdraw. He spoke with calm and reason, but nothing he could have said would have swayed the crowd, many of whom had come from places other than Chatham county. He tried to establish rapport by recalling that his high school football team had played at Pittsboro. At times some in the crowd hissed and booed and stomped so forcefully that the floor of the second floor courtroom shook. Undeterred, Graham pointed out that more than 200 questions about emergency preparedness had come up during the ASLB hearings which had gone on for two years, and the Board had ruled that all relevant questions had been resolved.

At the close of the meeting, the commissioners voted to rescind their approval of the Harris emergency plan pending further critical examination of unresolved issues. Reports said the commissioners feared area hospitals were incapable of treating radiation casualties that could result from a nuclear accident. Doubts also were expressed about the ability to evacuate handicapped residents and school children. Undoubtedly, the commissioners were looking for a release valve for the emotionally charged crowd. The chairman of the commissioners said he had received hundreds of telephone calls about the emergency plan -- only one he remembered as favorable. It came from Governor James Martin.

Later that week, Smith held a news conference in Raleigh. He declared that much of

the public concern was based on misinformation supplied by CASH which continued to repeat allegations that had been thoroughly reviewed in the hearing process and dismissed. He estimated that delay in the operational schedule for the Harris plant would cost \$2 million per day. He emphasized that the Company would continue to work with everyone involved in emergency planning. From that moment, he became the Company's spokesman to the media, for television debates, to public forums. He was the lead cheerleader. And a very good one.

Among the things which CASH did was bring people from Pennsylvania who told horror stories about the impact of TMI on humans and on farm animals. It didn't matter that all of the stories had been discredited by official investigations.

To deal with developments in Chatham county and to avoid similar actions by the other three counties participating in the emergency preparedness plan, the Company organized task forces of employees and retirees in each of the counties. The total quality process was put to an early test. Team leaders were Dick Jones for Chatham, John Monroe for Lee, Bobby Montague for Wake and R. B. Richey for Harnett. They moved quickly to organize employees and develop strategies for mobilizing public and official support for the plant. Decision-making was forced to the local level. Barham headed a coordinating committee to provide corporate support for the county teams.

The Durham city council passed a resolution opposing operation of the Harris plant. Similar actions followed in Carrboro, Hillsborough, Chapel Hill and by the Orange county

commissioners, all outside the CP&L service area. But within CP&L territory, the tune was different. Resolutions affirming the plant came in from Apex, Cary, Fuquay, Sanford, Louisburg, Greenville, Benson, the Wake county commissioners and dozens of other groups. The task forces were effective.

The emergency plan which was maintained by the state's division of Emergency Management in cooperation with local governments and CP&L had been tested in 1985 and judged successful. Both the NRC and the Federal Emergency Management Agency had determined that the plan was fully adequate. Governor Jim Martin made it clear early that if Chatham county chose not to participate in the emergency plan, the state would assume responsibility.

Jones described the effort of the team in Chatham county as one that used people with local connections to reach out to civic clubs, churches and other organizations with accurate information. Members of the task force brainstormed and networked, identifying opportunities and sharing responsibilities. Their goal was "to reduce the noise level" by building understanding of the emergency plan and support for it. They hoped that would enable the commissioners to reverse their decision to withdraw. Bill Stephens who earlier had been manager at Siler City came back to be part of the task force. Joe Gregory, the Company's liaison with the agricultural community, added expertise to answer dairymen who were concerned about the health of their cows. One local meter reader was a member of two churches. He arranged for CP&L presentations at both.

Raleigh Town Meeting

In Raleigh the Company held a town meeting in the Civic Center where a panel of experts was assembled to answer questions. Smith was the moderator. Panelists included the president of Ebasco Services, architect-engineers for the plant; two staff members from the Electric Power Research Institute, representatives from the state division of emergency management and North Carolina State University; and CP&L's Ottilia "Tillie" Hudson, senior engineer in the nuclear fuel department.

It was a three-hour session, broadcast by WPTF. An estimated 1,500 persons attended, including a large number of opponents who directed a barrage of questions, most of them fielded by Smith. His responses drew frequent applause from CP&L employees and friends. He repeatedly emphasized that the Company had put safety above all else in constructing the Harris plant and would do the same in operation of it.

Media interest was extremely high. One newspaper profiled Smith and Eddleman of CASH as leaders in a nuclear war. Eddleman was quoted as saying "we've debated in an indirect way. We have only come toe-to-toe once in awhile. But I like his sense of humor. For example, I quoted Proverbs to him once, something like: 'He who holds back criticism causes trouble.' And Smith came

back, saying he could quote the Bible, too: 'Let there be light!'"

Former Governors Support Harris Plant

Four former governors originated a letter published in The News and Observer. Dan K. Moore, Robert W. Scott, James E. Holshouser and James B. Hunt, Jr., wrote:

"As former Governors of North Carolina, we feel an obligation to speak to the questions of the need for the Shearon Harris Nuclear Plant in our State.

"Some 20 years ago, as North Carolina was beginning to grow vigorously with the emergence of the Research Triangle and other areas, it became clear that our State's full potential in providing jobs and opportunities for our people would be served by a commitment to use nuclear power. That commitment was confirmed by our State Utilities Commission granting a 'Certificate of Public Convenience and Necessity' for the construction of the five nuclear units now in operation or under construction in North Carolina. Nuclear plants in our State and every state are closely supervised by the Nuclear Regulatory Commission in their design, engineering and construction to assure safety. The Atomic Safety and Licensing Board has found that the Harris plant should be granted a license for operation -- a decision reached after years of public hearings regarding public safety.

"Clearly nuclear plants must have adequate evacuation plans in case of accidents or disasters. The plan for the Harris plant has been developed by professionals in government who are trained and equipped to respond to emergencies. The State must continue to insure that these plans are adequate and work with local governments to that end.

"North Carolina needs the power from its nuclear plants for jobs and economic growth.

"We hope that if there are remaining questions about the Harris plant, they will be resolved quickly and in a way to assure its safe operation and efficient generation of power for our citizens."

Opponents contended the 10-mile evacuation zone for which the emergency plan provided was too small in light of the Chernobyl experience. The Company responded in a newspaper advertisement:

"The 10-mile limit is set by the Nuclear Regulatory Commission and the Federal Emergency Management Agency. The limit is based on findings of a joint NRC-Environmental Protection Agency task force. The 10-mile limit was found to be more than adequate to protect the public. All 100 nuclear units operating in this country are subject to the same type of plan. Those who point to the 18-mile evacuation area around Chernobyl and say the 10-mile zone isn't enough here just don't recognize the great difference between the plants. The accident at Chernobyl simply could not

happen at any of our U. S. light water type nuclear plants. For example, in the Harris plant reactor, there is no graphite which in the Chernobyl accident burned and spread radiation. Also, the Chernobyl plant did not have the elaborate and extensive containment systems that the Harris plant does. The concrete containment building surrounding the Harris reactor is 4.5 feet thick. There's steel cladding under that and 11 feet of concrete in the floor. To put it simply, a fully loaded 747 could crash into the containment building and do little or no damage. This type of containment has been tested by the TMI accident and found to work well -- even better than expected."

In early July, six weeks after voting to withdraw from the emergency plan, Chatham commissioners acted unanimously to rejoin the plan. They said their concerns had been addressed. Much of the public protest had been displaced by support for the Harris plant and the emergency plan for it. On October 24 the NRC issued an operating license under which fuel could be loaded and testing at up to five percent of rated capacity could begin.

As a precaution, the Company decided to organize a team of employees under the leadership of Richard J. White, director of communications planning, to visit every residence and business within a 10-mile radius of the Harris plant. Their purpose was to talk one-on-one, identify concerns and answer questions, and deliver personally a copy of the 1987 calendar which conveyed information about the emergency plan. This canvass which involved 150 employees from all across the system resulted in 11,200 contacts and was completed successfully in less than one month.

The last time the Harris plant was opened for public tours was May 3 and 4 when near 2,500 employees and their families visited the facility.

In June demonstrators gathered outside the plant to release 800 helium-filled balloons which carried a message claiming that radiation from the plant could drift as far as the balloons. In November another group gathered in the shadow of the cooling tower to stage a “die-in” to protest fuel loading.

With interest rates dramatically lower than in the early '80s, the Company took advantage of opportunity to lower its cost of capital by refinancing some of its long-term debt and redeeming two issues of preferred stock. Funds from new issues of bonds bearing interest of less than 9 percent were used to retire bonds, preferred stocks and guaranteed notes with interest rates ranging from 11.16 to 16.5 percent.

Hay Hauled to Drought-Stricken Farmers

A prolonged and unusual summer drought brought pain to the agricultural community and an opportunity for CP&L to be a good neighbor. There was neither grass nor hay for livestock. In other regions, farmers were donating hay but someone had to haul it. The Company dispatched George Creech, Jesse Dunn and Richard Southerland to Dutchess county, New York, on a weekend drive to bring three tractor-trailers loaded with 1,200 bales of hay to Oxford. As soon as the trailers

were unloaded, three other drivers -- Randy Earp, Neal Moore and Ricky Prior -- left for Lima, Ohio, on a similar mission. Carlie Massengill joined the driver rotation as the group made five excursions to transport donated hay, about 6,000 bales in all. It was a small way to demonstrate concern for farm customers.

1987: HARRIS PLANT COMPLETED

On January 3, 1987 the Harris plant achieved initial criticality, producing its first heat from nuclear fuel. Nine days later the NRC issued a full-power license, paving the way for the plant to produce its first electricity for customers on January 19. It was declared commercial on May 2. The time that elapsed between fuel loading and 5 percent power production set a record for the industry. The total construction period was more than two years shorter than the average for comparable plants.

R. A. Watson had been vice president for the Harris nuclear project since 1983. A native of Pinehurst and a nuclear engineering graduate of North Carolina State University, he came to

the Company in 1969 as a nuclear fuel engineer and subsequently headed the fuel department.

During its first eight months of operation, the Harris plant had a capacity factor of 67 percent and produced 3.9 billion kilowatt-hours. It contributed to an excellent year for the Company as nuclear plants had a combined capacity factor of 70 percent and yielded 43 percent of system generation.

Brunswick Plant Establishes Record

The oft-maligned Brunswick plant passed a world record for dual-unit General Electric boiling water reactors in November and at year-end set a new record of 180 days of continuous operation. During the previous year, Brunswick 1 had achieved a capacity factor of 86.46 percent, earning an outstanding achievement award from GE. Only four of the 40 boiling water reactor units in the United States exceeded a 75 percent capacity factor in 1986.

Addition of the Harris plant raised the system generating capability to 9,614,000 kilowatts which was supplied by eight coal-fired plants, four nuclear units, four hydroelectric plants, and 33 combustion turbines. Because most of the capacity had been added since 1960, CP&L's generating system was one of the more youthful, modern and efficient in the industry.

Parsons recalled one of the lighter moments during construction at Harris which

emphasized that even burly construction men are kindhearted. While concrete was being poured for the fuel handling building, workmen observed a robin nesting in one of the forms. They worked in other areas until they could wait no longer. The robin had hatched four eggs. Three of the birds had left the nest. Workmen removed and relocated the nest. The mother robin found her nest and successfully cared for the remaining bird.

Mayo 2 Cancelled

In March, plans for construction of Mayo 2 were cancelled. Smith said the Company could buy lower cost power for intermediate and peaking purposes than it could produce from Mayo 2, if required to install scrubbers. Environmental regulators had determined that Mayo 2 would be required to have sulfur dioxide removal equipment -- large chemical treatment facilities called scrubbers. The incremental cost would have been about \$200 million. Mayo 1 had been in operation since 1983, burning low sulfur coal without scrubbers, and had met all air quality regulations. In view of this, Smith questioned the prudence of investing \$200 million to produce only marginal improvements in air quality.

Cancellation of Mayo 2 and completion of the Harris plant ended a mammoth construction program. There were immediate impacts. Annual construction expenditures which had been \$779 million in 1986 dropped to \$469 million. The authorized personnel inventory which had grown to near 9,600 began to shrink. Two hundred positions were dropped. Less than 50 were

occupied. An outplacement program was implemented to assist displaced individuals in finding other jobs, either within or outside the Company. It was a new experience for CP&L.

The inevitable rate cases came again in 1987, the first in three years. To get the Harris plant into rate base and cover other higher costs, the Company elected to take a two-step process in all jurisdictions. This avoided the loss of revenues that might have resulted from delays attributable to the prudence audit. The 1987 cases yielded \$130 million of annual revenue. The question of prudence was deferred to a second round of cases for which the Company made its filing in North Carolina in September, asking for a 13.89 percent increase.

Because of the steadily escalating cost of building new generating plants, the utility which had been the last to complete a plant usually had the higher prices in the Carolinas. This was true for CP&L when the Harris plant became operational. Other companies also had finished their construction programs. Smith, Graham and Lilly recognized that further price increases would be out of the question until the rates of other companies were nearer those of CP&L. Therefore, they embarked on a strategy to reduce costs.

When Lee resigned his position as senior vice president for customer and operating services, Smith and Graham used the vacancy as an opportunity to decrease the number of senior managers. They realigned some responsibilities and, in a lateral move, named Wilson Morgan who had been group executive for corporate services to succeed Lee.

Many people thought of the electric company as a monopoly but Smith spoke often about competitive pressures. Not only were CP&L rates compared to those of neighboring firms. He recognized that energy prices were a factor in choosing new industrial locations, and that gas and oil were vying for the commercial and residential heating markets. He anticipated competition from co-generators, and he envisioned that bulk power suppliers could seek to serve some of the Company's wholesale loads. He saw deregulation proposals as a threat. He understood the need to perform as well for shareholders as other utilities were doing. He was aware of competition for the brightest and more able employees.

1988: RESPONDING TO THE PRUDENCY AUDIT

When Canatom made its report on the prudency audit of the Harris plant construction, it recommended that from \$261 million to \$297 million of the \$3.9 billion investment be disallowed in rates. The report said the larger part of this, approximately \$187 million, could have been avoided by anticipating in 1975 the possible cancellation of units 3 and 4, and redesigning the plant from a single four-unit facility to two plants with two units each.

Further, Canatom auditors contended the plant could have been completed three

months earlier, saving between \$63 million and \$99 million. They also claimed \$11 million of engineering and construction costs could have been avoided.

While there was a feeling of relief that the proposed disallowance was modest as compared to similar audits of other companies, the immediate reaction at CP&L was one of puzzlement as to why it should have known as early as 1975 that units 3 and 4 would not be needed. Dick Jones concluded that the finding was based on perfect hindsight and lack of understanding of how nuclear regulations developed and were implemented in the United States.

State Attorney General Lacy Thornburgh, who later sought unsuccessfully the democratic nomination for governor, contended "imprudent management" added \$856 million to the cost of the plant. His figure came from a study done by a consultant whom he retained. "It should not be the responsibility of North Carolina consumers to pay for CP&L's management mistakes," he said in a news conference.

When the hearing began in April, Smith testified that with completion of the Harris plant, "we have successfully finished the construction of a sound and cost effective generation system capable of supplying our customers' needs for the future. We have appropriate reserve margins and a balanced fuel mix of coal and nuclear. Reaching this point has been difficult and challenging. We have had to make many decisions, frequently under rapidly changing and trying conditions. Since 1970, we have installed about 3100 Mw of nuclear generation and over 2700 Mw of coal-fired generation to

meet customer needs. We feel that our total system capital costs are reasonable and that the Harris plant should be evaluated in the context of the system of which it is a part.

"...We have completed a massive construction program which began in the midst of a crisis over whether we could meet our service area's growing demand and which today provides our customers with adequate but not excessive levels of generation resources.

"The Harris project was undertaken and built in compliance with federal, regional, and state energy and economic policies which all supported the construction of nuclear power plants."

Smith also pointed out that the Harris plant had been financed and constructed under the most difficult conditions ever experienced in the history of the electric industry. The most significant factor in cost escalations, he said, was changing NRC requirements that required more dollars to be spent for design, construction, inspection and documentation. This extended the construction period during years when inflation and interest rates were at record highs, increasing financing costs.

Roland Parsons, general manager of Harris plant completion assurance, elaborated on what he termed "the TMI imperative for the NRC to formulate a more aggressive enforcement policy."

He said the new policy ultimately resulted in a shutdown order being issued for the Zimmer nuclear plant, not because of poor quality, but because the quality of the plant was found to be

"indeterminant". This raised the real possibility that other plants could be completed but not allowed to operate because of "indeterminant" quality. The result was more detailed design, more quality attributes to be inspected, more documentation, and more reviews of the documentation.

McDuffie stated it very dramatically. More work-hours were required for inspection and documentation at the Harris plant than were required for the construction of Robinson 2, CP&L's first nuclear facility..

Parsons illustrated the impact on productivity by relating how inspection of pipe hangers expanded. Pipe-hangers are the supports which are designed to hold pipes precisely in place in the event of an earthquake or similar event. In 1978 inspection of 13 quality attributes was anticipated. As the result of new regulations, the number of attributes to be inspected grew to 51. The efficiency of direct work suffered, too. Small hangers which were being installed in 1980 for 13.9 work-hours each escalated steadily to 35.6 work-hours in 1985. For large hangers, the escalation was from 35.4 work-hours in 1980 to 108.9 work-hours in 1985. Parsons said increased complexity of the pipe hanger erection process consumed the additional hours. There was an increase in paperwork, too. He noted that the paper required to describe and authorize even trivial modifications to hangers and to describe their as-built conditions grew from 3,620 documents during 1983 to 43,965 during 1984.

From the announcement of the Harris plant in 1971 until its completion in 1987, the Company installed about two-thirds of its system generating capacity -- four nuclear units, five coal-fired units and 20 combustion turbines. Smith repeatedly emphasized that what happened with the

Harris plant should be viewed in terms of the total construction program of which it was the last piece.

In the prudency hearings which lasted 38 days, the longest hearing in Commission history, CP&L was fortunate that most of the key players in managing construction of the Harris plant still worked for the Company. McDuffie, Parsons, Howe, Max Thompson and Leonard Loflin were good, credible witnesses because they spoke from firsthand experience. Loflin Had been manager of design engineering for the plant and Thompson had been responsible for administration of engineering contracts and schedules.

When the North Carolina Commission issued its decision in August, it awarded a 9.1 percent increase, approximately two-thirds of what the Company had sought. The Commission included a rate moderation provision, specifying that the increase be implemented in three annual increments. It disallowed \$142 million of investment in the Harris plant, primarily for what it termed a schedule delay of five months. And it ruled that \$180.6 million of the \$3.9 billion investment be treated as part of the cancelled Harris units and amortized over 10 years. The immediate impact was to reduce 1988 earnings by \$1.28 per share.

Dick Jones contended the Commission, in finding there had been a schedule delay, ignored evidence that the Harris plant's construction schedule was over two years shorter than the average for plants going into service in the same time interval.

Smith had some good news for customers and employees. After five rate cases during the 1970s and eight during the 1980s, he predicted the Company would not seek further rate increases for at least three years. Speaking to the New York Society of Security Analysts, he declared "we are now turning our attention from building and financing generating and other facilities, and securing their inclusion in the rate base, to concentrating on the efficient and profitable operation of our system."

World Association of Nuclear Operators Formed

In May the directors approved and encouraged the Company's participation in the World Association of Nuclear Operators (WANO). The purpose of WANO which had four worldwide centers, including one in Atlanta, was to promote the safety and reliability of nuclear power through exchange of information by plant operators. The initial meeting was in Moscow, providing Smith an opportunity to visit Chernobyl and see firsthand the results of the accident there.

Smith described WANO as being closely patterned after the Institute of Nuclear Power Operations insofar as its mission and organization were concerned. He emphasized that it was an organization of operators of the world's 400 nuclear plants, not an organization of governments.

CP&L also signed an agreement with Tohoku Electric Power to exchange technical and managerial information. The Japanese utility was about the same size as CP&L and had one

nuclear plant, a boiling water reactor that was a later model than Brunswick.

1989: SHRINKING THE ORGANIZATION

Downsizing, something which the Company had never experienced, was part of the post-construction adjustment. It began with a voluntary early retirement program which was offered during the last half of 1988. There were 223 persons who chose to end their careers early. On the heels of the early retirement activity came the "OA", organization analysis.

The project quality team chaired by Howe had recommended a top to bottom analysis of positions in the authorized personnel inventory (API). Cecil Goodnight, vice president for employee relations, was a member of the team.

Utley who was nearing retirement volunteered to lead the API task force. On the task force with him were Goodnight, Wilson Morgan, senior vice president for customer and operating services; Eury, senior vice president for operations support; Norris Edge, manager of rates and service practices; Jerry Kirk, manager of the TQ department; and Walter Simpson, head of the management services department. Kirk was assigned to be OA project manager. A consulting firm was retained to provide a framework for the study and to guide department managers in planning and carrying out the

analysis. Department managements identified and prioritized their work, and decided on the more efficient organization with which it could be accomplished. Meanwhile, the employee population was decreasing through attrition and controls on filling vacancies.

In a report to the Company's directors, Kirk stated the goals of OA were to reduce operating costs while maintaining or improving the quality of operations and services, and to incorporate the principles of the OA into on-going business planning processes. He said the goals would be achieved by eliminating unnecessary, low priority work; streamlining needed work, and better aligning functions and activities organizationally.

As OA entered the final stages, Smith met with department managers to consider the information that had been collected and how it would be used to improve the Company. He wore a pink shirt. Later, he explained. "I put on a pink shirt because it was different. I usually wear blue or white shirts. And so that morning I changed. I put on a pink shirt to talk with you because we had some real challenges before us and we had to change."

There was stress and anxiety among employees as August 28 approached. On that day results of the OA would be known and outplacement centers would be activated to help those whose jobs were eliminated. The outplacement centers offered counseling, job fairs, assistance with preparing resumes and other support.

In spite of the preparation, there was widespread pain when those whose jobs were eliminated got the message from their supervisors. Separation from the workplace was immediate. It was a shocking move in a company where job security had been taken for granted as long as one performed satisfactorily. Employee morale suffered. Approximately 570 individuals were outplaced. The outplacement package included job search assistance, administrative leave, severance pay based on years of experience, and continued medical, dental and life insurance.

Since May 1988, the Company had reduced its work force by about 1,250. In the new organization, there would be 8,300 positions. Also eliminated were jobs of about 1,000 contract personnel who maintained buildings, trimmed trees, provided security services or performed other specific tasks.

Smith expressed regret that many fine employees were leaving the Company. "It is one of the necessary results of an organization analysis such as this that as cost reductions are achieved, some people are outplaced. The work force reduction will benefit the Company and our customers over the long term by helping to offset increasing costs in operations... We estimate the future savings from the reduction and related changes in operations to grow to a minimum of \$70 million annually."

Following the OA, the Northern division which had been the Company's fastest growing area was divided to create a Raleigh division headed by James Massengill, giving the Customer and Operating Services group six divisions. Jerry Kirk headed the Northern division.

Margaret S. Glass, an attorney, was elected treasurer.

Eury and Watson Succeed Utley and McDuffie

In anticipation of the retirements of Utley and McDuffie, Lynn Eury was elected executive vice president for power supply and Al Watson senior vice president for nuclear generation effective April 1. R. B. Richey succeeded Watson as manager of the Harris nuclear project. Jim Davis was senior vice president for fossil generation and power transmission, a position into which he had moved in 1986.

Eury's career at CP&L began as a student employee during the summers of 1957 and 1958. Upon his graduation from North Carolina State University in 1959, he came to the Company as a junior engineer. Subsequently, he was manager of system operations and maintenance, vice president for system planning and coordination, senior vice president for power supply and later for fossil generation and power transmission. He completed the advanced management program at Harvard Business School, the EEI executive management course, and the senior reactor operator training program. Associates considered that he had been on a fast track.

Hurricane Hugo

Joe Turner, southern division vice president, went to bed on September 21, 1989,

knowing that South Carolina was in the path of Hurricane Hugo. He wondered how his inexperienced storm coordinator, A. C. Page, would respond to his first emergency. What he saw when he arose the next morning was unbelievable. Four big pine trees had fallen on his residence. Four others were down on the lot. The only vehicle he could remove was his "little red truck". He headed for work.

Everywhere he looked there was devastation. Still, he had no idea that what he saw in Florence was not unlike what had happened over the entire southern division. Hugo had caused a big mess, and left virtually all of CP&L's 140,000 South Carolina customers without electricity. Damage extended into North Carolina, too, leaving an additional 45,000 customers in the eastern and central divisions without power.

Six transmission lines which served Sumter were down. The city had no water or sewage service. It was, Turner said, as much like a battle zone as any area he had ever seen. "Imagine a tornado 100 miles wide and 300 miles long, and you begin to get the picture," he explained.

Over the next ten days, helped by crews from as far away as Maine, CP&L workers logged 16 hour days to restore service to those customers who were able to accept it. There were 500 crews totaling about 1,600 persons putting up poles and stringing lines, supported by hundreds of others, notably the folks who were locating materials and delivering them.

At Sumter an aerial inspection revealed that the quickest way to get some electricity

back to the city was to repair a South Carolina Electric and Gas transmission line from the south that interconnected with CP&L. With the cooperation of SCE&G, crews repaired that line first. The only toilets were portable units. There was no hot water for warm baths. People looked for ways to help. A funeral home erected several tents outside the local CP&L office where food could be served. Mickey Denham, a dispatcher from Florence who previously was in Sumter, set up a cooker from which he served steaks and venison. Other employees and customers brought grills and foods from their freezers. Bottling companies supplied soft drinks. Water and ice was brought from Florence. Grocery stores contributed frozen and canned foods. It was a giant cookout that lasted for days. Other localities did the same kinds of things to assure that workers had food.

On the second morning after the storm, Turner called Wilson Morgan in Raleigh. He asked him to come down and see the situation. Else, Turner said, "you will never understand what is going to be requested for repairs."

It was Sunday. Morgan traveled to South Carolina. He said he had seen the damage of Hurricane Hazel, the great ice storm of 1959, but nothing to approach Hugo. He was impressed by the absolute devastation in the Kingstree-Sumter area, and with the way employees ignored damage to personal property to get the power back on. "It is hard," he said, "to visualize how difficult it is to work under conditions where you have no water, no lights nor any conveniences for days."

Lester Misenheimer, manager of the transmission department, noted that crews,

working around the clock in difficult conditions, restored service without a personal injury. That made restoration of the system in so short a time all the more remarkable.

"We had to do things we never anticipated," Turner recalled. "We decentralized. We told people to do what they could see needed to be done. They responded. It expedited the work."

What happened at Turner's home probably occurred with countless other CP&L families. An anxious son, seeing news accounts of the storm, came home to help. A crane removed the trees from the house. Wife Betty had one surprise: photos of the home taken the day before and the day after the storm on the same roll of film.

Damage to the Company's transmission and distribution system was estimated at \$15 to \$20 million. The Federal Emergency Management Agency assessed Hugo as the most expensive individual disaster in United States history, putting damage at \$6 billion. It said 1.8 million people were impacted and 500,000 were evacuated.

Charlie Walker writing in the Kingstree (S.C.) News gave a colorful description of Hugo's damage and the good deeds which followed. "Just down the road from my house stands Herbert McCutchen's grocery. Mr. Herbert's grocery is his life. But without electricity he's like a preacher without a collection plate. Doris McKenzie's yard was the showplace of Sandy Bay. She has 42 trees down in her yard.

"Ice has replaced crack as the most valued item in Williamsburg county. All you have to do is mix electricity and water and -- presto, you have ice. But when you don't have either electricity or water, that makes ice worth its weight in gold.

"Of all the places I have visited," wrote Walker, "Greeleyville is the most devastated. When you have lived in Williamsburg county for 40 years you think you are shock proof, but what I saw in Greeleyville was terrifying.

"I have seen movies and photographs of this kind of destruction. It is one thing to look at it on the screen or in your newspaper. It's another to be surrounded by it. I spoke to Mayor Doris Browder at her headquarters.... Across the road all those beautiful trees in the park that served as a canopy for Flag Day lay broken like tobacco sticks. The old Greeleyville Elementary that housed so many memories is shattered. Houses are beaten into the ground and roads are impassable. It is hell without fire.

"All over Williamsburg County I have seen the Golden Rule in action. We didn't have any water, but the demand for the milk of human kindness didn't exceed the supply." Walker wrote of soft drink and beer trucks bringing water and ice instead of their usual merchandise, and of other trucks bringing provisions from distant places.

An article in the Greensboro (N.C.) News & Record, reporting on the situation in South Carolina, said "Dinney Dukes calls her sister, Lisa. She's crying into the telephone, 'my lights are on, my lights are on!' And her little boy dances around shouting, 'the lights are on, mommy!' Things we take for granted become diamonds when they are no longer there."

Forecast Indicated Slower Growth

In December CP&L directors adopted a forecast which anticipated demand growth over the next 10 years at a rate of 1.9 percent annually. Growth in energy consumption was projected to be 2.1 percent. The Company was adding industrial customers at a slower pace. Textile, chemical and paper plants accounted for two-thirds of the industrial energy sales. The generation plan deferred new base load capacity until after 2000. What a difference the decade had made!

During the '80s, total utility plant grew from \$3.883 billion to \$7.575 billion, capitalization increased from \$2.939 billion to \$5.294 billion, system capability rose from 7,796 megawatts to 9,584, energy sales climbed from 28.7 billion kilowatt-hours to 38.6 billion, and revenues jumped from \$926 million to \$2,480 million. Similarly, the average investment per customer went from \$5,355 to \$7,970, the number of customers from 725,017 to 950,492, and the average revenue per kilowatt-hour from 3.20 cents to 6.33 cents. The average annual bill for residential customers rose from \$481 to \$987 while energy consumption reached 12,419 kilowatt-hours, up from 11,785.

Investment per kilowatt of generating capacity, based on original plant costs, had dropped to \$105 in 1968. It rose to \$249 with the completion of Mayo 1 and to \$588 with completion of the Harris plant.

More importantly, the Company had achieved a high degree of stability. The big construction program with its demand for huge blocks of capital was finished. Personnel cutbacks were behind. Managers were a more youthful group. The Company faced a new decade better positioned to control its destiny and embrace fully its new corporate culture. After 20 turbulent years, dominated by nuclear and rate issues, its activities generated less interest for the media.

TO BE A PREMIER UTILITY

1990 - 1992

The goal for the 1990s was to make CP&L a truly premier utility. Sherwood Smith expressed his vision in 1990 annual management information meetings when he emphasized the

importance of being successful, "not just of surviving, but being one of the very best electric utilities in the United States and being recognized as that." He defined a premier utility as being in the first quartile and, when possible, at or near first place.

Six critical success factors had been identified to guide business planning, goal setting and strategy options. They were: 1) providing a reliable source of electric energy; 2) operating efficiently and controlling expenditures; 3) managing the growth of electricity sales; 4) positioning rates competitively; 5) operating in a fair and reasonable political and regulatory climate; and 6) achieving total quality.

In a meeting with senior nuclear managers early in 1990, Smith declared the biggest part of attaining "this vision depends upon what happens in our operation of nuclear facilities. The dollars are just that big, the nuclear operation is just that complex, safety and environmental concerns are just that great, and the demands of regulation and the public are just that challenging.

"Because we built the last nuclear plant in the Carolinas, our rates are higher than our neighbors. This will be the case for years to come. It is like being in a horse race carrying the biggest handicap.

"The race for excellence which we are in has no finish line. Everybody knows what happens to people and organizations who race but are left behind. I don't want us to be also-rans.

Some other nuclear plants have been put out to pasture for years and come back after paying a terrible price for their companies."

He cited another company's nuclear plant, saying it was out of service for two and one-half years unnecessarily, "not because they had not spent enough money, not because they did not have experienced people, but because of an attitude.

"Someone who is well-grounded in his field, knows it cold, usually has a lot of self-confidence and maybe thinks that technically he is right can fail to adapt to a changed environment, fail to see the big picture, fail to recognize the role of others on the team, fail to accept accountability, and fail to confront his own shortcomings. All of us are capable of such failings, unless we constantly are alert."

Smith emphasized the importance of continued improvement. He said NRC was measuring one company against another as all sought to improve. Thus, the target of excellence was moving. His comments were prophetic.

Smith told the nuclear managers that "things possibly could happen in other areas to hold us back from success." But he considered that unlikely.

In a move to strengthen the nuclear management team, Al Watson, senior vice

president for nuclear operations, employed Gerald E. Vaughn who had been manager of nuclear stations for Duke Power and later was vice president of nuclear operations for Houston Lighting and Power. Vaughn joined CP&L as manager of the nuclear services department. Consistent with the Company's plan for rotating nuclear managers, in early 1992 Vaughn replaced R. B. Richey as vice president of the Harris nuclear project. Richey succeeded Russell Starkey as vice president of the Brunswick nuclear project. Starkey who had been elected a vice president in 1989 moved to the nuclear services department.

Favorable Fuel Costs

As reflected in the average cost per million btu for all fuel, the Company's nuclear plants had performed well during the previous five years. This cost had trended downward from a high of \$1.67 in 1984 to a low of \$1.24 in 1987. The low fuel cost continued in 1990 and 1991. Nuclear plants supplied 46 percent of the Company's total generation in 1991. Coal-fired plants set a reliability record of their own: equivalent availability of 89.8 percent, as compared to an industry average of near 80 percent.

With this kind of plant performance and the savings which flowed out of the organization analysis, the Company was successful in improving earnings. One thing it had been doing to trim expense was take advantage of lower interest rates to refinance its debt. In 1991 imbedded cost for debt was down to 8.04 percent, the lowest it had been since 1978. Market value of the common

stock at the end of 1991 was 1.64 times book value.

Senior Management Changes

Two key executives retired in 1990 -- Edward G. Lilly, Jr., executive vice president and chief financial officer, and Wilson W. Morgan, senior vice president for customer and operating services. Lilly earned respect and credibility in the financial community as he successfully raised the money to get the Company through its difficult construction years. During the period of Lilly's financial leadership, capitalization increased from \$954 million to \$5.3 billion. Morgan was a 40-year employee who spent most of his career in operating and engineering before heading the corporate services and the customer and operating services groups.

Charles Barham became executive vice president, chief financial officer and a director. Richard Jones was elected a senior vice president and elevated to group executive for legal and regulatory. Jones in turn was succeeded as head of the legal department by Ray Starling who had returned to the Company in 1990 after three years at Hawaiian Electric. Starling had an undergraduate degree in mechanical engineering from North Carolina State University and earned his law degree at Wake Forest University.

Norris L. Edge succeeded Morgan. He began his career with the Company in sales, subsequently served as sales manager in Sanford and Asheville, and was manager at Siler City. He was

chosen by Behrends as a key player in the expansion of the rate department in the early '70s and later headed that department.

Vaughn and Richey were elected vice presidents in 1990 along with R. Michael Jones, public affairs; Larry Boyer, customer support; Jerry Kirk, northern division; and Jim Massengill, Raleigh division. Three others were elected vice presidents in 1991: R. J. White, corporate communications; Charles R. Dietz, Robinson nuclear project; and Starling, head of the legal department. A. M. Lucas, manager of nuclear engineering, was elected a vice president in 1992.

There was no plan to add baseload generating capacity before the turn of the century. Expensive construction was avoided by contracting with Indiana Michigan Power to buy 250 megawatts of capacity for 20 years, beginning in 1990; and with Duke Power to purchase 400 megawatts of firm capacity beginning in 1993 and continuing for six years. The next additional capacity which the Company had planned for its system was three more combustion turbines at the Darlington county plant. They would have combined capacity of 225 megawatts and were scheduled for 1996. By relying on combustion turbines which required relatively short lead time for purchase and installation, the Company maintained flexibility to adjust its expansion to changing consumer demand and also reduced its capital outlay.

Strategy for Achieving Rate Equality

Dick Jones outlined the strategy to bring rates in line with neighboring utilities: "We need to hold our base rates flat, and try to reduce our fuel costs per kilowatt-hour through attaining high capacity factors, while our neighbors over time increase their rates because they have to build more plants than we do or because they operate less efficiently than we do."

He said that in addition to working smarter and at lower cost, "the major way we hold our rates down is by minimizing the number of generating plants we have to build."

Therefore, a key of the strategic plan was to sell more energy while managing demand, essentially continuing the conservation and load management activity initiated during the 1980s, but with more emphasis on selling off-peak. For residential customers, key components of the expanded activity were an aggressive effort to promote the installation of high efficiency heat pumps, including the identification of quality heat pump dealers; renaming of the customer water heater and air conditioner control program to "EZ-\$64", an expanded loan program to help customers finance energy management improvements, and promotion of Safeshine lighting.

Installations of heat pumps and Safeshine lighting far exceeded the goals for 1991. But Jones emphasized that a large amount of off-peak capacity from coal-fired plants remained. Selling it could improve load factor and profitability.

In the industrial and commercial sector, marketing efforts continued to focus on energy-efficient practices and shifting energy-usage to off-peak hours, benefitting the customer with lower prices and the Company with lessened demand. A Target Business Recruitment program focused on attracting new industries whose major power needs would occur during fringe or off-peak periods. To help attract new industry and create jobs, the Company in 1990 invested \$1 million in a speculative building in the Sumter, S. C., industrial park. Graham said the Company believed the project would enhance regional growth and development. The building was sold to a manufacturer of precision bearings.

Employee Volunteerism

At the 1992 management information meetings, Graham commended employees for financial support of United Way and Project Share and for their participation in volunteer activities. Acknowledging that this participation was motivated by sincere desire to help those in special need, he said it also reflected well on CP&L. "It is not easy for adversaries to portray the Company as arrogant and greedy when most people know that we demonstrate in so many ways that we care and that we are willing to contribute and to work and make life better for others as well as ourselves."

One of the newer volunteer activities focused on state parks. In 1991 the Company announced its "Adopt State Parks" program, pledging \$144,000 over a four-year period to help

preserve and improve 34 state parks in North Carolina. The program included a challenge campaign to get other businesses to help support the parks, and the enlistment of volunteers to help with specific activities.

After one year, employees from CP&L had given their time to assemble 120 picnic tables for two parks, survey boundary lines, design a footbridge, and produce audio tracks for a museum. The department of parks and recreation estimated the support of CP&L and its employee volunteers was worth more than \$130,000 during the first year. Employees in South Carolina started a similar program which focused on the Cheraw State Park.

Established volunteer programs included the United Way, the Company's Project Share, cutting firewood for needy families, helping in school activities and hosting American Red Cross blood drives. Raleigh area employees completed a new project in 1992 -- building a Habitat for Humanity house with materials bought by CP&L.

"Deregulatory" Legislation Opposed

Graham, who was a former president of the Greater Raleigh Chamber of Commerce, outlined the Company's opposition to two legislative initiatives in Congress. The first would amend the Public Utility Holding Company Act to allow unregulated generators with no obligation for public service to enter the power generation business. "While we are under a legal obligation to serve, these

generators would be unregulated and would have an unfair competitive advantage that could adversely affect service reliability." Smith was leading a segment of the industry which opposed the legislation.

The second objectionable legislative initiative provided for mandatory transmission access, a measure which would require a utility to transmit power generated by others, even from outside its system. Graham said "this would permit industrial customers to pick and choose among suppliers, leaving facilities already constructed to serve them to stand idle. Other customers consequently could be burdened with additional costs."

Proposed under the umbrella of deregulation, the two measures produced a deep division within the electric industry. Smith testified before a Department of Energy hearing in January 1990. He said:

"The type of 'competition' now advocated by some who would deregulate generation (and substitute non-utility generation for utility-owned and operated generation) would not result in what might be called 'pure competition,' because you would have utilities still subject to the franchise duty to serve the public but having the burden of being required to buy a competitor's product and deliver it to customers at the expense of using their own product; whereas the non-regulated 'competitor' has no franchise duty to supply the public. My message is simply 'stop, look and listen' carefully before advocating policies in the name of competition that could drastically alter our existing efficient, reliable and economic electric system. No one has the ability to predict exactly how

deregulation and this new form of unequal competition or partial deregulation would work out. Certainly the experience in other deregulated industries is not a guide for the electric industry which has a very different structure and a unique product or service."

Smith also testified before a Senate committee in 1991, describing the proposed amendment to create a new class of "Exempt Wholesale Generators" (EWG) as an effort by proponents "to reap larger returns on their investments in these new plants than would be permitted by state regulators were the new facilities instead built by electric utilities under regulation... Unfortunately, the higher returns can come from no source other than the pockets of electricity consumers."

He cautioned that transmission "access" proposals are a first step toward full-blown retail wheeling which would permit EWGs to make direct sales to large industrial customers. "We strongly oppose any system of mandatory wheeling," he emphasized, because it would jeopardize the financial health of electric utilities and their smaller customers. Smith warned that the proposed legislation would "create loopholes that would deform --not reform-- the Holding Company Act."

Graham described another legislative development which could resolve an old and very important issue. He noted that while the Department of Energy had spent \$3.5 billion for development of a repository for spent fuel from nuclear power plants, its efforts were being frustrated by opposition from the state of Nevada, the location of the repository. Congress was considering legislation to

enable DOE to move ahead with the Yucca Mountain repository over objections of the state. Until the repository was opened, CP&L faced the continuing need to ship spent fuel from Robinson and Brunswick to the Harris plant. Congress subsequently passed this legislation.

Total Quality as the Vehicle to Premier Status

Barham also spoke to managers in 1992, declaring that "our shared vision is to be recognized as one of the very best electric utilities in the country by those groups of people who can and do influence the success of our business: our investors, our customers, our employees, our regulators, and our government representatives. These groups of people are in a real sense our constituents....

"The premier utility concept is based upon a relative, not an absolute, standard. It is the absolute performance of other companies which establishes performance norms and, in turn, the performance expectations of our constituents. We are pursuing a moving target, both in terms of absolute performance and constituent expectations. What may be considered best in class today may not even be above the norm next year.

"Total quality is the vehicle we have chosen to carry us to premier status.... During the last two years we focused on internal customer satisfaction and experienced a nearly 20 point increase over that period as measured by our principal customers.

"By early summer, every employee will have completed the training and the entire Company will be moving together utilizing Effective Performance Management (EPM) to leverage our corporate performance." One aspect of EPM was to link individual and corporate goals by involving individuals in setting their personal performance expectations and by making semi-annual performance reviews.

The former total quality department was integrated into employee relations in 1990 under the leadership of Fred Day, manager of total quality performance. A new TQ steering committee was established in 1991. Day was chairman. Members were C. V. Bailes, fossil operations; Larry Boyer, customer support; Cecil Goodnight, employee relations; Emerson Gower, southern division; Scotty Hinnant, Harris plant; Cindy Smith, information services; and Gerald Vaughn, nuclear services. Barham was senior management sponsor for the committee which was asked to look for additional opportunities for quality initiatives and to provide line management with perspective and direction for planning.

At the end of 1991, there were at work across the Company 657 quality teams, including cross-functional groups. They involved about 4,000 employees.

Total Quality Awards

In March 1991 the Company began the recognition phase of its total quality program by honoring five individuals and nine teams with cash awards for making significant contributions to the Company's business success. Each individual received \$3,000. Team members also received \$3,000 each except that where a team had more than five members a total of \$15,000 was divided equally between them. A look at what recipients of the first awards did provided an insight into the results which total quality was producing.

Individual winners of the first annual awards were George Attarian of nuclear engineering for increasing the effectiveness of the department in meeting regulatory requirements; Jane Hurst, division stores supervisor for the Raleigh division, for streamlining the stores operation and significantly reducing manpower; Larry Jernigan of technical services for expediting the repair of a feedwater discharge valve at the Sutton plant, thereby shortening an outage; Galen Jones of employee relations for developing and implementing the very successful human resources program to support the organizational analysis; and D. Edward Quigley of the Brunswick nuclear project for diagnosing and correcting two problems experienced during unplanned outages.

Awards were given to the Baseline Rate Contract team from the customer support department for developing a process that simplified the evaluation of contractor bids for line construction and right-of-way maintenance. The process was implemented in all divisions with significant dollar savings. Members of the team were Bill Ashe, Ron Brady, Buddy Cline, Tommy Harrill, Terry Hill, Christine Jones, Jesse League, Bennie McLeod, Dan O'Hannon, Bobby Simpson,

DeWitt Smith, Billy Smith, Joe Sutton, Wayne Thompson, Gary Tyner and Marvin Weant.

The Clean Air Review team was recognized for its review, analysis and assessment of the impact of the proposed 1990 Clean Air Act amendments. The team's work supported the successful efforts of the Company's director of federal public affairs, Emerson Gower, and the electric industry to moderate the legislation. Team members were Gower, Dave Killen, John McGowen, Cal Ogburn and Dan Roeder.

A Coal Hardness Test team from the fossil fuel and fossil operations departments determined from tests at the Roxboro plant that there was a definite correlation between coal hardness and energy output. This finding and the performance results from a full-scale operating plant represented a major breakthrough in understanding the impact of coal hardness. The fossil fuel department began using the data in negotiation and administration of coal contracts to assure that the hardness characteristics of coal were reflected in pricing. The team included Gary Pope, Bobby Currier, Mike Walker, Chester Bowen, Larry Marynak, Jeanette Watson, Danny Satterwhite, Shirley Williams and Jerry Boyd.

The Faison Iceberg team from rates and energy services cooperated with the North Carolina Alternative Energy Corporation to design, procure, install and successfully demonstrate a prototype thermal energy storage system for cooling farm produce. On the team were Thomas L. Davis, John P. Shell, Joe Gregory, Pamela Nettles and Alex Hobbs.

The Leveraged ESOP team, primarily from the treasury department, developed and implemented a leveraged employee stock ownership plan, a \$300 million transaction that would reduce the Company's tax cost in each of the next 15 years. The approach was recognized nationally as a creative and innovative model for utilities. Team participants were Murray F. Gould, Masceo S. DesChamps, Kenneth W. Hooper, John B. Gripman, Jim Bass, Henry Oehmann and Adrian Wilson.

The Pipe Replacement Project team from the Brunswick plant significantly reduced the time required to complete an outage task, setting a world time record for accomplishing the work and thereby saving the Company significant dollars. Roy Johnson, Dennis Cooper, Jeff Ferguson, Lou McGary, Karl Neuschaefer, Rick Smith and Hal Wall were on the team.

A Project Quality team from fossil operations reduced operating and maintenance expenses at the Roxboro plant by lowering the inventory of spare parts for turbines and generators. The team also discovered that software available from the support services department would enable further cost reductions. The two software packages were installed at Roxboro and later replicated at other fossil plants. On the team were Mark Frederick, Bayard Crumpton, Betsy Wagstaff, Alan Pruitt, David Sumner, Larry Byrd, Ronny Hicks, Donald Harris and Jonathan B. Skowvron.

A team from Cary Line and Service challenged the policy on same-day service to customers, confirming that next-day service met the needs of inspectors, builders, customers and other

parties. Thus the group of line and servicemen while searching for a safer, more cost effective work practice successfully questioned a Company policy. The team included Ricky Pope, Dave Watts, Wayne McKoy, Mark Baker, Don Holland, Elbert Spence, Roger Lewter and Doug Lewis.

The Transmission Conversion team formulated designs that minimized the need for additional right-of-way along existing lines. The new design provided improved service and reliability at about half the cost of an earlier design proposal. Paul A. Cox and Robert D. Fulmer were the team.

Eury gave his view of the impact of total quality at CP&L: "People draw together when there is a driving, compelling need. Issues cause people to unite. Competition has become such an issue that people have done things here they would never have believed they could do."

Great Ideas at Work

In May 1991, the Company implemented the recommendation of one of its original section manager project quality teams by establishing the Great Ideas at Work program. The team led by Bill Stocks had the assignment of offering recommendations to enhance the process for identifying waste and inefficiency. Great Ideas came out of its report. Jackie Clements was the first director. She described Great Ideas as "employee driven," a reflection of the changed corporate culture in which individual employees were encouraged to think of value added by the work they did and how the work

could be done more efficiently. She saw it as a great motivational tool.

By July 31, 1992, over 1,600 ideas had been submitted. Of these, 359 had been implemented at a net saving of \$15 million. Hundreds of other ideas remained to be evaluated.

Three employees in the fossil fuel department received the first cash awards for a great idea. They proposed selling excess inventory of propane which the Company had in storage at Tirzah, S. C., to propane suppliers, and did so at a benefit to the Company of \$225,000. Judi Brettschneider, Reid Stephenson and Shirley Williams each received a \$5,000 award.

An individual award of \$15,000 was made to Patrick Riban of the technical support function at the Brunswick nuclear plant. He suggested a streamlined process for testing safety relief valves which resulted in reduced expense for spare parts and vendor labor. An audit showed that implementation of his idea produced savings in the first year in excess of \$300,000. Riban's \$15,000 award was the maximum under the Great Ideas program. The program paid up to 10 percent of the audited first year savings to the originator of a suggestion.

Nuclear Plant Performance

Overall performance of CP&L's nuclear plants was just below the 50 percentile for 1990 and just below the 60 percentile in 1991. Al Watson, senior vice president for nuclear operations,

said the index included 112 United States nuclear units operated by more than 50 utilities. He projected that CP&L would reach the 70 percentile in 1992.

When the Harris plant reached its fifth anniversary in 1992, the News and Observer reported that in 1990 it had been one of the five most efficient nuclear plants in the United States. Federal regulators had fined it only twice for safety violations -- far below the national average. Noting the criticism which accompanied its construction and start-up, the newspaper reported "most of the criticism has abated." The Robinson nuclear unit had performed satisfactorily.

But problems had surfaced at Brunswick. The plant had been shut down in the summer of 1990 after 14 of 20 reactor operators failed to pass requalification examinations. In Southport and Wilmington, newspaper reports were caustic. One headline read, "CP&L operators in the dark." A three-week outage ensued while the training program was requalified and the operators given further training. An NRC report for the year ending in September 1990 said the Brunswick plant's engineering and technical support -- which includes operator training -- was the one area needing attention.

The problems at Brunswick were made more difficult in some respects because news about them dominated what the public saw and heard in the media about CP&L. Little else was happening in the Company to claim headlines.

On a visit to Brunswick in October 1991, Dr. Ivan Selin, chairman of the NRC, said it had been "sort of an average" plant. But he noted that CP&L had "clear commitments" to long term improvement.

Poor SALP Report

In early 1992, the NRC's Systematic Assessment of Licensee Performance (SALP) gave Brunswick poor marks. There was harsh criticism of management, followed by an in-depth inspection by NRC teams which looked at every aspect of plant operations that had been addressed in the SALP.

In April a Company inspection revealed that interior walls in the diesel generator building did not meet seismic qualifications. These were not load-bearing walls. Their only function was to act as shields between the generators. The plant was withdrawn from service on April 21. There followed an extensive investigation to verify compliance with seismic qualifications in other areas of the plant.

The regional NRC administrator in a June 23 letter emphasized the need for "effective

changes in the philosophy of operation" as well as for upgrading the physical plant.

In July the NRC decided to put Brunswick on its watch list of troubled plants, promising to give it closer scrutiny. Seven units of other companies were on the watch list. Brunswick was classified as "category two" which meant it was not mandated to remain shutdown. NRC's executive director for operations wrote:

"Brunswick's performance has been declining as evidenced by repetitive work control failures, personnel errors and ineffective management oversight. The material condition of the plant is degrading due to inattention to maintenance, excessive corrosion conditions and lack of attention to detail by management."

Lynn Eury, executive vice president, said the Company was committed to spending \$225 million over the next five years to correct the problems which it had identified and the NRC had cited. Since January 1990 Brunswick had been fined more by the NRC than any other nuclear plant. Its civil penalties for the period totaled \$500,000. Harsh as that may have sounded, the plant was never unsafe.

Through the years, as Smith had observed, the nuclear industry had moved steadily along an upward course, continually improving performance. Brunswick had been on an upward track, too. But with all its improvements, the plant had not closed the gap between its level of

performance and that of the industry. It needed to make a "jump step".

Media Criticism of Brunswick

With Brunswick scheduled to remain out of service until late 1992, some feared the scene was set for a repeat of events of the early 1980s. The daily \$400,000 added cost for fuel which the Company incurred was a significant expense. To recover it, the Company would have to seek regulatory approval for an adjustment in the fuel charge.

The Wilmington (N.C.) Morning Star, a long-time critic of the Brunswick plant, editorialized on June 16: "At some point, is the NRC going to conclude that this plant is snake bit -- badly built, badly managed -- and that it ought to be closed?if there's any comfort at all in the latest discoveries, it is that the NRC seems to realize it has a king-sized problem on its hands."

The editorial page cartoonist for the News and Observer depicted CP&L stirring in a big pot of Brunswick stew.

To counter negative public impressions about Brunswick, Eury spoke to a breakfast meeting of the Wilmington Chamber of Commerce. "This plant has not consistently met the high standards we set for our nuclear plants," he acknowledged. "Our Robinson plant is a solid performer. Our Harris plant is a top performer.

"Brunswick has had periods of excellent performance. It set a world performance record in 1987 for boiling water reactors. There have been periods of unexpected downtime ... and improvement efforts that fell short. Through all this the plant has never jeopardized public health and safety. We've continued to make improvements. But what was good enough in the 1970s or even in the 1980s is not good enough today."

Eury spoke of the stepped-up improvement effort that was underway. He said it focused on reducing the backlog of tasks such as preventive maintenance items, upgrades of the plant's physical condition and upgrades in records management. He noted that additional resources had been committed to catch up on maintenance, to improve plant designs, to improve work procedures and processes, and to raise the skills of employees.

In late July, Watson, the Company's senior vice president for nuclear operations, in a letter to the regional NRC administrator, outlined the Company's plan for remedying the deficiencies at Brunswick and restoring the facility to operation. The corporate plan would benefit the Harris and Robinson plants, too.

An interesting contrast was the staffing of nuclear and coal-fired plants. Brunswick had 999 company employees and 558 contractors; Robinson 575 employees and 252 contractors; Harris plant had 645 employees and 305 contractor personnel. Roxboro had 237 authorized positions

and Mayo 71. The four nuclear units had slightly less capacity than Roxboro and Mayo combined. Contrary to the Company's early expectation, nuclear units had proved to be personnel intensive. Nuclear plants also required support of a large corporate staff of engineers and scientists. To overcome the backlog at Brunswick required the temporary commitment of hundreds of additional corporate and contract personnel to the site.

Complying with the Clean Air Act

Availability of its nuclear capacity was expected to be a major advantage for the Company as it prepared to comply with the Clean Air Act Amendments of 1990. The Act imposed strict air emission standards but did not specify how a utility must comply. Options included the use of low sulfur coal, installation of new equipment, use of other generation sources such as nuclear, and buying allowances from other utilities. Allowances are units of sulfur dioxide emissions allowed a company. In the 1990 annual report to shareholders, Smith said CP&L's "use of nuclear power and low sulfur coal has put us in a good position. Our sulfur-dioxide emission rate remains one of the lowest on the East Coast. We are already in compliance with the major requirements of Phase I of the Act, to take effect in 1995."

The legislation required installation of nitrogen oxide burners on coal-fired plants by 2000. To begin preparing for the changes that would be necessary, the Company established a Clean

Air Act compliance project and set up a steering committee chaired by Jim Davis, group executive for fossil generation and power transmission. Others on the steering committee were Ron Coats, manager of technical services; Peggy Glass, treasurer; Dick Jones, group executive for legal and regulatory services; Bobby Montague, vice president for system planning and operations; and Rick White, vice president for corporate communications.

A project committee also was established. It was chaired by Max Thompson who was designated project manager. A veteran engineer, Thompson had been involved in managing construction of the Harris plant and was project manager for moving spent nuclear fuel from the Robinson and Brunswick plants to the Harris plant. More than 65 persons were involved in the Clean Air project activity. It was anticipated the plant modifications to comply with limitations on sulfur and nitrogen oxide emissions would raise rates more than 10 percent. The regulations would introduce an environmental factor to be considered by the energy control center in determining which plants to operate as system loads fluctuated. For CP&L, the objective was to make early preparation for the changes and assure that the best possible decisions would be made in a timely way.

"Our strategy is to manage risk, provide flexibility, control costs and accommodate load growth," Davis explained.

New Information Management Systems

In 1986 the Company had launched a major corporate information resources planning project which it called CIRP. More than 80 people representing a cross-section of the Company were involved. Their efforts were yielding fruit in 1992. A new customer information management system (CIMS) was scheduled for start-up in November. It was to replace the 24-year-old customer accounting and information system. Its capacity was 4.5 million lines of computer code and it would be used by 1,500 employees everyday, putting at their finger tips detailed information about the account of each customer.

Tom Dwyer, vice president for information services, described CIMS as the first system in the Company where work processes were changed before the information system was developed. It would enhance productivity and customer service.

A new financial/accounting information management system (FAIM) was set to begin in 1993. Dwyer anticipated it would literally change the way budgeting and accounting was done, allowing activity-based cost management. Among utilities, CP&L was on the leading edge. In fact, the Company already enjoyed recognition from industry peers and a trade magazine as "premier" in its use of computer technology for information management.

Barham said FAIM would enable management to look at an individual manager's

performance compared to the dollars spent on any given business activity, and allow the allocation of more resources to value-added activities while maximizing the ability to lower costs.

LEADING IN BUSINESS SUPPORT OF EDUCATION

The September 1991 issue of North Carolina magazine pictured Sherwood Smith on its cover, calling him an "Education Reform Advocate". That label underscored his philosophy about responsibility to be involved in the community -- local, state and national. While leading CP&L to a position of prominence in support of education, he also had advocated protection of environmental resources.

As concern about the quality of public education mounted during the 1980s, Smith jumped to the fore as a spokesman for business. His interest was sparked initially by a report entitled, "A Nation at Risk". Through his activities in the Committee for Economic Development, he became familiar with a CED report entitled, "Teaching the Disadvantaged". As chairman of North Carolina Citizens for Business and Industry, he established that organization's first education committee.

If Smith needed any premise on which to base his commitment to education it had been

provided much earlier: "the future of CP&L is the future of the area we serve." Certainly, education had become the key to the hopes and dreams of individuals and communities in the Carolinas.

In 1985 Smith joined with former State Senator Gerry Hancock, Jay Robinson who was superintendent of Mecklenberg county schools, and Tom Lambeth of the Reynolds Foundation to organize the Public School Forum, a broad-based North Carolina leadership group. Its aim was to bring together the different interest groups speaking for education, and have a united front in presenting the needs of education.

An early draft of a purpose statement identified the problem which Smith, Hancock, Lambeth and Robinson sought to address. "The competition of interests which now exists among the various constituencies of public education -- parents, teachers, administrators, school boards, municipal and county governments, the board of public instruction, and legislators -- is not healthy because it has become a conflict over disparate issues, usually in the General Assembly, instead of a technique to develop consensus for new approaches to the overall problem."

They spoke of developing a plan, or at least options, whereby the private sector could be "more involved in the support and improvement of the school system as well as in decisions about the allocation of resources for the system."

Public School Forum

When the 42-person Public School Forum was constituted, its members included business executives from the Governor's Council on Management and Development, appointees by the lieutenant governor and the speaker of the house, the state superintendent of public instruction, the chair of the state board of education, the head of the state's higher education system, and leaders of the North Carolina Association of Educators, the Association of School Administrators, the School Boards Association and the Association of County Commissioners. Hancock was chairman. Smith was a member of the executive committee.

Its mission as initially described was "to establish a permanent forum for consideration of major public education issues" which would "work to identify the significant challenges facing elementary and secondary schools and develop consensus responses which will deserve support of the people."

The Forum defined its goals as two-fold. First, it wanted to insure that "the public schools are staffed by talented, well-trained, dynamic, professional teachers and administrators." Second, it advocated "an atmosphere and work conditions that are professionally challenging and financially rewarding."

When formation of the Forum was announced, Smith told a press briefing that "our human resources determine how the other resources of the nation will be developed and managed.

Without a skilled and knowledgeable work force, neither business nor government can work efficiently or productively. Schools are the central institution for the development of human resources."

Smith later reflected that decisions about education were being made on a short-term political basis. "It was important to establish a permanent forum to discuss educational needs and policy outside the halls of the General Assembly. We wanted to support and strengthen the present system while working for longer-term improvements."

One of the early achievements of the Forum was to gain private and state financial support for the North Carolina Fellows program. Modeled after the Morehead Scholars program at the University of North Carolina at Chapel Hill, its objective was to attract outstanding high school seniors into the teaching profession by providing college scholarships in exchange for a commitment to teach for a specified period following graduation. Through the Fellows program, about 400 scholarships were awarded annually.

Study of the Future of Community Colleges

In 1987 Smith was appointed chairman of a 23-person blue ribbon Commission on the

Future of the North Carolina Community College System. After more than a year of work by the Commission, Smith wrote in the official report:

"Our investigation focused on a growing gap between job requirements and skills of our workers -- a problem which will confront our state with growing seriousness over the next 25 years, unless North Carolina acts now to raise the basic and advanced skills of many of its adult citizens.... We looked into the challenges faced by business and industry competing in a competitive economy where efficiency, flexibility, and mastery of new technologies are increasingly demanded. The clear message to our state, and to our community colleges, is that 'business as usual' will not work for education, as it will not work for businesses facing an increasingly competitive and demanding economy. Our businesses must adapt to meet new challenges, and our community colleges must adapt to meet the needs of those who work in North Carolina. Yet our higher expectation for community colleges will only be realized if we first invest more into the system."

Also a member of the Governor's Commission on Workforce Preparedness, Smith authored a statement which appeared in the September 1990 issue of Business North Carolina:

"It is imperative that the business community call for the best from our educational system and for business people to actively help our schools.... The competitiveness and profitability of North Carolina business will depend on the quality and motivation of the young people educated by our primary and secondary schools, community colleges and universities.

"Since there is a direct correlation between the quality of the workforce and the quality of education, it is in the best interest of the business community to ensure that its future employees are fully prepared for the increasing demands of a highly technical, complex work environment.

"Inadequately trained or unmotivated workers place an additional burden on our already limited resources.... It is essential our schools have the resources to do the job properly the first time.

"Improvements will not happen overnight. Education is a complex, dynamic process and improvements must be based on good judgment and implemented systematically."

Recognition for Support of Education

Smith's interest in and support of education also led to other honors. Honorary doctoral degrees were awarded him in 1988 by St. Augustine's College in Raleigh, in 1989 by Francis Marion College at Florence, S. C., and in 1990 by Campbell University at Buies Creek, N. C. He also received the first Friend of Education award from the Wake County (N.C.) Education Foundation in 1990. He was a driving force in establishment of foundations in Wake and other counties. He had been president of the Board of Visitors at the University of North Carolina at Chapel Hill and vice chairman of the Morehead Scholars' central selection committee at UNC.

Writing in The Forum Report, a publication of the Public School Forum of North Carolina, Smith endorsed local education foundations. "I would encourage every business to get involved If a community does not have a foundation, help start one. We have only begun to realize the tremendous power of strengthening the bonds between business and education."

He added: "Many business leaders see education as a field best left to local and state governments. Many education leaders feel that businessmen are not suited to provide policy direction for educational reforms and improvements. Those attitudes must change or they will cost business and education far more than they realize."

Under Smith's leadership, CP&L became a generous supporter of local education foundations across its service area. It also provided annual scholarship grants to the 38 community colleges and technical schools in its area. One of the Company's grants in 1989 provided funds which enabled the Darlington county (S.C.) high school to establish a skills enhancement center, a 30-station computer lab used in teaching adults to read.

Governor Carroll Campbell spoke at the dedication of the facility. Describing adult illiteracy as a major barrier to economic growth in South Carolina, he said "this represents a community effort to do something about a problem that affects the people of this county. By pooling the resources of the school board, county council, the county development board and business, you

have hit on the formula for success."

In a speech at Campbell University, Smith told students one of the bigger tasks facing the nation "is to improve the quality of our total education system and the products of that system to meet the challenges of an increasingly competitive world. Upon graduation, you not only will be in competition with your peers in this country, but you will be competing with a world community of bright, well-educated and highly motivated young people.

"...Education of our young people and the job skill training of our workforce provide the cornerstone that will either ensure the success or place at risk the prosperity of this nation in the 21st century."

In a commencement address at Francis Marion College in December 1989, Smith described life as a race, marked by a start and a finish. "It is what we do and learn during the race, and how we apply that experience that determines whether our participation in the race is successful. If we learn from each success, and from each failure, and if we improve ourselves through this process, then we will fulfil our potential and perform well," he said.

As he spoke to young people, Smith frequently expressed what he described as an underlying principle. "Your rewards in life will be in direct proportion to your contributions."

SAFETY ALWAYS EMPHASIZED

Safety has known no season or year at CP&L. It has been a constant in a business where change has been the norm. The guiding principle was expressed in the slogan:

No job is so important

And no service so urgent

That we cannot take time

To perform our work safely.

The Company was a charter member of the National Safety Council in the 1920s and has been an aggressive promoter of safety in the workplace ever since. It has been so successful that other utilities from this country, Canada and Great Britain have chosen to study and emulate its program. Safety training has included instruction in first aid, including cardio-pulmonary resuscitation (CPR).

The May 1963 Spotlight reported about Kimball W. Burriss, a serviceman in Wilmington, saving the life of a fisherman who had fallen from a boat into the Cape Fear river. When he came upon the accident, Burriss pulled the drowning man from the water into his boat, and applied artificial respiration with one hand while he used the other to steer the boat to shore. It was off-duty use of the first aid training learned during his 35 years with Tide Water Power and CP&L. Other

employees performed similar, if less spectacular, lifesaving acts.

When 87 employees at the Cape Fear plant in 1978 set what was then a record 450,000 man-hours for time worked at a steam generating plant without a doctor attended injury, Manager Leon Ellis commented: "A good safety record means efficiency of operation as well as the safety of the employee. That efficiency, in the long run, adds up to dollars saved for our consumers."

In September 1983, employees at the Weatherspoon plant completed one million hours of work time without a doctor-attended injury. Manager C. V. Bailes described the safety achievement as an all-time record for the Company's power plants.

In 1985 a Sumter line and service crew was recognized by the South Carolina department of labor for working one million man-hours without a lost time accident. The achievement spanned 35 years during which 31 different employees had been members of the crew.

Spotlights regularly pictured safety councils which had reached milestones ranging from 100,000 up to 2,000,000 man-hours without an accident. In October 1991 the Brunswick instrumentation and control electrical maintenance safety council reached two million man-hours without an on the job injury. The record started in May 1984.

There were 134 safety councils within the Company in 1992. Each met monthly.

Those which achieved the better safety records were recognized annually at a Raleigh luncheon with senior management. There also was recognition for individual councils as they achieved significant safety milestones. Smith frequently reminded employees that to be successful they should combine good judgment and skill with sincere dedication to safety.

Two safety councils did not have an accident requiring the attention of a doctor for over 30 years. The 10-member council at Dillon and the 14-person council at the Walters plant held that distinction while the Mt. Olive council had exceeded 20 years. Stacey Griffin of the Dillon council who had logged 39 years with the Company spoke of trying to emphasize safety continually. "We're proud of the record and proud of the work done to reach 30 years," he declared. A 1991 accident ended the Dillon record at 32 years.

Through 1990 the Company had earned the EEI safety achievement award in 14 of the last 17 years, the National Safety Council award of honor or merit in 15 years, and the Southeastern Electric Exchange accident prevention award in 13 of the 17 years.

THE PIONEER CLUB -- 1947 to 1992

To recognize employees who had been with the Company for 25 years, the Company in 1947 started the Pioneer Club. After 74 new members were inducted in 1992, Barbara Allen, head of the community relations department and executive secretary of the Pioneers, said membership was 1,333. Of this number, 497 still were active employees. Allen had completed 12 years as executive secretary of the club. Her predecessors in that position were Gordon L. Jones, Howell R. Rickman and Tom Byrum.

Jones was a special accountant in electronic data processing when he retired June 28, 1967. His career which started as a \$5 per week office boy in Asheville spanned 50 years, 10 months and 5 days. Only Kenneth Isley, who retired as a salesman in Henderson on January 1, 1966, had worked longer for the Company. His career exceeded Jones' by 54 days. Both were outdistanced by Walter Ammenhauser when he retired November 1, 1970. Born in Germany, Ammenhauser had been employed by Tide Water Power Company when he was 13. His first job was in a refreshment stand at the end of one of the Company's trolley lines. He was a serviceman from 1928 until his retirement. Ammenhauser's career spanned 51 years, six months and 15 days.

A record of a different kind was set by Edna Murray, office supervisor in Henderson. From May 27, 1946 -- her first day on the job at CP&L -- until her retirement August 1, 1988, she never missed a day except for vacation. "For a long time, I never really thought about it," she said. "I had a job to do, I was expected to be here and I wanted to be here. After many years, I realized I had not missed a day. Then it became a goal to keep it going."

"I have always been impressed by the people I have met throughout CP&L. You just don't find better people," Murray declared. "When you are working with good people and for a good company, it makes it a lot more enjoyable to go to work each morning."

Another unique career ended in 1978 with the retirement of John Humphrey, manager of the Sutton plant. He began work with CP&L in 1939 at the Hartsville substation of which his father was superintendent. When John became a member of the Pioneer club in 1964, he and his father were the club's first and only father-son team.

The Company sponsored annual dinner meetings for the Pioneers each spring, providing an opportunity to renew old acquaintances as well as to recognize new members.

NEW PRESIDENT AND CHIEF OPERATING OFFICER

In a move which marked him as the likely successor to Smith as chief executive, William Cavanaugh III came to CP&L on September 1, 1992, as president and chief operating officer. Since 1980 Smith had held the titles of chairman and president.

Cavanaugh had a strong background in nuclear management, the area which Smith believed held the greatest challenge for CP&L. He had been group president for energy supply at Entergy Corporation, an electric utility holding company based in New Orleans, and chairman of Entergy Operations, Inc., Entergy Corporation's nuclear operating subsidiary. Some would recognize Entergy better as the old Mid-South company. Its operating utilities included Mississippi Power and Light Company in Jackson, Mississippi, of which Cavanaugh was president from 1984 until 1986.

A mechanical engineering graduate of Tulane University, he spent eight years in the U. S. Navy's nuclear program. He had been at Entergy for 23 years, holding varied management positions in its nuclear operations.

The reaction to Cavanaugh's appointment was that Smith was responding, at least in part, to NRC's continuing criticism of management of the Brunswick plant. Cavanaugh was highly respected throughout the nuclear industry. But Smith, 58, saw the move as providing for an orderly transition in the management of the Company. Cavanaugh was 53.

With the arrival of Cavanaugh, all of the power supply functions reported to him.

Graham and Barham continued to report to Smith. Graham had responsibility for the legal and regulatory group, the customer and operating services group, and the corporate communications and public affairs departments. Barham was responsible for the finance and administration functions.

CP&L APPRAISED

Sherwood Smith sat in his office on a Saturday morning in the summer of 1992 and assessed the state of CP&L, much as Sutton had done before the Newcomen Society in 1958. Behind Smith was a framed quote from one of his speeches: "Quality is not a technique at all but an attitude

put into action. Quality initiatives don't succeed because of the novelty of the ideas but because of determination, persistence and skill of implementation."

"We are strong financially," he said. "We expect to need a minimum of capital for new plants. Our biggest capital requirements for the remainder of the '90s will be to comply with the Clean Air Act and to maintain nuclear plants.

"We have strong technical skills and we are growing in our orientation to business management. Our business continues to become more complex and sophisticated. Many of our managers are better equipped because of deliberate cross-training. We have to excel in meeting customer needs in a competitive environment. We have to use our TQ skills effectively.

"We have to recognize the leverage which nuclear has on our business. Only seven other companies have nuclear operations at three different locations."

He reflected about the Brunswick plant, characterizing its problems as more regulatory than technical.

To one reading news reports, he suggested, it sounds a lot worse than it is. He was confident that a July 23 response to the NRC outlined corporate plans that would expedite the return of Brunswick to service, and result in improvements at the Company's other nuclear facilities.

Still a spokesman for the nuclear industry, he was chairman of the Nuclear Power Oversight Committee. Speaking before the U. S. Senate Environment subcommittee on nuclear regulation in behalf of Edison Electric Institute and the American Nuclear Energy Council, Smith described what it would take to allow utilities to order and build nuclear plants:

"Congress must pass legislation that enhances standardization of plant design and provides for licensing reform. To further reduce dependence on foreign oil, nuclear energy must be an important component of any national energy strategy."

The Company which Smith headed had grown to 959,000 customers and annual revenues of \$2.686 billion at the end of 1991. Its system had capability of 9,867,000 kilowatts. Its assets exceeded \$7.5 billion.

A member of the Business Roundtable and the Business Council, Smith had seen his sphere of influence grow steadily over the years. In his leadership of a corporation subjected to public and regulatory criticism, he had shown amazing personal resiliency. He rolled with the punches and doggedly kept plowing ahead. Always he seemed able to see a silver lining in the storm clouds. Few individuals could have given more of themselves in service to their community than he had while guiding the fortunes of CP&L during 13 years as chief executive. The Greater Raleigh Chamber of Commerce recognized him with its A. E. Finley Distinguished Service Award in 1985; the University

of North Carolina with its 1984 Distinguished Alumnus Award; and the Occoneechee Council of Boy Scouts with its 1988 Distinguished Citizen Award.

His peers in the electric industry praised him for his leadership in Washington; for his ability to analyze situations and formulate strategy to deal with legislative issues. They were inspired and heartened by his leadership.

Impressive as his achievements had been, Smith looked ahead to more years of leadership at CP&L and service to his community with the same excitement and intensity that had marked his first 27 years with the Company.

DIRECTORS

1958 to 1992

(Listed in the order of their election)

Louis V. Sutton

Chairman and President, CP&L

Raleigh, N. C

1-15-33 to 1-5-70

W. H. Weatherspoon

Vice President and General Counsel, CP&L

Raleigh, N. C.

10-30-35 to 9-15-71

Alexander Webb

Manager, Virginia-Carolinas Department, Great American Insurance Company of New York

Raleigh, N. C.

2-19-36 to 3-14-62

James L. Coker

President, Sonoco Products Company

Hartsville, S. C.

1-12-44 to 2-16-61

Robert M. Hanes

President, Wachovia Bank and Trust Company

Winston-Salem, N. C.

1-12-44 to 3-10-59

E. Hervey Evans

Farmer

Laurinburg, N. C.

5-15-46 to 3-17-76

Fulton B. Creech

President, Creech Lumber Company

Sumter, S. C.

9-11-46 to 3-19-75

Verne Rhoades

Forestry Engineer

Asheville, N. C.

12-11-46 to 3-8-67

R. B. Carpenter

Treasurer, CP&L

Raleigh, N. C.

10-30-35 to 2-16-38

1-12-44 to 12-11-46

2-20-50 to 3-13-68

Hargrove Bellamy

Investments

Wilmington, N. C.

6-11-52 to 12-31-69

H. B. Robinson

Executive Vice President, CP&L

10-30-35 to 3-11-36

5-21-53 to 12-1-72

Raymond A. Bryan

President, T. A. Loving and Company

Goldsboro, N. C.

1-21-57 to 3-19-75

John B. Veach

President, Hardwood Corporation of America

Asheville, N. C.

5-21-58 to 3-17-76

L. H. Harvin, Jr.

President, Rose's Stores, Inc.

Henderson, N. C.

9-10-58 to 5-20-84

William L. Yoder

Secretary, CP&L

3-10-54 to 9-10-58

5-21-59 to 12-12-60

Hugh G. Isley

Vice President, CP&L

Raleigh, N. C.

3-8-61 to 6-14-61

3-14-62 to 3-10-65

Shearon Harris

Chairman and President, CP&L

Raleigh, N. C.

3-8-61 to 8-28-80

Horace L. Tilghman, Jr.

Real Estate and Investments

Marion, S. C.

6-14-61 to 4-18-86

W. Reid Thompson

Executive Vice President and General Counsel, CP&L

Raleigh, N. C.

3-10-65 to 2-28-71

Karl G. Hudson, Jr.

Executive Vice President and General Manager, Hudson Belk Company

Raleigh, N. C.

3-8-67 to 5-9-90

Paul S. Colby

Senior Vice President, CP&L

Raleigh, N. C.

3-13-68 to 2-28-71

Daniel D. Cameron, Sr.

President, Atlantic Telecasting Corporation

Wilmington, N. C.

1-1-70 to 5-13-92

John F. Watlington, Jr.

Chairman, Wachovia Bank and Trust Company

Winston-Salem, N. C.

3-11-70 to 5-19-82

Sherwood H. Smith, Jr.

Chairman, President and CEO, CP&L

Raleigh, N. C.

3-1-71

J. A. Jones

Vice Chairman, CP&L

Raleigh, N. C.

3-1-71 to 9-30-82

Edward G. Lilly, Jr.

Executive Vice President and Chief Financial Officer, CP&L

Raleigh, N. C.

9-15-71 to 11-1-90

Felton J. Capel

President, Century Associates of North Carolina

Southern Pines, N. C.

12-20-72

Charles W. Coker

Chairman and CEO, Sonoco Products Company

Hartsville, S. C.

3-19-75

Margaret T. Harper

Owner, Stevens Agency

Southport, N. C.

3-19-75 to 5-18-88

George H. V. Cecil

President, Biltmore Dairy Farms, Inc.

Asheville, N. C.

3-17-76

A. C. Monk, Jr.

Chairman and President, A. C. Monk and Company, Inc.

Farmville, N. C.

3-17-76 to 5-15-85

John G. Medlin, Jr.

President and CEO of the Wachovia Corporation and

Wachovia Bank & Trust Company

Winston-Salem, N. C.

5-19-82 to 1-1-87

Edwin E. Utley

Senior Executive Vice President, CP&L

Raleigh, N. C.

10-1-82 to 5-1-89

William E. Graham, Jr.

Vice Chairman of CP&L

Raleigh, N. C.

9-17-80

Gordon C. Hurlbert

President, GCH Management Services

Pittsburgh, Pennsylvania

12-19-84

Edwin B. Borden

President, Borden Manufacturing Company

Goldsboro, N. C.

5-15-85

J. R. Bryan Jackson

Chairman and President, Superior Machine Company of S. C., Inc.

Florence, S. C.

9-17-86

J. Tylee Wilson

President, J. Tylee Wilson Associates

Jacksonville, Florida

1-1-87

Estell C. Lee

President, Seacor, Inc.

Wilmington, N. C.

5-18-88

Lynn W. Eury

Executive Vice President, CP&L

Raleigh, N. C.

5-1-89

Robert L. Jones

President, Davidson and Jones Corporation

Raleigh, N. C.

5-9-90

Charles D. Barham, Jr.

Executive Vice President and Chief Financial Officer, CP&L

Raleigh, N. C.

11-1-90

Richard L. Daugherty

Vice President, Entry Systems Division, and

Senior State Executive, IBM Corporation

Raleigh, N. C.

5-13-92

OFFICERS

1958 -- 1992

(with photos)

Chief Executives

Louis V. Sutton

Vice President (12-14-32)

President (3-23-33)

Chairman and CEO (5-15-63)

Chairman (1-1-69 until 1-5-70)

Shearon Harris

Vice President (12-14-60)

President (5-15-63)

President and CEO (1-1-69)

Chairman and CEO (12-15-76)

Chairman (9-19-79 until 5-21-80)

Sherwood H. Smith, Jr.

Senior Vice President (2-28-71)

Executive Vice President (12-5-74)

President (12-15-76)

President and CEO (9-19-79)

Chairman, President and CEO (5-21-80 until 9-1-92)

Chairman and CEO (9-1-92)

Senior Officers

J. A. Jones

Assistant Vice President (5-15-68)

Vice President (12-9-69)

Power Supply

Senior Vice President (10-13-70)

Engineering and Operating Group

Executive Vice President (5-16-73)

Engineering, Construction and Operation Group

Sr. Executive Vice President (5-16-79)

Vice Chairman (5-20-81 until 9-30-82)

William E. Graham, Jr.

Vice President (4-1-73)

Legal

Senior Vice President (12-15-76)

Legal, Regulatory and Communications Group

Executive Vice President (5-20-81)

Vice Chairman (5-15-85)

William Cavanaugh III

President and Chief Operating Officer (9-1-92)

H. B. Robinson

Vice President (1-11-43)

Executive Vice President (5-15-63 until 5-1-67)

W. Reid Thompson

Vice President (5-15-63)

Legal

Executive Vice President (5-17-67 until 2-28-71)

Legal, Regulatory and Financial Group

Edward G. Lilly, Jr.

Senior Vice President (3-15-71)

Finance and Accounting Group

Chief Financial Officer

Executive Vice President (5-20-81 until 11-1-90)

E. E. Utley

Vice President (9-20-72)

Power Supply

Senior Vice President (12-15-76)

Power Supply Group

Executive Vice President (5-16-79)

Power Supply and Customer Services

Sr. Executive Vice President (5-15-85 until 4-28-89)

Power Supply

Lynn W. Eury

Vice President (5-16-79)

System Planning and Coordination

Senior Vice President (12-17-80)

Power Supply Group

Operations Support Group

Executive Vice President (4-1-89)

Power Supply

Charles D. Barham, Jr.

Vice President (12-17-80)

Legal

Senior Vice President (5-19-82)

Legal and Regulatory Group

Executive Vice President (11-1-90)

Finance and Administration Group

and Chief Financial Officer

Paul S. Colby

Vice President (12-9-64)

Operating and Engineering

Senior Vice President (5-15-68

until 10-31-71)

Operating and Engineering Group

W. J. Ridout, Jr.

Vice President (5-15-68)

Customer and Operating Services Group

Senior Vice President (3-15-72 until 9-1-82)

Darrell V. Menscer

Vice President (5-16-73)

Special Services

Senior Vice President (12-15-76 until 4-30-80)

Corporate Services Group

Power Supply Group

Wilson W. Morgan

Vice President (12-15-76)

System Planning and Coordination

Senior Vice President (5-16-79 until 6-30-90)

Corporate Services Group

Customer and Operating Services Group

M. A. McDuffie

Vice President (12-5-74)

Power Plant Construction

Senior Vice President (6-23-76 until 10-1-89)

Engineering and Construction Group

Nuclear Generation Group

James M. Davis, Jr.

Vice President (5-16-79)

Fuel and Materials Management Group

Senior Vice President (12-17-80)

Fuel and Materials Management Group

Operations Support Group

Fossil Generation and Power Transmission Group

Russell H. Lee

Vice President (9-17-80)

Eastern Division

Senior Vice President (9-1-82 until 6-30-87)

Customer and Operating Services Group

R. A. Watson

Vice President (3-19-80)

Fuel

Harris Nuclear Project

Senior Vice President (4-1-89)

Nuclear Generation Group

Norris L. Edge

Vice President (12-17-80)

Rates and Service Practices

Senior Vice President (5-9-90)

Customer and Operating Services Group

Richard E. Jones

Vice President (5-19-82)

Legal

Vice President and Secretary (11-1-89)

Sr. Vice President and Secretary (12-1-90)

Legal and Regulatory Services Group

Vice Presidents

Charles S. Walters (4-7-26 until 8-23-59)

Western Division

W. H. Weatherspoon (3-9-32 until 5-21-64)

Legal

Joseph C. Richert, Jr. (12-8-48 until 1-1-68)

District Operations

Albert E. Jones (5-21-52 until 3-29-62)

Eastern Division

Hugh G. Isley (12-14-60 until 7-1-66)

Sales

E. N. Pope (12-14-60 until 4-1-67)

Advertising and Sales Promotion

Public Relations

A. J. Skaale (12-14-60 until 7-1-65)

Operating and Engineering

D. E. Stewart (12-14-60 until 8-6-65)

Area Development

J. R. Riley (12-9-64 until 7-31-78)

Public Affairs

James R. Hinkle (5-15-68 until 7-1-73)

Group Executive, Administrative Services

Charles F. Rouse (5-15-68 until 8-1-72)

Legal

Raymond S. Talton (5-15-68 until 5-18-77)

Engineering

Samuel Behrends, Jr. (12-9-69 until 4-1-87)

Rates and Service Practices

Corporate Regulatory Policy

Edgar M. Geddie (12-9-69 until 1-31-77)

Assistant Vice President (5-5-68 until 12-9-69)

Transmission and Distribution

Division Operations

William B. Kincaid (9-20-72 until 3-1-84)

Power Plant Engineering and Construction

Materials Management

Albert L. Morris, Jr. (5-16-73 until 9-1-89)

Public Relations

Corporate Communications

Patrick W. Howe (12-15-76 until 11-1-88)

Technical Services

Brunswick Nuclear Project

Earl F. Stephenson (12-15-76 until 2-1-87)

Customer Service Operations Support

E. Wilson Craig (2-15-76 until 12-31-89)

Eastern Division

Northern Division

W. Burt Grant (12-15-76)

Central Division

C. Joe Turner (12-15-76)

Southern Division

Robert F. Hill (5-17-78 until 9-1-80)

Employee Relations

Sheldon D. Smith (5-16-79 until 12-31-85)

Power Plant Construction

Thomas S. Elleman (7-1-79 until 10-4-85)

Nuclear Safety and Research

Ben J. Furr (9-19-79 until 8-1-92)

Nuclear Operations

Paul S. Bradshaw (3-19-80)

Accounting

E. Charles Dyson (3-19-80)

Western Division

Jack B. McGirt (12-17-80 until 12-1-88)

Fossil Operations

Alan B. Cutter (3-18-81 until 4-1-91)

Nuclear Power Plant Engineering

Nuclear Services

Bobby L. Montague (5-20-81)

System Planning and Coordination

System Planning and Operations

E. S. Noell (5-20-81 until 8-29-90)

Transmission System Engineering and Construction

Mendall H. Long (12-16-81 until 11-1-85)

Special Projects

Cecil L. Goodnight (5-18-83)

Employee Relations

R. Thomas Dwyer III (5-18-83 until 4-15-85)

(12-21-88)

Performance Review and Audit Services

Information Services

Guy P. Beatty, Jr. (9-17-86 until 10-1-88)

Robinson Nuclear Project

Robert L. Lively (9-17-86 until 12-31-89)

Customer Service Operations Support

Total Quality

John S. Monroe (5-20-87)

Eastern Division

Russell B. Starkey, Jr. (12-20-89)

Brunswick Nuclear Project

Nuclear Services

C. V. Bailes (5-9-90)

Fossil Operations

R. Michael Jones (5-9-90)

Public Affairs

R. B. Richey (9-19-90)

Harris Nuclear Project

Brunswick Nuclear Project

Gerald E. Vaughn (9-19-90)

Nuclear Services

Harris Nuclear Project

Larry Boyer (12-12-90)

Customer Support

Jerry W. Kirk (12-12-90)

Northern Division

James W. Massengill (12-12-90)

Raleigh Division

Richard J. White (5-8-91)

Corporate Communications

Charles R. Dietz (9-18-91)

Robinson Nuclear Project

H. Ray Starling (9-18-91)

Legal

A. M. Lucas (5-13-92)

Nuclear Engineering

General Counsel

W. H. Weatherspoon (6-18-35 until 12-12-62)

Shearon Harris (12-12-62 until 5-15-63)

W. Reid Thompson (5-15-63 until 2-28-71)

Sherwood H. Smith, Jr. (3-1-71 until 12-5-74)

William E. Graham, Jr. (12-6-74 until 5-19-82)

Charles D. Barham, Jr. (5-19-82 until 7-1-87)

Richard E. Jones (7-1-87)

Secretary

William L. Yoder (1-1-57 until 12-12-60)

Richard S. Mallison (1-16-61 until 2-21-71)

J. L. Lancaster, Jr. (3-1-71 until 11-1-89)

Richard E. Jones (11-1-89)

Assistant Secretary

J. L. Lancaster, Jr. (5-21-64 until 3-1-71)

Robert Williams (12-20-72)

Treasurer

R. B. Carpenter (9-11-46 until 12-31-66)

James S. Currie (1-1-67 until 9-1-78)

Edward G. Lilly, Jr. (9-1-78 until 3-21-79)

L. Thom Quarles (3-21-79 until 9-9-89)

Margaret S. Glass (9-20-89)

Assistant Treasurer

H. T. Buchanan (5-21-53 until 7-1-69)

H. I. Seeley (5-21-53 until 4-1-62)

James S. Currie (1-16-61 until 1-1-67)

John R. Powell (5-15-63 until 5-21-69)

James P. Cooke (6-14-67 until 5-15-74)

C. D. Mann (5-21-69 until 12-15-76)

James R. Farmer (6-20-73 until 6-28-74)

Paul S. Bradshaw (5-21-75 until 12-15-76)

L. T. Quarles (12-15-76 until 3-21-79)

Controller

John R. Powell (5-21-69 until 12-15-76)

Paul S. Bradshaw (12-15-76)

Assistant Controller

C. D. Mann (12-15-76 until 12-1-86)

