

Image on front cover:

Crews work on the transmission line from a barge off of North Roosevelt Boulevard

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KEYS ENERGY SERVICES

Powering Paradise for 75 Years 1943-2018





KEYS ENERGY SERVICES POWERING PARADISE FOR 75 YEARS

The road to Key West is lined with vestiges of the past.

As you drive along U.S. Highway 1, the road is a steady pattern of bridges and islands, land and sea. Reminders of an earlier time exist; portions of old bridges from Henry Flagler's early-20th century Overseas Railway rise up from the ocean's floor. And all along the 128-mile drive there is another constant running along the Overseas Highway – the stretch of transmission line that provides reliable electricity to the residents and businesses of the Florida Keys.

For 75 years, Keys Energy Services (formerly City Electric System) has powered Key West and the Lower Florida Keys. Headquartered in Key West, Keys Energy Services, or KEYS, has a long history laced with challenges – challenges the entire nation faced and challenges that were unique to its island operation.

The roots of Keys Energy Services' history begins in the late 19th century, following Thomas Alva Edison's invention of the incandescent light bulb. Spurred by Edison's invention, about 50 leading citizens of Key West gathered in City Hall in 1883 to organize the Key West Gas Light Company. John Jay Philbrick became president with William Curry, vice-president; R.A. Montsalvatge, secretary-treasurer; and R. Fogarty, Samuel Filer, Eduardo H. Gato and J.G. Macy serving as directors of the newly formed company. A plant was constructed by the company on Emma Street at a location known as Ford Pond.

Opposite: An electric street car traveling along Duval Street passes the Key West Electric Company offices on Duval and Greene streets Electricity, as we know it, officially came to Key West in 1887 when the Key West Gas Light Company amended its charter to permit the company to produce electricity and changed its name to the Key West Gas and Electric Light Company. Two years later, the company again changed its name, this time to the Key West Electric Company. The amendment implied the increasingly widespread use of electricity among residents. At the time, Key West was the largest city in Florida with nearly 18,000 residents.

In 1889, the company discontinued the production of gas and began to generate electricity. Its generating capacity was 2,000 incandescent 50 arcs. ¹ The firm's power house was on the site of

its old gas plant and it was generating a mere seven years after Edison of New York began its generation. By taking the initiative in the early days of generation, Key West Gas and Electric Company became the first plant to generate electric power in the South.²

Simultaneously, the development of mass transportation in the late 19th century helped to "fuel" electricity's growth and acceptance. In July 1884, the Key West Street Car Association was formed by cigar company magnate Eduardo H. Gato. The Association purchased cars that were used primarily to transport workers in Key West's flourishing cigar industry. By 1887, the Association was operating with 73 mules and four "summer"



Mule-powered street car owned by the Key West Street Car Association

cars. By 1888, there were eight old cars, four new ones and 92 mules.

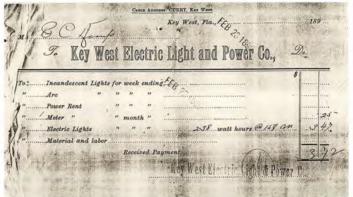
The brief era of mule-powered street cars came to an end in 1894 when the Street Car Association asked the Key West Electric Company to quote a price for furnishing power to convert mule-power to electric power. The price agreed upon was \$10,000 a year for ten years.

An electric arc is a visible plasma discharge between two electrodes that is caused by electrical current ionizing gasses in the air. Electric arcs occur in nature in the form of lightning.
2 "Electric Generation in the Lower Keys," Watts Up Employee Newsletter, May 1985.

Competition in the electric business came to Key West when a second electric company was established on October 23, 1895 by Charles Curry, Martin L. Hellings, Milton W. Curry, George H. Curry and Joseph Y. Porter. The newest electric company – the Key West Electric Light and Power Company – owned and operated an electric plant and an ice plant on Emma Street.

Years later, the Key West Art & Historical Society published *The Martello Towers and the Story of Key West*, which explained the fierce competition between the two electric utilities:

When the Curry company came into the field, there was sharp, competitive rivalry between it and the older company known popularly as the 'Philbrick' concern. There were two sets of overhead wires and poles, and if a consumer got mad at Philbrick and decided to buy current from Curry, a man would come and yank out the Philbrick wires and install Curry connections. And, of course, vice versa.³



A Key West Electric Light and Power bill dated 1899

The Key West Electric Light and Power Company quickly expanded. In 1897, Jacksonville's *Florida Times Union* reported:

Key West will be blessed with the finest electric plant this winter of any city in the South. William Curry & Sons purchased a complete new electrical outfit – two dynamos from the Stanley Electric Manufacturing Co. and engines and boilers from the Ball and Wood Co. of New York. When the new plant arrives, Curry & Sons will have the finest and most complete apparatuses and in case of a breakdown or any accident there will not be any interruption with the lighting of the city.

The utility's long-standing association with the United States Navy began in April 1898, when the Key West Electric Company began supplying the Naval Station with electricity during the Spanish-American War.

Meanwhile, John Philbrick passed away in 1897, and the Key West Electric Company was inherited by his nephews, John P. and Albert S. Laflin. In 1904, the nephews purchased the "Curry" electric and ice plants, which had sustained damage during an explosion, opting to consolidate the two electric entities, thus ending the era of electric competition in Key West. In addition, The Key West Electric Company constructed the area's first diesel plant in the early 1900s and began operating that plant in 1904. Though no longer in use, the building still stands at the foot of Angela Street.

In 1906, the Laflins sold the Key West Electric Company to Stone & Webster, Inc., an electrical engineering consulting firm based in Boston, Massachusetts. It operated the plant for nearly forty years, surviving two major hurricanes in 1909 and 1910.

The October 11, 1909 hurricane, with winds topping 115 mph, knocked out power in Key West; electric crews took ten days to restore power throughout the city. One year later, on October 17, a hurricane with winds estimated over 90 mph struck the island. The power plant sustained damage and La Brisa, Key West Electric Company's pavilion and street car terminal at the southern end of Simonton Street, was completely knocked off its foundation and destroyed. Although the company suffered an estimated \$50,000 in damages, the Key West Electric Company survived.



Stone & Webster still operated the Key West Electric Company in October 1931 when Thomas Alva Edison passed away. Upon President Herbert Hoover's suggestion to plunge the country into darkness in memory of Edison, every electric light in Key West went out for one minute at 10:00 p.m. on October 21. Bascom L. Grooms, the president of the Key West Electric Company, pulled the main switch that plunged the island into the darkness it had known before Edison's invention. Like many other personalities, Edison had visited Key West. He spent six months in Key West during World War I while experimenting with depth bombs to combat enemy submarines. He stayed in the same quarters later used by President Harry S. Truman known as the "Little White House."

The 1930s were a period of status quo for electricity in Key West. In March 1932, the U.S. Naval Station installed an auxiliary electric power generating plant. The Key West Electric Company continued to supply power to the Navy's radio communications and station, but the auxiliary unit was used for backup power in case of emergency. On July 1, 1934, the City of Key West declared bankruptcy and turned itself over to the State of Florida for administration. The Federal Emergency Relief Administration (FERA) developed a plan that recommended tourism become central to the island's economy. "During the 1930s the FERA took over Key West lock, stock and barrel and the first development of Key West into a tourist area was planned and put into execution." ⁴ Throughout the years, tourism has remained Key West's main industry. Today, three hotels – the Casa Marina, Marriott Beachside and the Doubletree Resort are among Keys Energy Services' 15 largest customers.

In 1943, while the nation was in the midst of World War II, the people of Key West took the momentous step of switching from purchasing power from a private company to purchasing power from a municipal utility. The change originated during the April 15 City Council meeting, when the Council adopted an ordinance authorizing the purchase of the existing Key West Electric Company from Engineer's Public Service Company (a Stone & Webster stockholding company). The City Council also named R.W. Beck and Associates as consulting engineers.

Opposite: Winds from the 1909 hurricane toppled electrical distribution poles and lines on Duval Street



"As of July 31, 1943, the electric property served 4,196 customers and for the twelve months ending July 31, 1943, sold 6,781,150 kilowatt hours (kWh) for a total operating revenue of \$379,597.28." At the time of acquisition, power was generated by seven diesel-powered units at the foot of Angela Street. The seven units could produce a total of 2,940 kilowatts (kW). Four 2.3-kilovolt primary feeders out of the diesel plant and one 13.8 kilovolt line provided power to the utility's service area, the developed portions of Key West Island. The average cost of electricity was about 5.2 cents per kWh.

On April 16, the City Council signed a purchase agreement and authorized the sale of \$1.5 million in electrical revenue bonds for purchasing the Key West Electric Company. The bonds were issued at four percent interest.

The City Council officially created the Utility Board on August 10, charging the original board members – Mayor Willard M. Albury, Horace O'Bryant, Reginald Pritchard, Ernest Ramsey and J. Glenwood Sweeting – with the responsibility of exercising administrative supervision and control over the municipal utility. Under the original charter, the Utility Board included the city's mayor, the city council member serving as chairman of its finance committee and three citizens.

The final action on acquiring the municipal utility for Key West took place on August 13 when the bond issue closed. Gerald Saunders, a City Council member, signed the check for the purchase of City Electric System, the new name of the utility company. "I was a millionaire for exactly two minutes," Saunders said. "And when I signed the note, the amount was in the bank in my name and continued in my name till the note was paid on the dot of the second two minutes later." The check for \$1,240,139.17 was paid to John Nuveen and Company, the bond company in the purchase. From August 13, 1943, the people of Key West enjoyed the benefits of public power.



Following World War II, City Electric System entered a period of growth that paralleled the nation's. In order to keep up with the increased demand for electricity, City Electric System installed four new diesel-powered units at the Angela Street plant. The four units – a Fulton in 1944; a Nordberg in 1946 and two General Motors in 1948 – provided an additional 4,390 kW. ⁷ Along with increased generation, City Electric System began looking for ways to better serve its customers.

In June 1947, the Utility Board established new rates that resulted in a ten percent savings for customers. "The promotional characteristics of the new rates have resulted in a substantial increase in energy usage." an R.W. Beck report stated. The report went on to say, "All Electric Home Rate, inaugurated June 1, 1947, is designed to serve residential customers using electric service for lighting, cooking, refrigeration and water heating." 8

On December 20, 1947, City Electric System installed thirty-one 400-watt lamps along Duval Street, replacing less efficient ones. C.A. Van Deursen, manager of City Electric System, said that the lights and their installation cost approximately \$5,000. "The only thing the city will have to pay," according to Van Deursen, "is the cost of electricity...The city gets 16 times more light than it is getting now from the old lamps for only \$4.80 more a day." He added, "they are the only street lights in the United States that stretch from ocean to ocean. They are very attractive and will give businesses along the street what they have been looking for – better lighting."



A Nordberg Unit inside the Key West Diesel Plant on Angela Street

⁷ R.W. Beck, Comprehensive Engineering Report, June 15, 1949.

⁸ Ibid.

^{§ &}quot;Mayor Adams Will Officially Turn on Electricity for New 400-Watt Lamps," Key West Citizen, December 19, 1957.



Switch to an City Electric Synfrom the Key V Electric Clothes Dryer





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City Electric System

ELECTRICITY - TODAY'S BIGGEST BARGAIN

The 1944-1948 expansions to the Key West Diesel Plant were not enough to sustain the area's growing demand. A report by R.W. Beck detailed:

Our studies have indicated that the Key West power plant loads, with which we are immediately concerned, will expand from 5,920 kilowatts in 1950 to 7,560 kilowatts in 1954. Therefore, to accommodate this increase, we recommend that the City embark upon a program of installing a 3,000 kilowatt steam plant to be available by December 1950. 10

R.W. Beck's plan, which later became known as the Key West Steam Plant on Trumbo Road, got off to a controversial start. Questions regarding what type of generator to purchase, where to construct the new plant, who to hire as the contractor and how to finance the plant spanned the months between May 1950 and the steam plant's ground breaking on June 28, 1951.

Early reports indicate that R.W. Beck recommended the purchase of two 2.5- or -3-megawatt (MW) diesel generating units. ¹¹ By August 18, 1950, however, R.W. Beck advised purchasing two steam units. The City Commissioners and Utility Board went on record favoring a steam plant at an estimated cost of \$2.5 million. In a lengthy article, the *Key West Citizen* reported:

This plant, which will take two years to construct, will be able to serve the anticipated needs of the Island City for the next 28 years. It will also allow for the issuance of a "cheap" rate to the Lower Keys. The vote for construction of a steam plant was 3-1 in the city commission with Eisner voting "no" and Harvey passing. For the measure were Adams, J. Carbonell, L. Carbonell. Utility Board vote was 4-0 with Harvey passing. For the motion was Ernest Ramsey, Horace O'Bryant and Fernando Camus. Ramsey has been for steam all the way. But O'Bryant and Camus qualified their 'yes' votes by declaring that the city held the 'purse-strings' and they had no other alternative.

Beck's reasoning for preferring steam was: "Steam and diesel costs for the present load of the City Electric System is about even. But when loads get bigger, the economy and savings in steam are tremendous." 12

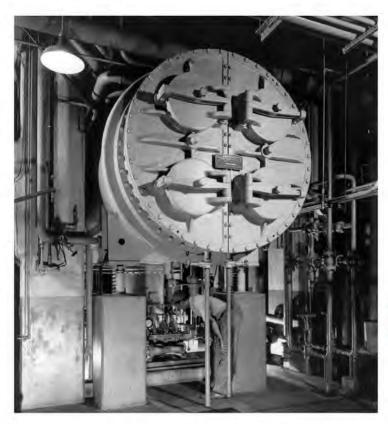
The Utility Board resolved to purchase two 5-MW steam units for the expansion. The next controversy was over the location for the new plant. In August 1950, the Key West Citizen reported, "The vexatious problem of where to place the new \$2,250,000 generation plant was aired at yesterday's meeting of the Utility Board." ¹³ The article explained that the Utility Board considered the site of the old dump, Raccoon Key (Key Haven), Cow Key and a site on the Atlantic side of Stock Island. In September 1950, the Board selected a site on the north side of Stock Island adjacent to the golf course; the site was formerly the old city dump. Then, in January 1951, the Utility Board reconsidered and settled on a tract of land on Grinnell Street and Trumbo Road. The Board purchased that property, which had previously housed the Armour Plant, from Norberg Thompson and A. Maitland Adams for \$35,000.

J.F. Pritchard Company was awarded the contract for constructing the steam plant, but Ivy H. Smith Company of Jacksonville entered protests against the Utility Board's decision. The Board had ostensibly awarded the contract to Smith, then later rescinded. Despite the controversy, the Utility Board signed the contract on January 18, 1951 with J.F. Pritchard Company.



View of the Key West Steam Plant on Trumbo Road in 1959

^{13 &}quot;Utility Board Debates Where to Place New \$2,500,000 Steam Plant on Stock Island," Key West Citizen, September 13, 1950.



Allis Chalmers steam turbine at the Key West Steam Plant

The final controversy lay in deciding how to fund the new power plant. Initially, the Utility Board went before the City Commission for a \$2 million bond issuance; it then backpedaled, stating that it wanted to limit plant expansion to \$500,000. Ultimately, the Board authorized the sale of \$3 million in electric revenue bonds that were issued at 3.45 percent. C.B. Harvey voted against the issuance of the bonds, asserting that the interest rate was too expensive. ¹⁴

In January 1951, while plans for the new steam plant solidified, power shortages loomed. By February, City Electric System had to borrow power from the U.S. Navy. "Breaking all records, the load at the City Electric System plant Saturday night was 7,530 kilowatts at 7 p.m.," reported the *Key West Citizen* on February 4, 1951. "The Naval Station provided 1,000 kilowatts and the Navy hospital 190, in Saturday night's all-time heavy load on the plant's facilities." In March, the Utility Board decided to rent a 1,100-kW portable diesel engine to boost the power supply until the new steam plant could meet the community's demands.

Construction of the new steam plant officially began at 7:00 a.m., June 28, 1951, when crews began drilling wells for the cooling water. During the construction, a fire in the storage building destroyed a large amount of electric and construction equipment. "The spectacular fire which destroyed a large amount of electrical and construction equipment, was confined to the end of the building which housed practically all of the instruments and electrical equipment to be used in the new electrical plant." ¹⁵



By December 1952, part of the plant was operational. "Half the \$3,000,000 steam electric plant is operating now and the other half will start running next week," C.A. Van Deursen, City Electric System manager announced. ¹⁶ On December 17, a faulty fan kicked out during a test period and stacks let out blasts of soot that covered structures along Caroline Street and as far as Simonton Street where the Post Office was located. "We will not have soot as a regular thing when the plant goes into operation," L.W. Whitmarsh, chief engineer at City Electric System, said. "Right now, with all the adjustments of the engines and the try-out period, there may be occasions when soot will come out." ¹⁷ Following the initial glitches, units one and two of the Key West Steam Plant operated from 1952 until 1978.

Above: City Electric System Steam Plant Employees

^{15 &}quot;Fire Destroys Equipment at Steam Plant," Key West Citizen, March 17, 1952.

^{16 &}quot;Steam Electric Plant Set for Full Operation Soon, with Power for Lower Keys by January," Key West Citizen, December 2, 1952.
17 "Soot Blanket over City 'Temporarily." Key West Citizen, December 18, 1952.

The year 1951 was busy for City Electric System. In addition to planning and constructing the Key West Steam Plant, the company's administrators, bookkeepers, billing clerks, typists and cashlers relocated to the Scottish Rite Temple Association Building at the corner of Eaton and Simonton streets in March. City Electric System customers continued to pay their bills at that location until 1981, when the offices moved to their present-day Service Building on James Street. The meter and line sections remained at City Electric System's original location on the corner of Duval and Greene streets. They were joined by the consulting engineers and contractors for the new steam plant. The Duval Street location was utilized until 1957 when the building on James Street opened.

Additionally, City Electric System began speculating about expanding its service area. The Key West Citizen reported, "Big Pine Line Priority," in headlines August 30, 1951. The news article indicated that State Representative Bernie C. Papy and City Electric System Manager C.A. Van Deursen secured a Federal commitment from the Defense Electric Power Administration for the wire to build the line. "It will be the beginning of a new era for the Lower Keys," Representative Papy said. "Everybody cooperated to obtain this [wire] priority — and we are all very happy about it."18 Almost a year later, in June 1952, the Utility Board awarded the construction of the new transmission line to Big Pine Key to Roy Richards Company of Georgia. The cost of the contract was \$148,848.



Customer Service Counter at Eaton Street building, c1950s

"Lights Go On In Lower Keys As Big Pine Line Gets
'Hot'" announced a headline in the Key West Citizen on March 11, 1953.

The lights went on, energized by the 35-mile long Big Pine Key power line, yesterday at 3 o'clock, bringing central power to the Lower Keys for the first time in history. In the nine months since the contract was let to Roy Richards to perform the work, real estate values on the Lower Keys have soared. In addition, subdivisions have been organized and put on the market in Summerland Key, Boca Chica and Cudjoe Key.

The Big Pine Line opened serving just 53 customers.

The 1950s and 60s were decades of vast expansion for City Electric System. The two 5-MW steam units were constructed and began operating; the Big Pine Line began serving the islands between Key West and Big Pine; and customers were using more power than ever. To keep up with growing demand for power the Utility Board expanded the Key West Steam Plant by installing three 16.5 MW steam units in 1957, 1963 and 1966.

Construction of the 1957 unit included building a control room that operated all three generating units and the rest of City Electric System's distribution system, including substations and feeder breakers. Nearly a year after the 1957 unit began operation, General Manager Merville Rosam commented on how much the new unit was necessary to meet customer demand. "We didn't do it any too soon," he said. "Last December 15 – three days before we got the new steam generator on the line – we had to cut off power to part of the city at a time. Cold weather shoved the load up to 19,000 kW on equipment supposed to carry 17,000 at peak!" 19

In 1953, some 60 employees formed Local 675, International Union of Operating Engineers, an affiliate of the American Federation of Labor. The employees organized to achieve a 40-hour workweek and a retirement plan. Additionally, on December 17, 1953, the city's municipal employees formed the Southernmost Federal Credit Union. Seven city workers and City Electric System General Manager Merville Rosam signed the charter as the first step to provide a federally controlled savings and loan organization for more than 200 municipal employees. Today, the Southernmost Federal Credit Union continues to serve employees and retirees.

City Electric System opened the Distribution Service Building at Grinnell and James streets in June 1957. The Service Building housed the engineering department, the operations and electrical system operating staff, and the controller and general accounting staff. It was also the main warehouse.





Field lighting at Nelson English Park

City Electric System continued to provide community service to the City of Key West by installing lights in the city's recreational areas. In August 1954, City Electric System installed light poles for the new Key West High School football stadium. A caption in the *Miami Herald* stated,

Workmen of City Electric System of Key West erect one of the tall light poles which will make the Key West High School football stadium one of the brightest in the South. A total of 240 bulbs each of 1,500 watts will be placed atop this and similar poles.

City Electric System received much positive publicity in August 1958 when it invited the community to an open house Key West Steam Plant. More than 1,500 people attended, and a Key West Citizen article on August 10 quoted several people who were impressed with the plant. One visitor stated, "The plant is magnificent and clean. It shows good management."

In 1959, the citizens of Key West were enjoying the many benefits of a public power system. City Electric System performed public service activities like installing the Wicker's Field lights, while offering low rates to its customers. On March 8, 1959, Horace O'Bryant, chairman of the Utility Board, announced that Key West had the lowest average electric rate in the State of Florida – \$10.50 per 500 kWh. The Federal Power Commission reported Key West's rate at \$11.03, but O'Bryant said it included a 53 cent fuel adjustment that had been dropped, but was not deducted from the reported figure. Tampa at \$10.56 per 500 kWh was reported as the state's lowest, but the adjusted Key West figure left Key West with the actual lowest at \$10.50. ²⁰

In April 1959, the Utility Board received kudos from the Key West Citizen on its decision to expand the distribution system to the Cudjoe Key missile tracking station.

The City Electric System, we think, deserves congratulations on its signing of the contract to supply power to the new Cudjoe Key missile tracking station. Electric System manager Merville Rosam told the Utility Board Tuesday that the cost of putting in the lines and equipment to supply the power would be a hefty \$15,000 or so – but that the income from the line to the missile watching post should be some \$6,000 or \$7,000 a month. This, we think, is an excellent example of foresight, just as the building of the power line to supply 'juice' to Big Pine a few years ago. ²¹

Generating capacity expansion continued when, in April 1965, the Utility Board dedicated the 6-MW peaking plant on Stock Island. The new plant consisted of three 2-MW generating units built by the Electro Motive Division of General Motors. The three units could be operated remotely and could be on-line and at full power in roughly 90 seconds. In 1966, City Electric System also installed a 2.3-MW diesel unit and, in 1969, added a 2.75-MW unit at Cudjoe Key. Additionally, that same year, a 2.75-MW diesel unit was installed at the Key West Diesel Plant on Angela Street, but that unit was moved to Big Pine Key in 1981. Gradually, all six high-speed peaking units were retired.

In 1962, City Electric System hired Allied Construction Company to construct a 69-kilovolt (kV) transmission line to connect the Key West Steam Plant and the new 13th Street (Kennedy Drive) Substation. ²² The line, designed to withstand 120-mph winds with gusts up to 180 mph, utilized pre-stressed concrete poles. The new transmission line, which traversed both land and water, was put to the test during the 1963 hurricane season.

Having withstood Hurricanes Ginny and Helena and their precursors, this line awaits further assaults of wind and rain out of the Pandora's box of the Caribbean and South Atlantic. The line was built only last year by the City Electric System of Key West, when the havoc of [1960's] Hurricane Donna was fresh in minds of the designers. They were determined that their work would not be swept away by future hurricane winds. ²³

The transmission and distribution systems continued to expand. In 1966, a 69-kV transmission loop was completed, running from the Key West Steam Plant to the Old Diesel Plant to the Kennedy Drive Substation. Additionally, in 1966, a 69-kV transmission line from the Kennedy Drive Substation to the new Stock Island Substation was completed. In 1968, Allied Construction Company also constructed a 69-kV transmission line to the new Big Coppitt Substation.

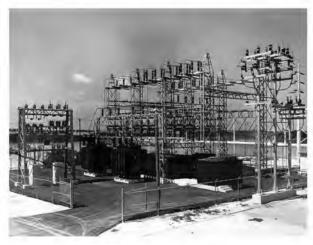
At City Electric System's 25th anniversary in 1968, the number of customers had grown from just under 4,200 at the time the city purchased the utility to 13,503 as reported in the 1967 annual report. Kilowatt hour sales grew from 6,781 in 1943 to 195,389,000 in 1967; and City Electric System's generating capacity had increased from 2,940 kilowatts in 1943 to 72,890 kilowatts in 1967.



Electrical Lines along Palm Avenue in the 1960s

The end of the 1960s proved to be a dark period for City Electric System. A Monroe County grand jury indicted City Electric System's manager, Merville Rosam, for allegedly embezzling public funds when he received more money for travel expenses than allowed under state travel law, and for allegedly conspiring to cheat the Utility Board in the purchase of six acres on Cudjoe Key for \$66,000 when the fair market value was only \$6,000. Following the grand jury indictment, Florida's governor also suspended three Board members. Mayor Kermit Lewin and Henry Haskins remained on the Board, and three new members were appointed — Bill Williams, Harold Bevis and Henry Lee III. Eventually, the new Utility Board selected a replacement manager — Joe Roberts, a City Electric System employee who had begun his career in 1943 as an oilman at the diesel plant on Angela Street.

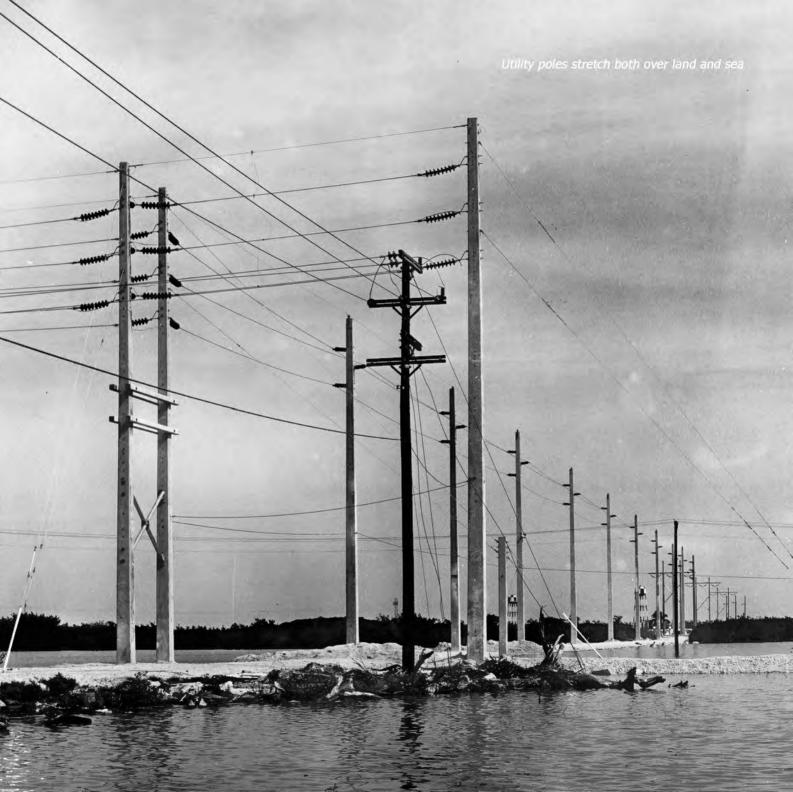
As a result of the scandal, the Florida State Legislature passed a new enabling act for the governing of City Electric System. This act called for the popular election of all five Utility Board members – the chairperson serving two years and the four members each serving four-year terms.



Kennedy Drive Substation

In 1969, City Electric System management established its Commercial Section to handle rate classifications and customer complaints. The Utility Board also recognized Local 1990, International Brotherhood of Electrical Workers, as the sole and official bargaining representative of non-management employees.

The 1970s got off to an exciting, progressive start for City Electric System. In July 1971, it mailed out its first computerized monthly bills. In November the following year, the Ralph Garcia Steam Plant began operating at the end of Front Street on Stock Island. But it wasn't long before City Electric System was once again in turmoil.



In 1971, the U.S. government announced the U.S. Naval Base in Key West, which accounted for 42 percent of City Electric System's revenues, was on the base closure list. The announcement prompted City Electric System representatives and numerous others from Key West to lobby the Base Closure Committee in favor of keeping the base open. Ultimately, the Committee recommended closing most of the base in Key West; however, the Committee proposed maintaining the Boca Chica Naval Air Station. Following the decision, Navy kWh usage dropped dramatically. Today, the U.S. Naval Bases in Keys Energy Services' service area account for 7 percent of the area's kWh sales. Following this sudden drop in kWh in the early 1970s, City Electric System found itself short on funds for important maintenance and with a debt service ratio that did not meet bondholders' requirements.

In March 1974, the Utility Board faced a hefty rate increase or a possible takeover by the trustees of the bondholders.

The governing board at the City Electric System is faced with an "either-or" situation this week. Either they vote to raise the basic overall power rate by 16.5 percent – or they face the possibility of a takeover by the trustees of the bondholders. "At the present time, it's a marginal operation," (William) Cates noted today, "in the months to come, unless the rates are increased, we will have to take drastic steps to be sure we keep up the debt coverage." ²⁴

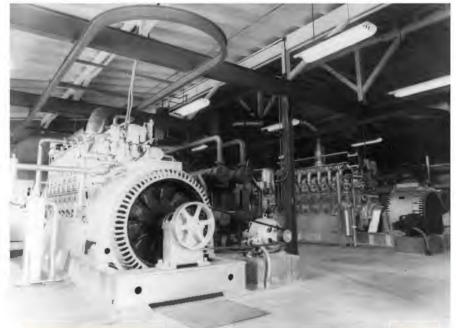
The Key West Citizen article quoting Utility Board Chairman William Cates went on to describe a steady decrease in kWh sales following a steady increase in fuel costs, a need for two overhauls on the Ralph Garcia Steam Plant, and a plethora of letters and phone calls protesting any rate increase.

In the end, the Utility Board voted to revise the rate schedule. The new rate schedule provided an overall increase in base revenues of 16.5 percent. Residential customers experienced a 10.7 percent increase; the military and general service customers experienced a 23.9 percent increase; the municipal rate increased 24 percent; and the commercial and street light rates remained the same.

Customers again experienced a rate hike in 1976 to raise an estimated \$593,000 toward \$1.3 million needed for improvements to the system. During that rate increase, residential customers' base rate increased 8 percent. That same year, City Electric System had the first taste of the power outages that were to become a way of life in the Lower Keys in 1978. On September 29, an outage resulted

from a fan malfunction at the Ralph Garcia Steam Plant. Despite conservation appeals, power was out from 5:52 a.m. until noon. Six hours later, a boiler tube ruptured. City Electric System crews scrambled to switch the load to the Key West Steam Plant.

Plagued by a series of problems with a generator at the Key West Steam Plant and a major tube failure at the Ralph Garcia Steam Plant, the system began experiencing brown outs in the summer of 1978. The power shortages lasted from July 28, 1978 through the first week of September.



Turbines at the Key West Steam Plant

The month of August 1978 was as hot and humid as any Key West August, and the System was plagued by brownouts, causing widespread discomfort and complaints on the part of the System's customers. The Arab fuel embargo of 1973 had sent the cost of fossil fuel oil skyrocketing. One of the results of this was that the System could no longer afford to maintain a 'spinning reserve,' which, in the event of a blackout or brownout, enabled electric power to come back on line quickly. This lack of a spinning reserve made the brownouts last longer. ²⁵

As a result of power supply problems, the Utility Board approved the emergency purchase of a \$4.5 million, 22-megawatt gas turbine generator. The General Electric turbine was installed next to the Key West Steam Plant in early 1979 and helped alleviate the power shortage. "The unit should help guarantee against a recurrence of the intermittent localized blackouts the city suffered last summer," the Key West Citizen reported. ²⁶



The Watts Up employee newsletter made a return in the 1970s

The power shortages and steep increase in the costs of purchasing diesel fuel prompted the Utility Board to undertake a search for alternative methods of generation. Three separate engineering studies commissioned by the Utility Board reached the same conclusion: City Electric System should construct a transmission line to the mainland power grid.

Lest the 1970s go down in history as a wholly negative decade for City Electric System, remember that on October 22, 1975, Rose Arnold was sworn in as the first female Utility Board member. Mrs. Arnold served out the remaining term of her late husband, William Arnold. The Utility Board also voted to name the service building on James and Grinnell streets the William Arnold Service Building in his memory. Additionally, in June 1976, City Electric System installed seventy 1,000 watt metal halide floodlights for the Key West High School stadium.

The close of the 1970s was a good time for the employees of City Electric System. The employee newsletter, Watts Up,

made a return, and the Utility Board began naming an Outstanding Employee of the Quarter. On December 8, 1979, City Electric System hosted a Management vs. Union softball game at Gerald Adams Elementary School. The management team won both of the seven-inning games in the double header. "A capacity crowd of close to 100 cheering fans – including a dog and two cats – witnessed the epic struggle." ²⁷

The early 1980s were busy for the meter and commercial sections. In March 1980, City Electric System issued a pamphlet warning customers against meter tampering. An article in *Watts Up* said, "In recent years, the whole nation has become more conscious of energy and its costs. And a new kind of criminal has emerged – the electricity thief. The first thing people who tamper with an electric meter should know is that they're flirting with danger." ²⁸ In October 1981, the meter section began a meter reseal program that included numbering and color-coding each seal. Ralph Betancourt, meter section supervisor, explained that the program was designed "to establish better control of our meters and to cut down on energy diversion. We want to protect our honest customers from having to pay for stolen energy." ²⁹

Additionally, City Electric System began promoting energy conservation in the early 1980s. In March 1980, customers were offered an energy analysis. The service, which is still available to all customers at no charge, provides customized recommendations for energy conservation. In addition to creating the energy analysis program, City Electric System instituted a plan to convert all street and outdoor lighting from mercury vapor to high-pressure sodium vapor bulbs.

City Electric System continued to provide community services in the early 1980s. Crews constructed the lighting system at Peary Court Field, the home of the Girls Baseball League, installed a temporary lighting system at Wickers Field and designed a lighting system for the Bayview Park tennis courts.

On September 11, 1981, City Electric System closed the collection and customer service offices at the Scottish Rite Temple on the corner of Eaton and Simonton streets and moved the sections to the William Arnold Service Building. A caption in the October 1981 Watts Up states, "Collection Office staffers gather to wrap up 31 years of a CES tradition."

In December 1981, Thomas C. Kelly, a City Electric System employee who joined the staff in 1948 as a meter reader, was named manager. A short time later, on March 10, 1983, Kelly passed the reins to Robert R. Padron. Padron came to work at City Electric System in 1961 as a planner/estimator in the engineering section.



In a show of support for public power, City Electric System employees and customers turned out en masse to a Key West City Commission meeting June 4, 1986, to protest a utility takeover bid. The city commissioners rejected the takeover bid from Montenay International.

By far, the most significant date in the utility's history is May 8, 1987 – the day the utility interconnected to the mainland power grid. The story of City Electric System's transmission line,

more commonly referred to as the tieline, to the mainland begins in the late 1970s when three engineering reports recommended interconnecting to the mainland power grid. City Electric System went to the Key West City Commission for approval of a \$50 million bond issuance and approached the Florida Keys Electric Cooperative, the utility that serves the Upper Keys, for an agreement to wheel 50 MW through their transmission lines. The City Commission granted approval of the bond issuance in November 1980, but negotiations with the Florida Keys Electric Cooperative proved to be more of a challenge. "Negotiations with the Co-op were prolonged," Robert Padron said. "Agreement was reached on the courthouse steps," he added. Negotiations between the two utilities had come to a standstill; it looked as if the utilities would have to face off in a hearing before the Public Service Commission in Tallahassee. Padron said he and then Mayor Richard Heyman went to Key West International Airport on New Year's Day 1985 to catch a plane to Tallahassee. Then they received word that the attorneys for the two utilities had agreed to go back to the negotiating table. A final agreement for wheeling power over the tieline was signed in February 1985, and the tieline project moved forward.



One of many tieline poles in Keys Energy Services' service area

While negotiations were underway with the Florida Keys Electric Cooperative, City Electric System moved forward with the construction of the 138-kV transmission line. Construction of Phase I – from Cudjoe Key to Big Pine Key – began in January 1981. Construction of Phase II, which included the transmission line from Big Coppitt Key to Cudjoe Key and the substation at Big Pine Key, began in September 1983. By August 1984, Phase I and II were completed.

In the fall of 1984, City Electric System awarded the contract for Phase III of the tieline to Kohler Construction Company. Phase III included some 16 miles from Big Pine Key to Knights Key with more than seven miles over open water.

While construction of Phase III of the tieline was underway, City Electric System constructed a state-of-the-art control room on the second floor of the James Street Service Building. Remote operations of the diesels and of the system's transmission and distribution system moved from the Key West Steam Plant to the new control room.



City Electric System Employee Terry O'Dell

On September 24, 1986, the Utility Board approved creating six new positions – five power system coordinators and one power system supervisor. All City Electric System employees had an opportunity to complete the five-month training course composed of audio-visuals and correspondence courses. City Electric System management encouraged all employees to take advantage of the training and provided employees with an incentive. Employees who completed the course and were selected for one of the six new positions were entitled to \$400, and employees who completed the course but were not selected for the new positions received \$800. Fourteen employees completed the more than 200-hour course. From the fourteen, the Utility Board selected six employees to take on the new and important jobs of deciding whether to produce or purchase power, and where to purchase power in order to provide City Electric System with the greatest economic savings.

May 8, 1987, City Electric System's tieline to the mainland power grid was energized. Employees Frank Cartonia and Richard Castillo stood by at the Big Pine Key Substation, while a crowd gathered in the Control Room. Terry O'Dell, one of the new power system coordinators, harmonized with Cartonia and Castillo to "sync in" at 1:56 p.m. Employee, and future general manager, Larry Thompson remembered "there were shouts of 'we're in,' and everyone was congratulating each other."

At that time, the Utility Board made a commitment to maintain 100 percent backup generation. Utility Board members likened the tieline to a 130-mile extension cord that could fail, especially in the hurricane-prone Florida Keys.

The tieline has enabled the utility to purchase less expensive power from the mainland. Additionally, the utility has partial ownership, through a contract with Florida Municipal Power Agency (FMPA), of a coal-fired power plant in Orlando, Stanton Energy Center Unit 1, entitling City Electric System to about 12 MW of power. During the 1988 fiscal year, the first full year operating with the tieline, ratepayers saved \$3,932,209 compared to what they would have paid had the electricity been completely generated by City Electric System. ³⁰

Concerned about the major changes in operation that the new tieline would affect, the Utility Board hired David P. Kelly and Associates of Atlanta, a management consulting team, in 1986. The consulting team recommended restructuring City Electric System's work force to operate more efficiently with the new tieline. The plan called for establishing four departments – operations, production, finance and customer services – and for reducing the work force from 217 to 170. Under the "Kelly Plan," the work-force reduction was achieved through attrition; no employees were laid off.

In September 1987, 23 City Electric System employees from the line, engineering and electrical sections revamped the lighting at Wickers Field. Over a two-year period, City Electric System erected four banks of twelve metal halide lights. The City of Key West paid for the lights, but City Electric System donated the labor, about 360 person-hours.

On December 12, 1987, City Electric System employees gathered at the new Medina Line Building at the Stock Island Generation Facility to dedicate the building in memory of Rafael Tony Medina, a City Electric System journeyman lineman who had fought a long and courageous battle with cancer.



Removing stacks from the Key West Steam Plant

In order to meet the 100-percent backup generation commitment, the Utility Board decided, in 1988, to purchase two Colt Pielstick 9.6-MW quick-start diesel generating units from Fairbanks Morse. To fund the project, the Utility Board issued \$22 million in electric revenue bonds. To meet the bond ordinance, the Utility Board had to raise rates 6.68 percent. Extra funds from the rate increase were placed into a rate stabilization fund.

With two new medium-speed diesel generating units in operation, the Utility Board voted to officially retire the Key West Steam Plant. Actual retirement began in 1978 when City Electric System stopped using Units 1 and 2, while the other three units operated throughout the 1980s. In 1987, City Electric System stopped using Unit 5 after a fire in the front end damaged the unit; it was never repaired. In 1990, the decision was made to stop using Units 3 and 4. The units were costly to run and maintain to environmental permitting requirements; moreover, residents in the area complained of soot fallout from the plant. City Electric System allowed the permits to expire, and the Steam Plant had its "last hoorah" in May 1991.

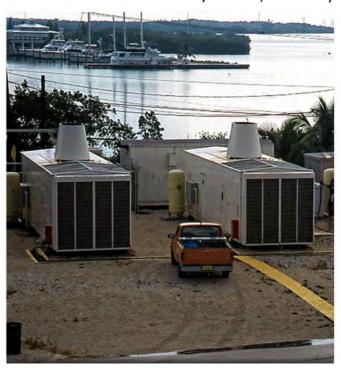
At that point, City Electric System's Production Department worked on the formidable task of planning the Steam Plant's decommissioning. During 1992, eight critical projects took place. Removing the stacks, the most noticeable phase, sent boaters, who for years had used the soaring stacks as a guide for returning from the Atlantic and the Gulf, in search of a new landmark. And for those accustomed to seeing the stacks, their removal gave the plant's closing finality.

With the close of the Key West Steam Plant, the only generation remaining in Key West was the 22-MW gas turbine. In order to maintain reliable service in Key West, City Electric System decided to construct a second 69-kV transmission line linking the Stock Island generating facilities to Key West. With one 69-kV transmission line already in place, the second line, which cost \$1,249,600, satisfied the need for a dual feed from Stock Island to Key West. If one line failed for any reason, the utility

would still be able to provide electricity to customers in Key West through the alternate line. ³¹

In 1991, City Electric System took a major step toward securing power supply through 2012 when the Utility Board voted to enter into a long-term power supply agreement with Florida Power & Light (FP&L). "The agreement for firm capacity and energy...will provide CES an assured firm power supply, improved reliability and at a substantial savings compared to other options investigated," City Electric System's consultants, Southern Engineering stated. 32 Under the agreement, City Electric System receives a firm 45 MW from FP&L, and the amount of power can increase as much as 10 percent a year. Additionally, City Electric System subscribed for partial ownership in Stanton Project II, a coal-fired plant near Orlando.

City Electric System and the Florida Keys Electric Cooperative entered into a long-term joint



High Speed Diesel Peaking generators at the Stock Island Generating Facility

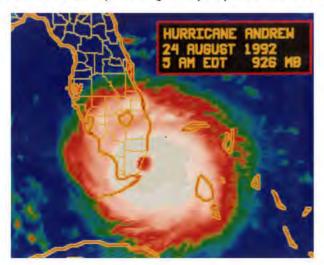
investment transmission agreement in December 1991. Under the agreement, City Electric System became part owner in the transmission line in FKEC's service area. Both utilities are responsible for a portion of the costs and entitled to a portion of the system's capacity.

Since 1987 when we began utilizing the 138-kilovolt tieline, we have essentially rented "space" on FKEC lines. We have paid for this rented space, we have been free from maintenance responsibility; and we have had no guarantees that the line will be available to us in the future. Now, that we have become joint owners, we can feel more comfortable in the guarantee that the line will be available to us long into the future. ³³

Under the agreement, City Electric System and Florida Keys Electric Cooperative built a new 138-kV transmission line to replace an existing 69-kV transmission line along U.S. Highway 1 from the Monroe County Line to Tavernier. Construction began in August 1993, and increased electric transmission capacity and reliability into the Keys, while reducing costs to both City Electric System and Florida Keys Electric Cooperative.

In February 1992, the Utility Board decided to change its policy of maintaining 100 percent back up generation to the tieline. Considering the extreme costs of building and maintaining new generation, the Utility Board concluded a sounder policy would be to maintain 70 percent backup generation to the tieline, as recommended in a study performed by the Southern Engineering Company of Atlanta.

Hurricane Andrew was, at that time, the nation's most devastating natural disaster. It was August 24, 1992, when Hurricane Andrew unleashed its fury upon South Florida. At 4:45 a.m., Andrew's winds ripped down a portion of the tieline, leaving the people of the Lower Florida Keys to rely on



Infrared satellite image of Hurricane Andrew

³³ Utility Board of the City of Key West, "Agreement with FKEC benefits CES," Watts Up Employee Newletter, February 1992.

local generation, which had a total capacity of 78 MW. Before the hurricane, City Electric System customers had been demanding as much as 94 MW. City Electric System turned to the community with one message: conserve. The community came through, and for ten long, hot days, the community conserved enabling City Electric System to avoid rotating power outages and to sell small amounts of power to the Florida Keys Electric Cooperative. While the community conserved, City Electric System linepersons worked to restore the tieline with Florida Keys Electric Cooperative and Florida Power & Light crews. The tieline began operating again on September 4. As soon as the tieline and full power in the Keys were restored, line and engineering crews traveled to Homestead and assisted with the rebuilding effort.

Before the close of the year, City Electric System was awarded its first Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association of the United States and Canada (GFOA). This award, which the utility continues to receive, recognized City Electric System for its comprehensive annual financial report. GFOA's director remarked, "the Certificate of Achievement is the highest form of recognition in the area of governmental accounting and financial reporting. Its attainment represents a significant accomplishment by a government and its management." ³⁴

City Electric System celebrated its 50th anniversary in 1993. During the anniversary year, the utility received news from the Federal Energy Regulatory Commission that ordered Florida Power & Light to end the discriminatory practice of not letting other electric utilities use FP&L's high voltage transmission system in the same manner as it does. It ended a long-time anti-competitive practice that FP&L employed of charging other electric utilities a higher price for more restrictive transmission service that it did for itself. The ruling, in effect, enhanced competition and promoted efficiency in the electric utility business by making transmission use and transmission pricing fair for all utilities in Florida. It held down rates for both commercial and residential customers.

In 1994, City Electric System introduced "Budget Billing" as an additional service to their customers. The innovative program levelized customers' electric bills so they no longer experienced peak bills in the summer and low bills in the winter months. Effectively, it allowed customers to better budget throughout the year.



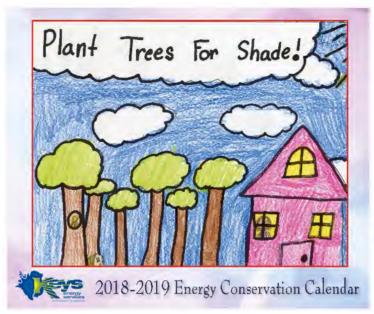
An additional program launched that same year was the "Tree Power Program," which encouraged City Electric System's customers to plant trees, away from power lines, to provide shade. The program was unveiled with a television commercial, newspaper advertisements and a mass brochure mailing. A free native tree giveaway, a program that the utility continues to offer today, was also established.

With growth and development at the utility came organizational changes. To fall in line with other utilities around the state, City Electric System opted for a re-organization in 1994 in an effort to maximize efficiency and save money. Staffing levels were reduced from 192 employees to 164 employees, through attrition, not through layoffs.

The early summer months of 1994 were uncomfortable ones for many of City Electric System's customers. Frequent and unusually long power outages occurred as a result of aging insulators along a portion of the tieline between Islamorada and Coco Plum. By June, customers experienced seven tieline outages that lasted a total of 407 minutes. Of the seven outages, four were caused by insulator failures. Because of the continued power outages, City Electric System and Florida Key Electric Cooperative established an emergency \$1.7 million program to replace the problem insulators. In addition, the two utilities began work on a \$14.6 million project to construct a second tieline between Florida City and Tavernier to act as a redundant line. ³⁵

During the turbulent summer of 1994, the Utility Board named Leo Carey as the new general manager of City Electric System following Robert Padron's retirement. Padron spent 33 years with the utility, and under his supervision many of the major changes to City Electric System took place, most notably the interconnecting of the utility to the mainland power grid via the tieline. It did not signal the end of his involvement with the utility; he was ultimately elected chairperson of the Utility Board.

Even with staffing reductions and changes, City Electric System remained focused on saving its customers money by sharing ideas for energy conservation. Students from area elementary schools submitted drawings demonstrating how they conserve energy. Thirteen pieces of artwork were selected to illustrate the first calendar that City Electric System produced in 1996. ³⁶ In addition, students from Horace O'Bryant Middle School made two commercials that aired on television in the summer of 1995 urging people to conserve energy by carrying out simple tasks such as checking their refrigerator gaskets and weatherstriping doors and windows.



Artwork created by local school children is featured in the annual calendar

The summer months of 1995 and 1996 proved difficult for City Electric System's customers. They experienced voltage drops caused by faults in the tieline, which damaged their electronics. City Electric System, in partnership with Florida Keys Electric Cooperative, installed a new relay in the Marathon Substation to force power outages when the voltage dropped below 80 percent of normal voltage.

City Electric System named Larry Thompson as the new general manager in 1996. Prior to his promotion, he served as the Assistant General Manager/Operations Manager. Thompson headed the utility until 1999.

In 1997, the Utility Board agreed that City Electric System would join the Integrated Dispatch and Operations Project (IDO), coordinated by the Florida Municipal Power Agency of Orlando, as a way for the utility to pool its resources with eight other Florida municipal electric utilities in a strategic alliance. All nine utilities would save millions of dollars in fuel and purchase power costs. Larry Thompson remarked, "The savings City Electric System will achieve are outstanding...but more importantly, City Electric System is strengthening its position in the electric utility industry." The projected saving for the first seven years of its IDO affiliation was more than \$15 million.

In 1997, the Utility Board resolved to reduce the on-island generation requirement from 70 percent to 60 percent. It also elected to retrofit the Ralph Garcia Steam Plant as a synchronous condenser, and moved the combustion turbine from Key West to Stock Island in an effort to centralize City Electric System's generation. ³⁸ City Electric System upgraded the Thompson Street Substation, which resulted in more reliable electricity in Key West.

Only a year after committing to join the IDO, City Electric System finalized the agreement that led to the major change in its operations that further reduced power supply costs and strengthened the utility's position in the industry. City Electric System integrated its operations with nine other municipal utilities in Florida Municipal Power Agency's IDO, which was formally named the All-Requirements Project (ARP). Along with nine other utilities, City Electric System pooled its generation and purchase power contracts – about 118 MW – with the other ARP resources of about 1,000 MW. ³⁹ City Electric System continued to own, operate and maintain its units, but FMPA was responsible for scheduling how the units were used.



New combustion turbines arriving by barge at the Stock Island Generation Facility

Two new combustion turbines arrived from Houston by barge at the Stock Island Generation Facility in March 1998. The turbines had the ability to supply City Electric System customers with an additional 36 MW of electricity. The \$10.2 million cost of the units was shouldered by FMPA as part of its agreement with City Electric System to provide all the utility's energy needs. 40

³⁸ City Electric System In-House Document, May 29, 1997.

³⁹ City Electric System Press Release, April 21, 1998.

⁴⁰ City Electric System Press Release, March 3, 1998.



Hurricane Georges hit the Florida Keys on September 25, 1998 damaging homes, uprooting trees and plunging the area into darkness. City Electric System was faced with the daunting task of restoring power to literally every customer from Key West to Sunshine Key. The tieline sustained extensive damage and, in some areas, it was lying on the ground and in the water. Sixty-nine insulators were broken and required replacement. City Electric System's crews strung twenty-one miles of new primary line, ten miles of new secondary lines, and twenty-two miles of new service drops.



Damage sustained during Hurricane Georges

In the meantime, City Electric System fired up the backup generators at Stock Island in order to restore power to essential services. Crews inspected all substations and the transmission line that provides power from Stock Island to Key West. By the end of the following day, lights were on for the hospital, the Emergency Operations Center, and a handful of essential services along North Roosevelt Boulevard. Power was eventually restored to City Electric System's customers between two and twelve days after the storm. That was due to the hard work of its employees and from other utility crews who arrived in the Keys after the storm.

The following years saw much work progress at City Electric System. Warehouses at the Stock Island Generation Facility were razed to make way for more serviceable buildings. Multiple improvements were also made in the Transmission & Distribution section. This included replacing 500 ceramic insulators with polymer insulators spanning 15 miles and 180 poles. Upgrades to distribution lines along Watson Boulevard on Big Pine Key were made in order to increase capacity and balance the electrical load. This was carried out under the direction of City Electric System's newest general manager, Raymond Rodriguez, who served from 1999 until his retirement in 2001.



U.S. Highway 1 Substation

The White Street Substation replaced the Key West Steam Plant Substation in 1999, which was located at the corner of Grinnell and Caroline streets. The new substation improved reliability in Key West, and prepared City Electric System for the increased electrical demands. 41

Raymond Rodriguez's successor was named in late 2001. Carl "Skip" Jansen, who had been with City Electric System for over ten years, took the helm early the following year. He worked previously as the Production Manager for several years. During his first year, the Big Pine Key Service Center was opened. It was intended to save customers the trip to Key West for customer service. During its first year in operation, it assisted 1,800 customers and collected more than \$1.5 million in revenue.

Construction of City Electric System's new \$5.7 million transmission line between Stock Island and Big Coppitt was completed in 2001. The line operated in parallel with the existing transmission line between the U.S. Highway 1 Substation on Stock Island and the Big Coppitt Substation to increase reliability by offering redundancy. In total, 85 new poles were erected, insulators installed, transmission conductor strung and existing distribution lines and communications facilities relocated to the new poles. 42

City Electric System Press Release, September 9, 1999.
 City Electric System Press Release, January 23, 2001.

One of the most significant changes to the public utility during Skip Jansen's tenure was the official name change of the utility. On May 1 and May 2, 2002, City Electric System held two unveiling ceremonies, the first at the Service Building on James Street and the second at the Big Pine Service Center. The ceremonies recognized the name change from City Electric System to Keys Energy Services. The name change better reflected the customers served and services provided. A new logo was also unveiled.



Unveiling the new logo at the Service Building on James Street

The newly renamed Keys Energy Services continued to streamline administrative processes, while also providing customers with improved service. In 2003, Keys Energy Services allocated \$4.8 million for capital projects to increase reliability including the construction of a new substation on Cudjoe Key. Linemen also carried out repairs to Line 4 that runs over water from Big Coppitt to Key Haven.

That same year, Keys Energy Services held an interagency class focused on tree trimming safety. Several employees of the utility, along with employees of the City of Key West and Monroe County, trimmed trees along McDonald Avenue and Indigenous Park. Additionally, infrared surveys of lines within the service area were carried out and as well as renovations to poles and lines.

Efforts to improve power reliability were validated by Keys Energy Services' statistics for 2003. During that year, there were 11 transmission outages (only two of them were within the service area), lasting an average of 93 minutes. There were 25 distribution feeder outages, which set a 12-year record low, and power outages lasted, on average, 47 minutes. Distribution outages fell below State and National averages.

Endeavoring to give back to the local community, Keys Energy Services and the City of Key West dedicated one of its four pocket parks in the summer of 2003. One, known as the Alvin Frazier III Memorial Park, is located at the corner of Flagler Avenue and 18th Street. It is on the site of a former substation that housed industrial equipment for distributing electricity to the surrounding neighborhood. Later that year, the Grinnell Street Substation was retired. The transformers were removed that July to make way for another pocket park.

The Key West Steam Plant building, which had been vacant for over two decades, had long been a subject for debate. Keys Energy Services began issuing Request for Proposals as early as 1997, with no viable proposals submitted until several years later. Ed Swift of Old Town Key West Development submitted the first proposal, a second proposal came from Sentient Enterprises, led by Steve Uiterwyk, while a third from Advanced Housing Corporation was also presented. All proposals focused on mixed use of the property with both workforce and luxury residences.

The Utility Board accepted the proposal from Old Town Key West Development in 2003 to turn the Key West Steam Plant and adjacent property into 19 luxury and 38 affordable residential units. The groundbreaking ceremony took place in December 2004. By early 2005, demolition of the one million gallon tank begun, followed by the demolition of what was left of the stacks on the building's north side. A 99-year lease on the building commenced in November 2008, and the units were soon ready for occupation. In 2018, the Utility Board unanimously approved the sale of the Steam Plant Condominium building and property for \$7.25 million to SPGL, LLC.

Keys Energy Services received the "Golden Tree Award" in 2004 from the American Public Power Association for reaching its goal of planting more than 27,500 trees, or one for every customer via its tree giveaway program. It was one of a handful of utilities around the country that achieved the targeted goal.



A little over two months after the start of hurricane season, Hurricane Charley threatened the Lower Florida Keys in 2004. It was a strong Category 2 storm as it passed over the Dry Tortugas on August 13. Gusts to 60 mph were felt in Key West; the winds toppled a few trees and power lines. A boat, knocked loose by strong waves, struck a power transmission line, causing widespread power outages from Marathon to Key West. Power was restored to customers relatively quickly, and Keys Energy Services crews were dispatched to Wauchula and Kissimmee, Florida, to help restore their power grids. Hurricanes Frances and Ivan affected mainland Florida that same hurricane season and Keys Energy Services linemen were on hand in Clewiston to assist in power restoration.

In 2004, Mona Clark was selected to fill Dr. Otha Cox's seat on the Utility Board, a position the latter held until his death. She was only the second woman to be appointed to the Board. Clark ran for the seat at the next election, giving her the distinction of being the first elected female to the Utility Board.



KEYS' Lineman makes repairs to the tieline near the White Street Substation

While upgrades to Keys Energy Services' operations continued into 2005, its focus was on the most active hurricane season in history. Hurricane Dennis was the first to pass to the westward side of the Keys, causing some flooding and widespread power outages. The following day, roughly 50 percent of Keys Electric Services' customers were re-energized. In August, Hurricane Katrina passed north of the Keys, but brought wind gusts and several inches of rain. It was tracked closely by Hurricane Rita, which skirted the Lower Keys in late September.



Stock Island Combustion Turbine #4, owned by Florida Mucinipal Power Agency

By far the most devastating storm to hit the Florida Keys in 2005 was Hurricane Wilma. Some areas were inundated by a 7-foot storm surge. Once again, Keys Energy Services was quick to assess and repair damages to the electricity system.

Putting hurricane season behind, headway on improving system wide reliability continued. In November, Keys Energy Services and the Florida Municipal Power Agency broke ground on Stock Island Combustion Turbine #4, a unit that was operational by September 2006. The turbine cost \$30 million and added 47 MW of local generation to Keys Energy Services on-island generating capabilities. The unit is owned by FMPA and operated by Keys Energy Services.

Skip Jansen, who was Keys Energy Services' general manager since 2001, retired at the end of 2005. His successor was Lynne Tejeda, the utility's first female general manager. She began with the company in 1989, serving as its Public Information Officer, Communications Director, and then the Assistant General Manager and Chief Operating Officer.

Following the 2004 and 2005 hurricane seasons that were damaging to electrical systems throughout Florida, the Florida Public Service Commission (PSC) passed an order which required "the cost-effective strengthening of critical electric infrastructure to increase the ability of transmission

and distribution facilities to withstand extreme weather conditions, and reduce restoration costs and outage times to end-use customers associated with extreme weather conditions." ⁴³ Keys Energy Services developed a program to replace inaccessible poles and lines in backyard easements with poles along roadways. Power restoration after a storm would be much faster with facilities easy to access. A total of 140 poles were installed, which affected over 234 customer risers. The easement program tackled these upgrades and the utility offered rebates to affected customers to help compensate for the cost of moving meter centers.

The easement program was part of a larger project spearheaded by Keys Energy Services. The utility also commenced a costly multi-year 'storm hardening' program that called for improved construction standards and fortifying its infrastructure. Keys Energy Services developed a plan to comply with PSC orders for a strong, reliable system that included the testing and replacement of poles. In 2006, a total of 14,000 poles were tested, with 3,300 replaced over the next five years.

In order to fund the storm hardening upgrades, the Utility Board approved the continuance of the Keys Energy Services' Refunding and Capital Improvement Revenue Bonds in 2006. The \$42 million revenue bond issue was intended to provide necessary funding for the capital improvements within the utility's system.

In addition to pole replacement, Keys Energy Services utilized the bond issue for the construction of a new substation on Stock Island to satisfy growing demand, construction of new feeders at the Big Pine Key Substation to satisfy increasing load, replacement of substation transformers, conversion to a remote electronic meter reading system, installation of a fiber optics communications infrastructure and the installation of fin fan coolers at the Stock Island Generating Facility.

Keys Energy Services, in conjunction with the Florida Department of Transportation and the City of Key West Engineering Department, oversaw a project in 2007 to replace incandescent traffic lights along U.S. Highway 1 and the majority of Keys Energy Services' service area with Light Emitting Diode (LED) traffic signals. Switching all of the seventy-eight traffic lights to LED conserved over 140,000 kWh per month.

⁴³ Easements and Electrical Facilities, Executive Summary, http://www.KeysEnergy.com/easements_main.php

The City of Key West and Keys Energy Services dedicated the Gato Village Pocket Park, located on the corner of Louisa Street and Calais Lane, in August 2008. The 1950s-era substation was de-energized in 2005 and Keys Energy Services removed all substation equipment, planted native trees, added mulch and installed a decorative perimeter fence. The park was dedicated in honor of the Eduarto H. Gato family and the village of homes that were built in and around the site to house cigar makers who worked in the Gato Cigar Factory.



Gato Village Pocket Park dedicated in August 2008

Technology has played a vital role in Keys Energy Services' last twenty-five years. Not only does it shape customers' expectations, it also allows Keys Energy Services to increase reliability. With the rise in computers, smart devices and smart appliances that react to small fluctuations, power quality has had to increase. That is coupled with the customers' need to conduct business online, whether paying a bill or inquiring about power outages. The utility first launched its website in the mid-1990s, with major redesigns taking place in 2002 to coincide with its name change from City Electric System to Keys Energy Services. Social media sites such as Facebook, Twitter, YouTube and Instagram have transformed the way in which the Keys Energy Services gets information to its customers.

Accordingly, in order to keep customers informed with real-time outage information, Keys Energy Services launched an online outage tracker in 2008 accessed via its website. The feature not only allowed customers who were suffering from power outages to understand the cause and location, it also provided access to the status of power to customers that evacuated for storms, aiding in decisions on re-entry into the Keys.



Another technological expansion was the marketing and leasing of Keys Energy Services' fiber optic communication to local governmental agencies including the City of Key West and Monroe County's Emergency Operations Center. In February 2007, the Utility Board authorized Keys Energy Services to proceed with the deployment of a 96-strand fiber optic network within its service area for high speed data communications between substations and field devices. It also provided an additional revenue stream and services to the community. The leasing of fiber optics to local governmental agencies helped defray costs to Keys Energy Services and offered a benefit to agencies that would not otherwise have access to it. 44

Keys Energy Services launched paperless monthly energy bills that same year. Customers reduced the environmental impact by opting for paperless billing; they not only saved the paper, they also saved on Fver postage, gas and their own personal time. Keys Energy Services also debuted a rebate program for energy-efficient products including solar water heaters, programmable thermostats, washing machines, refrigerators and central air conditioners. The successful and expanded rebate program is still offered as part of its "Growing Greener Every Day" initiative.

Keys Energy Services energized a new \$2.5 million 42-MW substation on Second Street in Stock Island in June 2009 in an effort to handle the growing demands of that island. It provided local capacity and growth potential for the next thirty years, while also serving as a backup to the U.S. Highway 1 Substation.

The American Public Power Association repeatedly recognizes Keys Energy Services as a Reliable

Public Power Provider (RP3). The RP3 designation is bestowed on public power utilities that demonstrate proficiency in four key disciplines: reliability, safety, training and system improvement. The award is presented in three categories; in 2010, Keys Energy Services received the diamond award, the highest ranking. It was one of only six utilities in the country to achieve that designation. General Manager Lynne Tejeda remarked that the award "is a testament to the quality work our employees do every day in helping to power Reliable Public paradise and KEYS' customers should be extremely proud of their utility." 45



Power Provider

In an effort to consolidate operations and save approximately \$300,000 per year in expenses, the Utility Board voted to close Keys Energy Services' Big Pine Key Customer Service Center in May 2010. That was owing to the increased customer reliance on phone service and Keys Energy Services' website. A growing number of customers also began utilizing automatic bill pay, having monthly bills drafted directly from checking/savings accounts or credit cards.

Money saved in customer service reduction helped fund reliability improvements to the tieline. A multi-year pole restoration project worked its way along the tieline from the Lower Keys to Key West where contractors fortified pole foundations. The utility also began re-wiring three miles of the tieline constructed in 1962, spanning the distance between the Kennedy Drive and White Street Substations.

After nearly 25 years of utilizing the tieline, it was agreed that Keys Energy Services, in partnership with Florida Keys Electric Cooperative and the Florida Municipal Power Agency, would increase the tieline's capacity. The \$12 million project increased the 277 MW import capacity to 320 MW, the maximum the tieline was designed to carry. The project also allowed Keys Energy Services to run less local generation during the summer months which had been needed for capacity. The project which utilized static var compensation technology also improved power quality.



Contractors make overwater repairs to tieline poles which help customers stay connected to the mainland



In 2009 and 2010, Keys Energy Services and the Florida Municipal Power Agency opened discussions on transferring the former's generation assets to the latter under an arrangement known as True All-Requirement Project (TARP). At the time TARP was approved, FMPA owned Combustion Turbines 2,3, and 4 at Stock Island, while Keys Energy Services owned Combustion Turbines 1, MSD 1 and 2 and three high speed peakers. The Agency was paying Keys Energy Services to operate and maintain its three units. With the 2011 agreement, the Agency purchased the six units and hired Keys Energy Services to operate and maintain all of them. Through the arrangement, the Agency has full control over the units operations unless the tieline is inoperable and then Keys Energy Services determines how to use the units. ⁴⁶ The Stock Island Generating Facility can produce 111 MW.

Keys Energy Services was awarded a Clean Energy Grant from the State of Florida in 2011 totaling \$770,000. The State funded approximately \$434,000 of the total grant, with the utility rounding out the difference with matching funds. The grant funded six projects; the installation of an energy management system to control lighting and cooling at Service Building, the construction of an estimated 34 kW solar photovoltaic system on a warehouse at its Stock Island Generating Facility, it erected two wind turbines at the Cudjoe Key Substation totaling 4.8 kW, it offered \$100,000 in rebates to qualifying customers who purchased energy efficient appliances, it provided residential energy surveys over 18-months, and it hosted three workshops for commercial customers to learn how to implement energy efficiency in their businesses. ⁴⁷

Hurricane season was relatively quiet following the stormy 2005 season. Although the Florida Keys did not experience a direct hit, other areas of the country did. Following Superstorm Sandy, Keys Energy Services sent seven linemen to Long Island, New York to assist with power restoration. The linemen, along with three bucket trucks, one digger truck, and a utility pole trailer were sent to work with the Long Island Power Authority. The crew were on secondment for more than two weeks.

In 2013, Keys Energy Services broke ground on their Category 5 hurricane-rated Transmission & Distribution department building. Located at the Stock Island Generating Facility, the building cost \$3.4 million. As it was the first Keys Energy Services building to be rated a Category 5, the building also housed a backup for the computer system that controls the local electrical grid and serves as a backup operations center should the Service Building on James Street be compromised. The new building was named for former Lineman Josh Yarbrough who died tragically in the line of duty in August 2012.

⁴⁶ Florida Municipal Power Agency FMPA Agenda Packet, October 28, 2010. True All-Requirements Project (TARP) Frequently Asked Questions https://www.keysenergy.com/doc-download/TARP_FAQ.pdf. 47 Keys Energy Services Press Release, June 1, 2011.



Snow-covered KEYS bucket truck in New York following Superstorm Sandy

During its annual review of power outage statistics, Keys Energy Services reported that its 2013 power reliability levels were at all-time highs. There was only one transmission line outage, compared to six the year before. The single outage lasted three minutes, compared to thirty-two minutes in 2012. 48

Commercially supplied electrical power flowed to No Name Key for the first time in 2013. Although the remote island is within Keys Energy Services' area, it was not connected to the electric grid. As far back as the 1990s, several of the island's homeowners had been asking the Utility Board to approve the extension of service to their homes. In 2010, a group of No Name Key property owners got serious in the pursuit of electrification. The No Name Key Property Owners Association paid KEYS nearly \$700,000 for the installation of a storm hardened infrastructure on the island. Monroe County Commissioners denied Keys Energy Services' request for easements required to complete the project, stalling the electrification of No Name Key. KEYS installed the poles and lines despite the County's protests, but once all the lines were in place, the County refused to issue the homeowners electrical permits, which were required for connection. Circuit Court Judge David Audlin issued a writ in 2013 that ordered the county to allow residents to connect to the grid if they requested; the first home had power five days later.

Fifty-seven years after Keys Energy Services occupied the Service Building on James Street, it underwent a renovation to make it a Category 5 hurricane-rated building. The scope of work included installing a new energy management system, remodeling the interior, providing backup generation, providing backup air conditioning, flood proofing the first floor, new roofing, new exterior doors and windows, new electrical, fire alarm and protection systems, and landscaping. The renovation also returned the building to its 1950s mid-century modern aesthetic. All departments moved into temporary facilities during the renovation that was slated to last approximately 18 months at a cost of \$6.2 million. The upgraded building was dedicated in March 2016, signaling the end of the project ahead of schedule and below budget.



Hurricane Hermine Crew in Tallahassee.

Left to right: Linemen Billy Drager, Manny Estevez, Herschell Major, Marlon Briones and Paul Sanchez in the bucket

Keys Energy Services hired a utility services company in 2016 to begin an extensive \$4.5 million utility pole replacement project throughout its service area. More than 600 distribution utility poles were tested and are being replaced over two years as part of the utility's ongoing storm hardening program, a project slated for completion in October 2018.

Public power utilities have "mutual aid" agreements that provide assistance when called upon. Following Hurricane Hermine, Keys Energy Services sent five linemen, two bucket trucks, one digger truck, a utility service truck and a utility pole trailer to Gainesville and Tallahassee, Florida, to assist with power restoration. The winds and torrential rains of Hermine downed countless power lines and poles leading to widespread power outages throughout northern Florida. Later in 2016, Keys Energy Services sent five linemen and equipment to Fort Pierce, Florida, to assist with post-Hurricane Matthew power restoration.



As a way to give back to the community in 2017, Keys Energy Services contributed over \$450,000 from their \$1.5 million BP Oil Spill settlement funds to the Monroe County School District to assist with the upgrade of the stadium lights at the Tommy Roberts Memorial Stadium. The new LED lights were installed and provide a brighter, more energy-efficient output than previous lights. It also cuts down on light pollution by focusing the light downward. 49

Keys Energy Services also installed solar panels on the Ralph Garcia Steam Plant and at the new Key West City Hall on White Street. The utility provided \$240,000 toward the solar arrays at City Hall. Lynne Tejeda said, "The Utility Board stated their preference was to spend the BP money on local environmental initiatives. The contribution to the City's solar project will help defray costs and assist City Hall achieve its Leadership in Energy & Environmental Design (LEED) certification." 50



Solar array at Key West City Hall

 ⁴⁹ Keys Energy Services Press Release, April 29, 2016.
 ⁵⁰ Keys Energy Services Press Release, May 12, 2016.

The State of Florida officially ratified changes to the Enabling Act that governs the Utility Board and Keys Energy Services in 2017 regarding the election of Board members. Under the new guidelines, the Utility Board continues to have five members; three members must have residency in the City of Key West and two members must have residency in unincorporated Monroe County from Stock Island to the north easternmost end of the Seven-Mile Bridge. Prior to the revision, the five-member Utility Board was only comprised of residents of the City of Key West. In addition, all voters in Keys Energy Services' service area will now elect Utility Board members. The change will take place with the 2018 and 2020 election cycles. Peter Batty, Chair of the Utility Board, said, "This is an historic change. Since the late 1960s only Key West residents have been able to serve on and vote for the Utility Board, now all of our customers will have that right. This change could not have happened without the support of [Florida State] Representative [Holly] Raschein and her staff." ⁵¹

In early September 2017, Hurricane Irma, a Category 4 storm, made landfall in Cudjoe Key, a direct hit to Keys Energy Services' service area. The tieline went out for all customers in the Florida Keys as the storm approached. Irma proved to be Keys Energy Services storm recovery to date. Thanks to its storm hardening program begun in 2006, none of the storm hardened poles failed. Within 48 hours, the tieline was re-energized and crews were able to get three priority feeders turned on in Key West (the hospital, the airport and the major grocery store shopping centers). By the time most customers who had evacuated were allowed re-entry, Keys Energy Services had brought them back online. Over 500 contractors and fellow utility members were in the Florida Keys assisting Keys Energy Services' crews with restoration.

Keys Energy Services announced its participation in the Florida Municipal Solar Project in 2018, a large-scale solar energy project involving eleven additional Florida municipal electric utilities, Florida Municipal Power Agency and NextEra Florida Renewables, LLC. The project will enable Keys Energy Services to provide renewable energy to its customers in the most cost-effective way. Designed to generate 223.5-MW of solar energy, the planned Florida Municipal Solar Project will be one of the largest municipal-backed solar projects in the United States. Project plans call for three solar farms, accommodating approximately 900,000 solar panels, expected to generate 74.5-MW each. Lynne Tejeda said, "By working together, Florida municipal electric utilities can collectively build larger, more efficient solar installations that will lower the cost of solar energy so we can provide affordable, emissions-free electricity to our customers." ⁵²

⁵¹ Keys Energy Services Press Release, May 12, 2016.



KEYS' crews repair damage following Hurricane Irma

Keys Energy Services celebrates its 75th anniversary in 2018. The municipal utility services over 30,000 customers from the Seven-Mile Bridge to Key West – that accounts for 850 poles and a 67-mile span of transmission line. Additionally, there are 239 miles of distribution line spread across 15,200 poles. Keys Energy Services also maintains twelve substations and the Stock Island Generation Plant. Its kWh sales for 2017 was 724,492,035. The System's generating capacity is 111MW. This is made possible by an experienced staff of more than 120 employees who oversee an operation that generates more than \$113 million in revenue.

The growth and continued success of Keys Energy Services can be directly attributed to the community's support and expectations; the Utility Board's insight when planning for tomorrow; and its employees' resiliency, innovation and, most importantly, dedication.





List of Current Board Members:

Peter Batty, Chair Charles A. Bradford Jr. Mona C. Clark, Vice Chair Timothy Root Steve Wells

List of Former Board Members:

Ben N. Adams A. Maitland Adams Willard M. Albury Marty Amold Rose Arnold Barry L Barrosso Jr. Harold Bevis Fernando E. Camus John Carbonell Louis Carbonell William Cates Bill Chappell Delio Cobo Henry E. Coleman Otha Cox Jack C. Delaney W.W. Demeritt Fred Dion Louis Eisner Chuck Freeman Allan L. Hampton Hunter Hardin C.B. Harvey Henry Haskins Lou Hemandez

Edward L. Jackson Richard A. Kerr Leonard Knowles A.J. Lastres Henry Lee, III Kermit Lewin Charles E. Logan Anthony Niles Horace O'Bryant Robert R. Padron Reginald Pritchard Emest Ramsey Leland G. Roberts Paul Ross Roberts Thomas Roberts John Robinson J. Willard Saunders Richard Sawyer Ross C. Sawver Charles E. Smith J. Glenwood Sweeting Gayle Swofford Tv Symroski Bill Williams

Chronological List of General Managers:

E.W. Eaton
C.A. Van Deursen
Merville Rosam II
Joe Roberts
N.H. Bollinger
William Cates
John T. Doughtry

Thomas C. Kelly Robert R. Padron Leo L. Carey Larry Thompson Raymond Rodriguez Carl "Skip" Jansen Lynne Tejeda

