

TENNESSEE VALLEY AUTHORITY

ANNUAL REPORT

PROVIDING

POWER

IN THE PUBLIC INTEREST



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TVA homepage

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TVA is an equal opportunity and affirmative action employer. TVA also ensures that the benefits of programs receiving TVA financial assistance are available to all eligible persons regardless of race, color, sex, national origin, religion, disability, or age. This document can be made available in an alternative format upon request.

FINANCIAL HIGHLIGHTS—POWER PROGRAM

For the years ended September 30 (millions of dollars)

	1997	1996	Percent Change
Operating revenues	\$ 5,552	\$ 5,693	(2)%
Operating expenses	(3,698)	(3,656)	1%
Operating income	1,854	2,037	(9)%
Other income (expense), net	157	(10)	—
Interest expense	(2,003)	(1,966)	2%
Net income	\$ 8	\$ 61	(87)%
Total assets	\$33,684	\$34,029	(1)%
Capitalization			
Long-term debt	\$24,726	\$25,570	(3)%
Proprietary capital	3,975	4,028	(1)%
Total capitalization	\$28,701	\$29,598	(3)%

POWER SYSTEM STATISTICS

For the years ended September 30 (millions of kilowatt-hours)

	1997	1996	Percent Change
System input			
System generation			
Hydro, including pumped storage	17,232	16,107	7%
Fossil	93,417	97,046	(4)%
Nuclear	42,008	35,426	19%
Combustion turbine	339	217	56%
Total net generation	152,996	148,796	3%
Purchased	5,393	4,929	9%
Net interchange and wheeling	(13,130)	(7,851)	67%
Total system input	145,259	145,874	—
System output			
Sales			
Municipalities and cooperatives	114,771	117,035	(2)%
Industries directly served	17,359	16,599	5%
Federal agencies	7,567	6,966	9%
Total sales	139,697	140,600	(1)%
Other	2,029	1,668	22%
Losses	3,533	3,606	(2)%
Total system output	145,259	145,874	—
Net winter dependable capacity (megawatts)	28,417	28,123	1%
Percent of average gross generation to net winter dependable capacity	68.23	64.39	6%
System peak load (megawatts)—summer	26,661	25,376	5%
System peak load (megawatts)—winter	26,670	24,995	7%
Annual load factor	62.20	63.89	(3)%
Percent net winter dependable capacity by fuel source			
Fossil	53%	53%	—
Nuclear	20%	20%	—
Hydro	19%	19%	—
Combustion turbine	8%	8%	—



Directors Johnny Hayes and Bill Kennoy, Chairman Craven Crowell

LETTER TO STAKEHOLDERS

Early in the next century, the restructuring of the electric power industry can bring dramatic changes to the way utilities across the nation do business. TVA's success in the new era will be built on a solid foundation of our commitment to the public interest, customer service, financial strength and operational excellence. This annual report describes TVA's performance in these key areas during fiscal year 1997 and outlines our strategies for the years to come.

The Tennessee Valley Authority is more than a power company. TVA power enriches lives, promotes economic growth and improves the overall quality of life in the Valley. We provide reliable, universal access to electricity at competitive prices. And we are the stewards of the lands and waters of the Tennessee River Valley. We are not only the nation's largest wholesaler of electricity, but also an innovative and effective resource-management agency and a valuable asset to the people of the Valley and the nation.

TVA is preparing for the challenges of the future and is adapting to changing conditions in our industry and in our role as a federal agency. Four years ago, while TVA was building four nuclear units, its debt was increasing at about \$1 billion a year and there was no strategic plan for the future. At that time, Director Hayes and I joined Director Kennoy on the TVA Board

of Directors, and we embarked on a deliberate, step-by-step plan to put TVA on track for the coming era of competition.

The Board decided to complete one nuclear unit at Watts Bar and stop construction on TVA's three other unfinished nuclear units. This permitted us to decrease our capital expenditures and cap TVA's debt. In fact, this year, for the first time in 35 years, TVA's debt has declined. Our operating nuclear plants are now performing at record levels, well above the national average. TVA's fossil and hydro plants, meanwhile, have increased their productivity by about 20 percent system-wide. Thanks to these remarkable achievements by the men and women of TVA, our power system is running better today than at any time in its 64-year history.

Because of the steps we have taken, we are now positioned to implement our 10-Year Business Plan to ensure that TVA will be competitive in the 21st century. Achievement of this plan, which is the capstone of this Board's efforts to prepare TVA for the restructuring of the electric utility industry, will cut TVA's debt in half by 2007 and make it possible to lower the price of TVA power by 15 percent thereafter. By implementing our 10-Year Business Plan, TVA will gain new strength.

A financially strong and efficient TVA is essential for contin-

uing economic growth and job creation in our region. The steps we are taking will not only benefit the region, but will also enhance TVA's value as a national asset as we work with Congress to define TVA's role in the restructured marketplace.

In that new marketplace, we intend to preserve TVA's historic commitment to the public good—through economic development, reliable service, environmental stewardship and universal access—so TVA will remain an industry leader and a model for the rest of the country. TVA, as a public power entity, is ideally suited to be an advocate for, and to protect, the fundamental public interest in electricity generation, transmission and distribution.

My fellow Board members and I are proud of what TVA's employees have accomplished in 1997 and what they are ready to accomplish in the years to come. We have cut costs while improving productivity. We have streamlined our operational

and corporate support, eliminating about 750 positions this year. Improvements in corporate operations include a savings of 15 percent through continuing efforts to leverage contracts, and substantial savings through the successful implementation of a new payroll system and the re-engineering of key Information Systems operations. In January, TVA met an all-time peak power demand of 26,670 megawatts, by having all of our 59 fossil units, our five nuclear units and 113 hydro units generating power at the same time. TVA will continue to focus on operational excellence in serving our customers, the region and the nation. In addition, TVA continues to be a national model for watershed management and a model for regional development programs around the world.

The U.S. Congress has a leadership role in shaping the utility industry of the future and the role of TVA in that future. Working with Congress and the public and private utilities, TVA can take an active role in developing an equitable, effective framework for success in a restructured market. For our customers and the people of the region and the nation, we are providing power in the public interest.



Craven Crowell
Chairman

CHAIRMAN: Craven Crowell

Crowell was appointed to the Board of Directors by President Bill Clinton and confirmed by the U.S. Senate in 1993. President Clinton named him as TVA's 11th Chairman. Crowell, who has 13 years of service at TVA, is a member of the board of the Electric Power Research Institute and the board of the Nuclear Energy Institute.

DIRECTOR: Johnny H. Hayes

Hayes was appointed to the Board of Directors in 1993 by President Bill Clinton. Before joining the TVA Board, he served two appointments in the cabinet of Tennessee Governor Ned McWherter, including Commissioner of Economic and Community Development. Before entering public service, Hayes was president of Newman, Hayes & Dixon, an independent insurance agency he founded in 1964 in Hendersonville, Tennessee. He is co-chairperson of the Knoxville/TVA Community Relations Council.

DIRECTOR: William H. Kennoy

Kennoy was appointed to the Board of Directors in 1991 by President George Bush. A professional engineer, he was president of Kennoy Engineers, Inc., an environmental engineering firm in Lexington, Kentucky, from 1971-1991. He serves on the Intermodal Advisory Panel of the Kentucky Transportation Cabinet, Clean Coal Technology Tactic Team, and The Partnership for Kentucky School Reform.

GENERAL COUNSEL: Ed Christenbury

General Counsel, advises the Board on legal matters, provides overall policy direction to the Office of the General Counsel, and oversees and coordinates all legal proceedings.

FOSSIL & HYDRO GROUP: Joe Dickey

Chief Operating Officer, has the responsibility for day-to-day production and delivery of electricity to TVA customers. He is also Executive Vice President in charge of the Fossil & Hydro Group, representing 22,792 megawatts of net winter dependable generating capacity.

RESOURCE GROUP: Kate Jackson

Executive Vice President of the Resource Group, is responsible for TVA non-power programs, which include navigation, flood control, the Environmental Research Center, Land Between The Lakes, and the management of the Tennessee River basin.

CUSTOMER SERVICE & MARKETING: Mark Medford

Executive Vice President of TVA's newly created Customer Service & Marketing Group, is responsible for customer account management, energy marketing, technology advancement and economic development.

TRANSMISSION & POWER SUPPLY: Bill Museler

Executive Vice President of TVA's newly created Transmission/Power Supply Group, is responsible for engineering, construction, maintenance, operation, and dispatch for the 17,000-mile TVA transmission system.

FINANCE: David N. Smith

Chief Financial Officer and Executive Vice President of Financial Services, is responsible for the Finance, Controller, and Treasurer organizations, investor relations, and risk management. Through management of TVA's \$30 billion capital structure, he develops fiscal strategies to ensure funding for corporate operations and growth.

TVA NUCLEAR: Ike Zeringue

Named Executive Vice President of TVA Nuclear and Chief Nuclear Officer in October 1997, oversees operation, maintenance and engineering of all nuclear units, representing 5,625 megawatts of net dependable generating capacity in operation. Succeeds Oliver D. Kingsley, Jr.

ADMINISTRATION: Norm Ziggrossi

Chief Administrative Officer and Executive Vice President of Business Services, is responsible for all TVA corporate and administrative functions and for ensuring these functions are closely linked to the policies of the Board of Directors. He chairs TVA's Executive Committee.



FINANCING POWER IN THE PUBLIC INTEREST

In July 1997, TVA unveiled its ambitious 10-Year Business Plan that will strengthen us financially, position our electric power operations to meet the competitive challenges of a restructured marketplace, promote economic development and deliver great value to our customers.

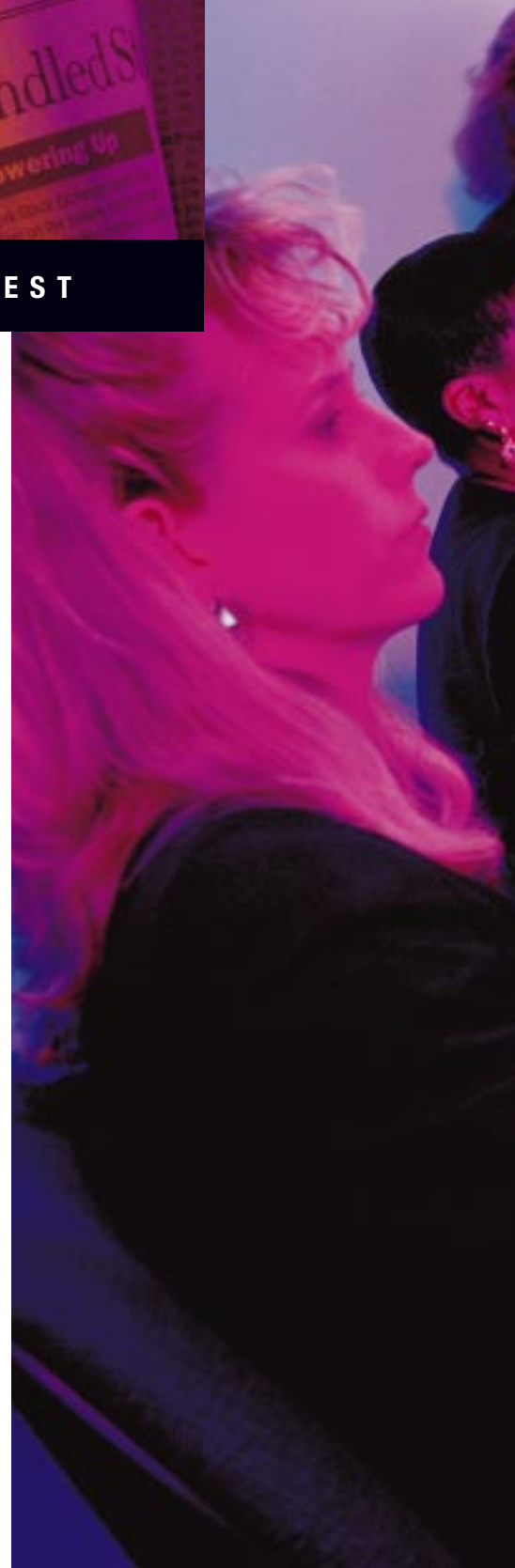
This plan sets a focused course for TVA to reduce its debt by 50 percent, to \$13.8 billion by 2007, thus enabling us to reduce the total cost of power to the Valley by 15 percent thereafter. The plan emphasizes how a strong, competitive TVA benefits its stakeholders and the entire Tennessee Valley. In addition to creating more financial flexibility for TVA, it promises more flexibility for 160 distributor customers, allowing them to change their power contracts from a rolling 10-year term to a rolling five-year term after five years.

10-YEAR PLAN

In developing the plan, we thoroughly examined all areas of our current cost structure. After reducing our costs wherever possible, TVA implemented the Valley's first price increase in 10 years, following a decade during which the cost of living increased about 38 percent.

This price change will produce a 5.5 percent increase in TVA's firm power revenues in 1998, or about \$345 million, with every dollar of increased revenue targeted to reduce TVA's debt and boost our competitive position. The price increase, lower capital expenditures, and improved operational efficiencies will help TVA achieve its aggressive debt-reduction target.

A key feature of the plan is continued support for economic development. The 10-Year Business Plan includes incentives that will contribute to the Valley's economic base. Because of the importance of manufacturing





David N. Smith
Chief Financial Officer

Ed Christenbury
General Counsel

TVA'S 10-YEAR BUSINESS PLAN IS ESSENTIAL TO FULFILLING OUR MANDATE TO PROVIDE POWER AT THE LOWEST FEASIBLE PRICE TO PROMOTE THE ECONOMIC DEVELOPMENT OF THE REGION.



TVA's Treasury Staff tracks fluctuations in the bond market.



TVA'S POWER IS SELF-SUPPORTING

The TVA power system is not subsidized by federal dollars. While TVA is a wholly owned U.S. Government corporation, our power-related activities are entirely self-supporting—and have been since 1959. TVA pays all its costs with its own electric power revenues. A recent report published by the General Accounting Office, the auditor for the U.S. Congress, confirmed that TVA's power program costs the taxpayer nothing.

In fact, TVA has paid the U.S. Government—its owner—an uninterrupted cash return since 1959 at a market rate of interest on the government's initial power program appropriation. TVA has paid the U.S. Government more than \$3 billion in principal and interest on the government's original investment of \$1.4 billion.

TVA is different from a private power company. TVA is government-owned and was created in 1933 to serve a public purpose—to strengthen the regional economy by supplying low-cost power to even the most remote parts of the Tennessee Valley. In addition to operating the power system, TVA historically has received congressional appropriations to provide some congressionally mandated non-power functions. These include stewardship of land and water resources of the region, activities routinely performed by government entities and paid for by appropriations throughout the nation. These funds are entirely separate from TVA's power system funds.

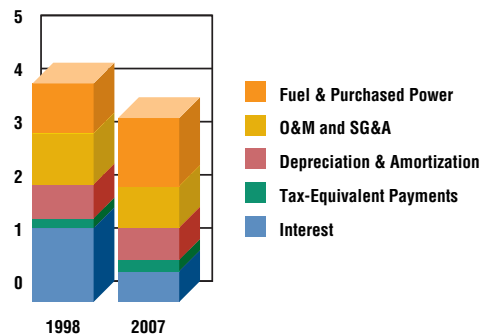
jobs in the region, TVA is expanding its Large Manufacturing Credit program, which is offered to qualifying manufacturing industries with loads greater than 5,000 kilowatts. Industries in the program, which currently receive a 5 percent monthly credit on their firm power bills, will receive an additional credit to mitigate next year's price increase. The new credit will also be available to distributors of TVA power for their qualifying industrial customers with loads greater than 1,000 kilowatts.

Programs like these support TVA's fundamental mission of economic development in the Tennessee Valley region. By providing competitively priced electricity, TVA helps power the economy, producing quality jobs.

TVA's 10-Year Business Plan is designed to accomplish long-term objectives that will enable us to thrive in the coming restructured marketplace by:

- Reducing our cost of power to match the lower market prices anticipated in a more competitive market.
- Altering TVA's cost structure from a rigid, high fixed-to-variable cost relationship to a more flexible structure better suited to a volatile, competitive market.

Average Cost of Power (cents per kWh)



TVA plans to reduce its cost of power from 4.1 cents per kWh in 1998 to 3.5 cents by 2007.

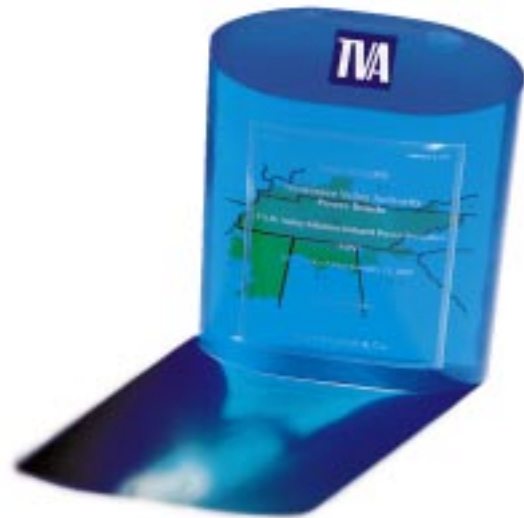


■ TVA is required by the TVA Act to sell power at the lowest feasible rates. We are able to sell power through our distributors at the highly competitive average residential price of 5.9 cents per kilowatt-hour because of our dedication to continuously reducing costs and improving efficiencies.

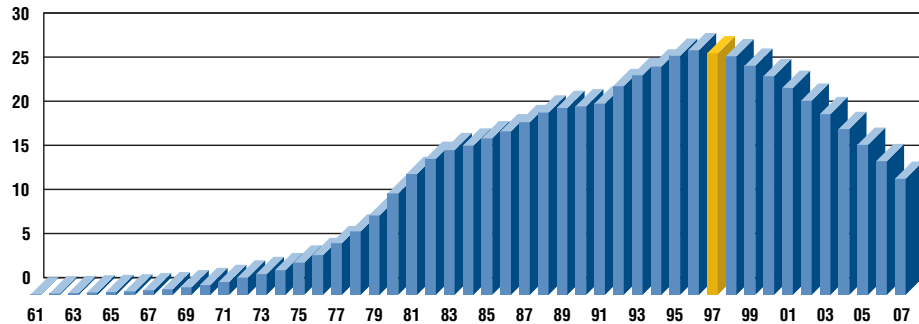
■ TVA pays 5 percent of its power sales revenues each year in tax-equivalent payments. In 1997, these payments totaled a record \$272 million, an increase of \$16 million over 1996. Combined with taxes paid by local distributors of TVA power, these payments are comparable to state and local taxes, excluding income taxes, of neighboring for-profit utilities.

■ Safety at an attractive yield is the primary reason that more than 250,000 individuals and institutions across the United States own TVA bonds. Key strengths of TVA's power bonds include an exclusive first pledge of payment from TVA's net power proceeds and the statutory requirement to charge rates sufficient to ensure full payment of annual debt service.

■ The TVA Investment Challenge is a unique partnership with the region's public universities that offers students a real-world learning experience in financial investment management. TVA will allocate approximately \$2 million of its \$550 million Nuclear Decommissioning Trust Fund to 19 universities. Under the guidance of faculty members, students will design a long-term management strategy, actively manage the funds, and periodically provide performance reports to TVA. Each year TVA will recognize the three universities whose student-managed portfolios generate the best returns.



TVA Debt (billions of dollars)



TVA plans to reduce its debt by 50 percent over the next decade.

P R E P A R E D T O C O M P E T E

■ Strengthening customer allegiance and satisfaction by developing opportunities for mutual support and partnerships.

These actions will help secure TVA's role as a leader in the marketplace. They ensure that customers will continue to have a source of competitively priced power, that TVA's operations will be financially secure, that TVA bonds will continue to attract investors, and that employees will have continuing opportunities for professional growth and development.

Industry restructuring will make the marketplace more dynamic and give customers more choice. The TVA Board developed its financial and operating strategy in anticipation of the restructured marketplace. The 10-Year Business Plan outlines the Board's strategy, provides a blueprint to prepare us for this environment and ensures that we can meet all our obligations in serving the public interest. ■



Sequoyah Nuclear Plant

PROVIDING POWER IN THE PUBLIC INTEREST

In the Tennessee Valley, each time you reach for a light switch, boot up a computer, wake to the buzz of an alarm clock, listen to a baby monitor, play a video game or plug in a vacuum, you rely on the unspoken compact we have with our customers—that TVA will be there, providing reliable, efficient low-cost electric power.

TVA's excellent record of performance, productivity and reliability, earned over 64 years, is among its greatest assets. This performance was never more evident than in 1997, when TVA achieved record levels of operational excellence from all three of our power sources—fossil, nuclear and hydro—as well as in transmission, resource management and corporate operations. The men and women of TVA have done an outstanding job of reducing costs and improving productivity.

TVA's power system is in its best shape in decades, and we are working to prepare for the new power needs and challenges of tomorrow. We have improved the capacity factor of the fossil system by more than 20 percent during the past 10 years. We are continuing a long-term modernization and upgrading of all our hydro units, which has resulted in more efficient power production.

In TVA's nuclear program, five units are in operation, all performing at high levels of efficiency. In May, Watts Bar Nuclear Plant Unit 1 completed its first full year of operation with outstanding results. It operated through its first cycle at a capacity factor of 84.2 percent—well above the industry average of 65 percent for first-year plants—and generated 8.6 billion kilowatt-hours, enough to supply a city of more than 350,000 people.

PERFORMANCE



TVA is known for producing low-cost power and offering customers some of the nation's best power performance. In January 1997, TVA met an all-time peak demand of 26,670 megawatts and in July met a summer peak demand of 26,661 megawatts.



Joe Dickey
Chief Operating Officer

Oliver Kingsley
1997 Chief Nuclear Officer

Ike Zeringue
1998 Chief Nuclear Officer

TVA PERFORMS AT HIGH LEVELS OF EFFICIENCY BECAUSE WE HELP SET STANDARDS FOR EXCELLENCE AND PRICE THAT THE ENTIRE ELECTRICITY INDUSTRY MUST WORK TO MATCH.



TVA has 17,000 miles of transmission lines across its seven-state region.

RECORD LEVELS OF EFFICIENCY

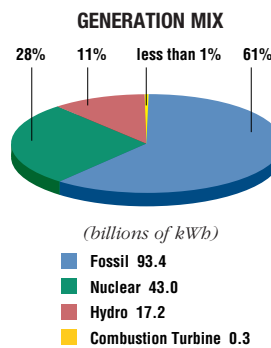


Ongoing upgrades and modernization of TVA's hydroelectric units have increased productivity and lowered unplanned outages. Pictured here, welding work at Norris Dam.

TVA's Sequoyah, Browns Ferry and Watts Bar nuclear plants ranked among the 20 best of the country's 110 nuclear plants in the key performance areas of reliability and generation. Browns Ferry employees set a world refueling record in March for General Electric boiling-water reactors, completing the refueling of Browns Ferry Unit 3 with an outage of only 19 days and 39 minutes.

Throughout 1997, TVA continued to deliver for customers. In January, TVA met an all-time power demand, demonstrating the ability of TVA's power system to meet customer needs. This summer, TVA met six record summer-demand peaks in five weeks, again proving its reliability during periods of high demand. TVA's nuclear plants closed the year with nuclear power generation up 19 percent, production mill rate down by 4 percent, and capital spending down by 51 percent. The consistently good performance at Browns Ferry made it the nation's lowest non-fuel-production-cost boiling-water reactor plant for 1997.

The TVA transmission system continues to set records for reliability. In "load not served"—the key reliability indicator, measuring the minutes per year that an average consumer experienced an outage due to TVA transmission system problems—TVA improved from 9.04 minutes in



PERFORMANCE IN 1997 INCLUDED THESE HIGHLIGHTS:

- The three nuclear plants—Sequoyah, Browns Ferry and Watts Bar—were ranked 13th, 14th, and 15th best in the nation in total production cost for 1996 by *Nucleonics Week* magazine.
- *Electric Light & Power* magazine ranked TVA as the second-lowest cost power producer among the nations 50 largest utilities.
- *Electric Light & Power* also ranked Bull Run Fossil Plant No. 4 among the country's steam plants in heat rates. Gallatin and John Sevier Fossil plants also made the Top 20—at Nos. 17 and 18, respectively.
- Johnsonville Fossil Plant Unit 3 set a national continuous-operation record for fossil plants on June 3, with 616 consecutive days.
- Cumberland Fossil Plant set a TVA fossil plant one-year generation record of 18.5 million megawatt-hours.
- Raccoon Mountain Pumped-Storage Plant generated a record 2.6 million megawatt-hours.
- A Browns Ferry Nuclear Plant employee team took top honors in the government category for the Rochester Institute of Technology/USA Today Quality Cup competition. The team developed a system that uses computers to file, retrieve and update procedures, saving millions of dollars each year.
- TVA built a state-of-the-art power transmission substation in northeast Mississippi. The 500,000-volt substation will help power long-term economic growth in the region.



1996 to 6.7 minutes in 1997. In anticipation of more severe weather in the coming year, the goal for “load not served” duration is 8.6 minutes in 1998.

Though we have reduced our employment level to about 14,500 from 34,000 during the past 10 years, TVA employees have risen to the challenge of attaining higher levels of power system productivity and reliability. ■



Colbert Steam Plant



A TVA economic development loan helped Alliance Engines of Maryville, Tennessee, through a critical period of its growth.

MEETING THE VALLEY'S NEED FOR POWER

Success in the power business is about generating low-cost, reliable power and finding new ways to meet customer needs. TVA excels in those areas.

TVA's primary customers are local power companies that distribute electricity to residential, commercial and industrial end-users; others are directly served industries and federal agencies with special power needs. TVA's customers serve the Tennessee Valley's homeowners, businesses, manufacturers, schools and governments.

In 1997, we supplied 140 billion kilowatt-hours, with power distributors accounting for about 82 percent of that consumption. Directly served industries used 13 percent and federal agencies used the remaining 5 percent.

Through a combination of leading-edge technology, financially and operationally flexible contracts, and creative marketing, TVA has introduced and implemented programs that are helping the power distributors, the industries and the communities of the Tennessee Valley.

Several programs implemented in 1997 are helping our customers put their power to work. For example, TVA offered distributors increased flexibility through power-contract amendments that would, beginning five years after the amendment, change the contract from a rolling 10-year term to a rolling five-year term.

By working in partnership with our customers, TVA is making a difference in people's lives. The following are just a few examples:

Through its support and funding of business incubators, TVA has played a key role in helping communities and local power distributors launch small businesses. These locally sponsored multi-tenant facilities help new businesses, industries and first-phase business expansions

RELIABILITY

HOME IMPROVEMENTS TO SAVE ENERGY

Families in Tennessee, Alabama and

Mississippi are getting the opportunity to live

more comfortably and more affordably through a pilot energy-saving program developed by TVA and state human-service organizations.

The one-year pilot program, called the "Energy Efficiency Home

Improvement Project," will help customers lower their electric bills through weatherization and the installation of energy-saving devices in homes that use electricity as a primary heating source.

This is one of several energy-management programs recommended in TVA's Energy Vision 2020, TVA's integrated plan for ensuring adequate, reliable, affordable and sustainable power to the people of the Tennessee Valley into the next century.

The Energy Vision 2020 plan set a target of developing residential energy-saving programs that will result in a power-generation savings of 2,200 megawatts by the year 2010—the power required by about 350,000 homes.





Bill Museler
Executive Vice President
Transmission/Power Supply
Group



Mark Medford
Executive Vice President
Customer Service &
Marketing Group

TODAY, THE COMMUNITY NATURE OF PUBLIC POWER COMPANIES IS REFLECTED IN THEIR QUICK AND CONSTANT RESPONSIVENESS TO CUSTOMER NEEDS, INCLUDING CUSTOMER SERVICE AND RELIABILITY.



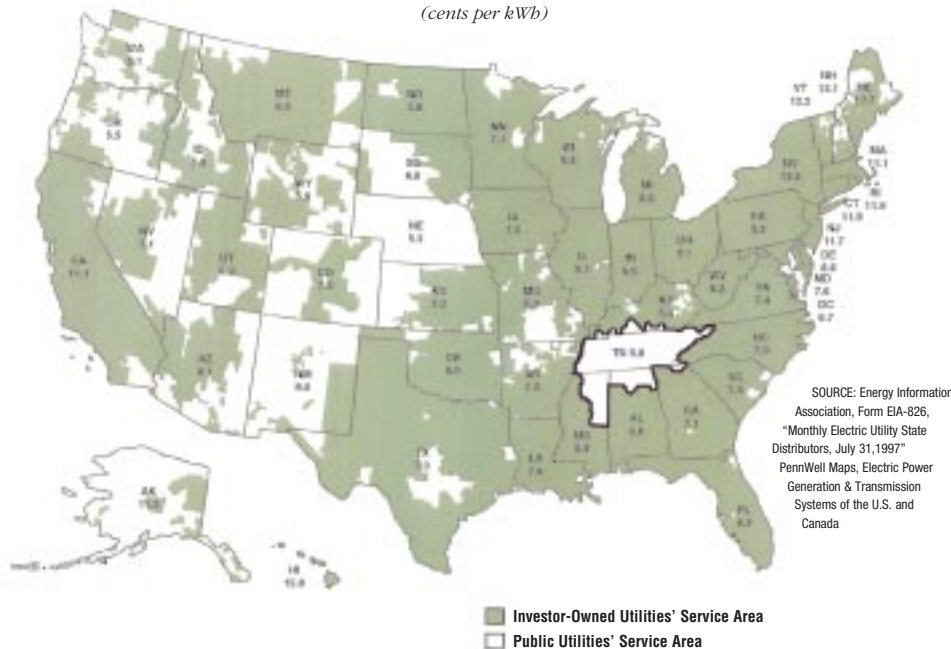
The Maytag Cooking Products Plant in Cleveland, Tennessee, depends on TVA and Cleveland Utilities for reliable power at competitive prices.

CUSTOMER SERVICE



AVERAGE RESIDENTIAL UTILITY RATES

(cents per kWh)



become established by allowing them to share services, equipment and space. Since its inception in 1988, the program has helped launch 550 businesses, and its current clients and graduate companies have created 3,800 jobs, generating more than \$300 million in revenues.

The Chattanooga/Hamilton County Business Development Center recently received the 1997 Incubator of the Year Award in the Manufacturing/Service category from the National Business Incubator Association.

TVA is also investing in small-business development across the Tennessee Valley region through loan funds to help businesses start up and expand. One new loan fund provides short-term working capital for new and existing businesses in the 15 TVA-assisted business incubators throughout the region.

Power distributors serving school districts in Kentucky and Tennessee are helping schools save money on their heating and cooling costs through geothermal heat pumps, which use the earth's temperature to heat and cool buildings. Sumner County, Tennessee, has committed to installing geothermal heat pumps in five schools it will build in the next two years. This will save Sumner County about \$75,000 in operating expenses over six years; 19 other counties are following Sumner County's lead.

TVA's *energy right* program was developed jointly by TVA and its cus-

TVA EFFORTS "REFLECT" BIG SAVINGS

At a public TVA Board meeting, David Purvis made it very clear exactly how he feels about TVA. He's the Plant Manager at Stanley Decor, a Tupelo, Mississippi, glass manufacturer owned by The Stanley Works of New Britain, Connecticut.

Purvis told about a phone call he received several months before from Tupelo Water & Light, a Mississippi distributor of TVA electricity. TW&L supplies electricity to Purvis' company, which produces about 350,000 square feet of mirrored glass each day—and uses a lot of electricity in the process. The problem, the caller told Purvis, was that Stanley Decor seemed to be using more power than it should need.

TVA inspectors checked Stanley's equipment for power leaks. Nothing. But when they checked the metering equipment, they found plenty of problems—and plenty of savings for Stanley. The result: an \$86,000 rebate and annual savings of \$28,000.

But TVA wasn't finished. It sent in a consultant who discovered a way for Stanley to reduce its level of scrap and broken glass—which will save an additional \$96,000 annually. Then TVA showed Stanley how to recycle its wastewater—saving \$24,000 a year. Altogether, TVA found annual savings of nearly \$150,000 for Purvis' plant.

"You don't find many suppliers who help you uncover ways to use less of their product," says Purvis. "By helping their customers, TVA will keep customers in the long run."



CARING CLEANUP: When an unforgiving tornado touched down in East Brainerd, Tennessee, in March, a large group of TVA employees volunteered their help to those whose homes and lives were devastated by the storm. More than 100 TVA volunteers devoted several weekends and evenings to cleaning up the yards and repairing damage to homes of elderly individuals and those with physical limitations.



Through its *energy right* program, TVA has helped the Middle Tennessee Electric Membership Corporation increase its energy-market share by promoting energy-efficient programs to its customers. This is a significant “assist,” because this distributor operates in an area where natural gas is available in 80 percent of the home-heating market.

MEETING NEEDS

tomers in the Tennessee Valley Public Power Association to promote more efficient power use. Through this program TVA and distributors are addressing the public’s energy-conservation concerns by making sure their homes use energy efficiently—for example, by installing energy-saving heat pumps. This saves homeowners money on their energy bills. Plateau Electric Cooperative of Oneida, Tennessee, has taken the program a step further, building a model home according to *energy right* standards as a way to educate contractors and homeowners about energy efficiency.

TVA continually seeks new ways to nurture a culture focused on serving our customers. A company-wide initiative begun in 1997, “STAR 7,” is improving how TVA employees work together to meet customer needs. “STAR” stands for Strategic Teamwork for Action and Results. The “7” represents our seven values—integrity, respect for the individual, teamwork, innovation and continuous improvement, honest communications, leadership and flexibility. STAR 7 supports a high-performance culture that challenges everyone at TVA to find better ways to do business in a more competitive marketplace. ■



Norris Lake

SERVING THE PUBLIC INTEREST

Although the electric utility industry is changing, some things remain the same. One of those constants is public power's commitment to the common good. TVA's customers include 50 rural cooperatives and 110 municipal electrical systems. Through these distributors, some 8 million people over 80,000 square miles rely on electricity produced by TVA.

In the years ahead, public power should serve as a model for the electric utility industry by holding to the core values that make public power a vital partner in regional and community development. Any comprehensive restructuring legislation must protect the interests of all industry participants, and the public interest is first on the list. Historically, public power developed because investor-owned utilities were reluctant to serve the less profitable, more remote areas of the nation.

Today, public power serves some 35 million electricity customers in the United States—14 percent of all U.S. customers. Electricity is an essential service, and the benefits of any comprehensive restructuring must include all classes of customers. Public power is ideally suited to be an advocate for the fundamental public interest in electricity generation, transmission and distribution.

TVA's fundamental mission is that of service to the public. Across the nation, residential customers of public power companies pay an average of 6.7 cents per kilowatt-hour for their electricity, compared with 8.9 cents for power from privately owned utilities. TVA believes in public power and its continuing importance to our nation's energy future. Together, public power and investor-owned utilities can form a robust competitive marketplace. ■

COMMON GOOD

HIGHLIGHTS

- TVA is a national model for successful watershed management. TVA's Clean Water Initiative for 1997 included expanding efforts to all 12 of the region's sub-watersheds. During 1997, TVA conducted 66 pollution-reduction projects, which resulted in improved water ratings on 15 percent of the Tennessee River watershed.
- Through a demonstration project at the Milan Army Ammunition Plant in West Tennessee, scientists from TVA's Environmental Research Center (ERC) are proving that constructed wetlands can successfully clean up toxic chemicals. This demonstration can be transferred to the Army's other contaminated sites throughout the nation. The ERC is continuing its transition to self-sufficiency. This year 66 percent of its total payroll was funded from sources other than TVA appropriations, up from 48 percent last year.
- Internationally, TVA continued its work with the People's Republic of China. The Chinese want to follow the TVA model as they develop their water resources, create a national power grid and expand their current generating capacity. We are also serving as advisors to India and other nations around the world, as developing countries strive to improve their citizens' quality of life by following TVA's example.
- As part of its corporate citizenship efforts, TVA and TVA employees support 82 Valley public schools through TVA's "Partners In Education" program, through which TVA offices or departments "adopt" local schools. Students across the region—from inner-city areas to farmlands—benefit from TVA's support and employees' volunteer efforts.
- In an effort to develop an alternative wastewater system for rural areas in which industrial, commercial and residential growth might be slowed by insufficient sewer capacity, TVA initiated a wastewater pilot program in North Alabama, using a "bog garden" to serve homes in the area. Through the teamwork of our Technology Advancements and Marketing groups, this innovative program will help support growth in rural communities.

THE GENERATION, TRANSMISSION AND DISTRIBUTION OF ELECTRICITY IS OF GREATER IMPORTANCE TO MODERN LIVING THAN ANY OTHER PUBLIC SERVICE.

PARTNERS IN POWER—Through the Public Power Alliance, TVA and 17 other public power companies are working together for greater leverage and a stronger competitive position. Formed last year, the alliance fosters cooperation among public generation and transmission electric utilities to provide better, lower-cost services to their customers in the restructured energy marketplace of the future. Alliance members will be exploring joint marketing and brokering of electricity, energy services, mutual assistance in emergencies, and sharing of utility industry information.



Kate Vogel, a glass artist in Bakersfield, North Carolina, is one of many regional crafts entrepreneurs whose businesses were nurtured by the organization HandMade in America and a TVA economic development loan.



THE COMMON GOOD

TVA's goal is not only to continue to be a leader in the generation of electricity but also to continue our long tradition of being a good neighbor in the communities we serve. Public power originated in communities seeking local control and universal access to essential electric service, and TVA's roots grew from the need to provide quality service to all citizens of our region.

Today, the nature of public power is reflected in its responsiveness to customer needs, and public power is uniquely well-suited to ensuring that the electric utility industry meets fundamental public needs for reliability of service, environmental stewardship, universal access for all consumers, including those in thinly populated rural areas, and economic development of our service area. TVA is a power company ready for the challenges of restructuring and committed to serving the public interest.





THE FUTURE OF PUBLIC POWER IS CENTRAL TO THE RESTRUCTURING DEBATE. PUBLIC POWER COMPANIES WERE FOUNDED BY COMMUNITIES SEEKING LOCAL CONTROL AND UNIVERSAL ACCESS TO ESSENTIAL ELECTRIC SERVICE.



RELIABILITY

Today's increasing power demands and high-tech industries mean that reliability, as well as price, is a top priority with customers. Long recognized for providing competitively priced electricity, TVA uses a broad mix of fossil, nuclear and hydro units to ensure the reliability of its power system.

TVA blends efficiency and expertise at every step in generating, buying, selling and transmitting power to customers. TVA's transmission system covers an area of 80,000 square miles, with 17,000 miles of transmission lines. The system is designed and built to be reliable under the most severe contingencies. We are proud of our history of system reliability and intend to meet whatever demands are made on our system in the future.

TVA WEEKEND ACADEMY HAS CLASS: Yes, school can be educational and fun. At least that's the lesson 52 Knoxville elementary students are learning during their twice-a-month participation in TVA's Weekend Academy. The "school" offers students real-life, hands-on learning adventures and activities that range from making electricity to experiencing a simulated space mission. The students meet on Saturdays in TVA University classrooms or on field trips throughout the Tennessee Valley. The year-round academy celebrated its first anniversary in May. According to Academy Coordinator Nan Scott, "This project is a positive step toward giving inner-city kids a better future, helping rebuild the downtown community and ensuring a future workforce."



The 1996 Olympics brought the world to a remote part of East Tennessee for whitewater racing. Today, TVA and others are working together to continue the economic success spurred by the Olympics. By offering more recreation opportunities in the region, TVA is helping to build on the reputation the Ocoee River gained during the Olympics.

Any industry restructuring plan should ensure a commitment to:

- Reliability
- Universal Access
- Environmental Responsibility
- Economic Development



Norm Zigrossi
Chief Administrative Officer



Kate Jackson
Executive Vice President
Resource Group

NATIONAL ASSET

OVERVIEW

TVA is the largest public electric power system in the United States, producing nearly 153 billion kilowatt-hours (kWh) of electricity in 1997. TVA is a wholly owned corporate agency and instrumentality of the United States, established by Congress in 1933 with the objective of developing and managing the resources of the Tennessee Valley region to strengthen the regional and national economy and the national defense.

TVA is primarily a wholesaler of power. Its customers are composed of three major groups: (1) distributors, consisting of municipal and cooperative systems; (2) industries that have large or unusual loads; and (3) federal agencies. TVA's power-service area covers 80,000 square miles in the Southeastern United States, including most of Tennessee and parts of Mississippi, Kentucky, Alabama, Georgia, North Carolina and Virginia. TVA also manages the Tennessee River, the nation's fifth-largest river system, for flood control, navigation, power production, recreation and other purposes.

Unless otherwise indicated, years (1997, 1996, etc.) in this discussion refer to TVA's fiscal years ended September 30.

COMPETITION AND INDUSTRY CHALLENGES

TVA and competition

The electric power industry continues to evolve to a competitive market as indicated by the introduction of numerous proposed energy-related state and federal legislation initiatives throughout the year. In order to succeed in an environment of increased retail and wholesale competition, TVA has taken steps to maintain its position as an industry leader in providing customers with low-cost power, reliable service and universal equitable access.

Although other power suppliers, under certain circumstances, may sell power in the area where TVA's power is distributed, there are statutory provisions restricting TVA from expanding the area in which it is a source of power supply. It is not unreasonable to expect that in the event any restructuring legislation is enacted, such legislation would enable TVA and the distributors of TVA power to take part, reciprocally, in competition outside the area for which they can now be a source of electric power supply.

TVA's management continues to develop plans and strategies that will help position TVA to successfully compete in a restructured electricity market. Please see the section titled "10-Year Business Outlook."

Legislative activity

Several bills were introduced in the 105th Congress to implement customer choice for all retail electric customers in the United States. Generally, the bills provide for the abolition of exclusive service territories and allow any electric utility (or other provider of electricity) to serve another electric utility's present customers, including those of TVA and the municipal and cooperative distributors served by TVA. Although no

such legislation is expected to be passed in the near term, TVA expects that similar types of bills will be introduced in the next session of Congress and will receive considerable attention. TVA supports full competition in the electric utility industry, so long as all customer classes in the TVA area can enjoy the benefits, and believes it is well-positioned to succeed in a competitive environment.

Some states have taken their own steps toward retail competition. However, the states surrounding the TVA service area have been less enthusiastic toward retail competition legislation because electric rates in these states have been lower than in other parts of the country. For those states that have introduced or enacted bills, major provisions generally include a phase-in period and recovery of stranded costs.

Environmental matters

TVA's activities are subject to various federal, state and local environmental statutes and regulations. Major areas of regulation affecting TVA's activities include air pollution control, water pollution control and management, and disposal of solid and hazardous wastes. Because TVA is a federal agency, it is subject only to those state and local environmental requirements for which Congress has waived federal agency immunity. TVA's activities may, however, be subject to other more stringent environmental requirements that affect only federal activities.

TVA continues to be an industry leader in environmental compliance. Annually, TVA incurs costs associated with environmental regulatory legislation in the operation and management of its power and non-power programs. The majority of costs and environmental issues are related to control of emissions from fossil fuel plants, impact studies on proposed projects, nuclear plant decommissioning and storage and disposal of spent nuclear fuel.

TVA has incurred and continues to incur substantial capital expenditures and operating expenses to comply with environmental requirements (see note 10).

The Environmental Protection Agency has recently initiated a rule-making to further reduce nitrogen oxide emissions in 22 Eastern states including Kentucky, Tennessee and Alabama. Reductions from coal-fired utility units are being targeted in this rulemaking. If completed as proposed, TVA could be required to reduce emissions from its coal-fired units by more than 85 percent on a system-wide basis as early as the year 2002. The strategy for achieving such reductions has not yet been developed by the states or by TVA. However, the cost of this to TVA could be significant.

10-YEAR BUSINESS OUTLOOK

During 1997, TVA unveiled its 10-Year Business Plan with the objective of achieving a 50 percent reduction in debt, and it sets a target of reducing the total cost of power by 15 percent by 2007. These actions are deemed critical for TVA to meet the challenges of the coming restructured marketplace.

In anticipation of future challenges, TVA has already taken a number of steps, including:

- Substantially reducing the level of capital expenditures;
- Reducing employment levels and increasing the productivity of the workforce;
- Establishing a cap on debt well below the statutory ceiling authorized by Congress;
- Improving operating efficiencies of its fossil, hydro and nuclear plants to among the best in the nation; and
- Adopting an Integrated Resource Plan to comprehensively evaluate current and future energy needs and creating a TVA Strategy Team to assess future competitive conditions.

Implementation of the 10-Year Business Plan began when the Board of Directors approved an electric price increase effective October 1, 1997, which will produce a 5.5 percent increase in firm power revenues. In accordance with Board directives, all revenue from the price increase will be used for debt reduction. The 1998 price increase is expected to result in approximately \$345 million of additional revenue. Capital expenditures are projected to be \$732 million, down from a high of more than \$2 billion in 1993. Cash flows from business operations, along with other actions recommended by the plan, are projected to generate significant funds for debt reduction.

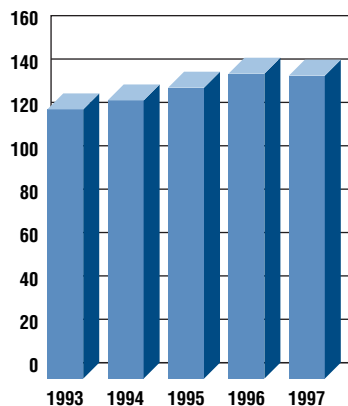
The plan also calls for a continuation of building customer allegiance and satisfaction for a competitive environment by developing opportunities for mutual support and partnership. TVA will expand its existing manufacturing credit for large industrial customers to mitigate the price increase. The manufacturing credit is intended to have a positive effect on economic growth and therefore benefit all consumers. The plan also recommends an offer to TVA distributor customers to change their power contracts after five years from a rolling 10-year term to a rolling five-year term.

RESULTS OF OPERATIONS

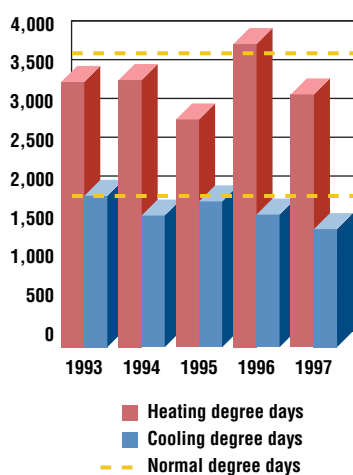
Net income for 1997 amounted to \$8 million, down from \$61 million in 1996. The reduction in earnings resulted from lower operating income attributable principally to mild weather experienced within TVA's service area during the winter and summer months of 1997, partially offset by other income related to certain investment earnings.

Net income for 1996 was \$61 million compared with \$10 million for 1995. This improvement was primarily driven by sales growth and increased operating efficiencies.

SALES OF ELECTRICITY
(billions of kWh)



WEATHER DEGREE DAYS



Operating revenues

Operating revenues were \$5,552 million in 1997 compared with \$5,693 million in 1996. The \$141 million decrease was primarily due to a decrease in energy sales to municipalities and cooperatives as a result of the cool summer and warm winter during 1997. The TVA service area experienced 17 percent lower heating degree days and 11 percent lower cooling degree days during 1997 compared with 1996. Accordingly, total kWh sales decreased 0.9 billion kWh, from 140.6 billion in 1996 to 139.7 billion in 1997.

The \$318 million increase in operating revenues from 1995 to 1996 was primarily due to an increase in kWh sales of approximately six billion kWh (4.5 percent), from 134 billion in 1995 to over 140 billion in 1996. The increase in kWh sales primarily resulted from overall growth within the municipalities and cooperatives segment and more extreme weather conditions in 1996.

Operating expenses

Operating expenses increased \$42 million, or 1.2 percent, from \$3,656 million in 1996 to \$3,698 million in 1997. The operation of the Watts Bar 1 and Browns Ferry 3 nuclear units for the entire year of 1997 resulted in higher depreciation and operating expenses in 1997 as compared with 1996. These expenses, however, were partially offset by lower net

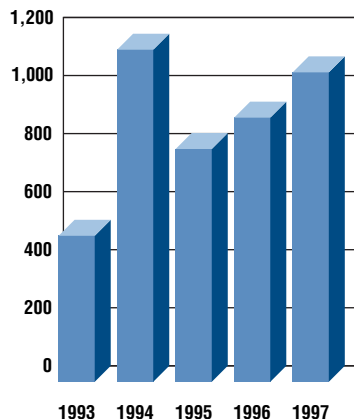
fuel and purchased power expense in 1997 compared with 1996 as a result of greater generation of lower-cost nuclear power and the decrease in total power sales for the year.

Total operating expenses increased \$208 million in 1996 versus 1995, or 6.0 percent, from \$3,448 million to \$3,656 million. The increase resulted primarily from increased generation during 1996 and the introduction of the two nuclear units to the power system. While operating and maintenance costs increased \$168 million, and depreciation and amortization expenses increased \$201 million, net fuel and purchased power expense declined \$165 million in 1996 compared with 1995 due to favorable fuel prices and greater off-system power sales.

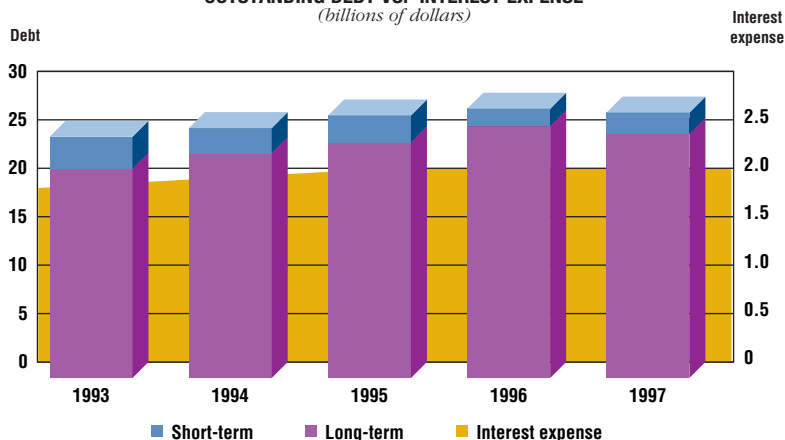
Other income and expenses

TVA had net other income of \$157 million in 1997 compared with net other expense of \$10 million in 1996 and \$91 million in 1995. The 1997 net other income consisted primarily of net investment earnings of the decommissioning trust funds of \$138 million. The 1995 net expense was primarily composed of a \$136 million charge for the voluntary early-out package offered employees, partially offset by the recognition of an \$81 million deferred gain from a 1993 sale of investments.

CASH FLOWS FROM OPERATIONS
(millions of dollars)



OUTSTANDING DEBT VS. INTEREST EXPENSE
(billions of dollars)



Interest expense

Gross interest expense remained essentially unchanged at \$2,084 million in 1997 compared with \$2,083 million in 1996. Total outstanding indebtedness net of unamortized discounts and other adjustments as of September 30, 1997, was \$26.9 billion, with an average interest rate of 7.56 percent, compared with \$27.3 billion, with an average interest rate of 7.60 percent as of September 30, 1996. The allowance for funds used during construction decreased from \$117 million in 1996 to \$81 million in 1997 as a result of the decline in overall construction spending.

Gross interest expense for 1996 increased \$59 million compared with 1995. This increase resulted from an increase in total outstanding debt from \$26.7 billion as of September 30, 1995, to \$27.3 billion as of September 30, 1996. In addition, allowance for funds used during construction declined \$81 million from \$198 million in 1995 to \$117 million in 1996.

Cash flows

Net cash provided by operations for 1997, 1996 and 1995 was \$1,066 million, \$910 million, and \$802 million, respectively. This positive trend reflects continued improvements in TVA's operations during the three-year period.

Net cash used in investing activities for 1997, 1996 and 1995 was \$580 million, \$1,254 million and \$1,871 million, respectively. These reductions reflect the decline in construction spending from \$1,868 million in 1995 to \$722 million in 1997.

Net cash (used in)/provided by financing activities for 1997, 1996 and 1995 was (\$425) million, \$530 million and \$1,119 million, respectively. The cash used in financing activities during 1997 reflects the repayment of total outstanding debt of approximately \$348 million, the first net reduction of debt since TVA first began issuing debt in 1961.

LIQUIDITY AND CAPITAL RESOURCES

Capital structure

Prior to 1959, the U.S. Government made appropriation investments in TVA power facilities. In 1959, TVA received congressional approval to issue bonds to the public to finance its growing power program. Since that time, TVA's power program has been required to be self-supporting from revenues it produces and capital it raises in public markets. Because TVA is wholly owned by the U.S. Government, TVA does not issue equity securities. As a result, TVA raises its capital requirements through the internal generation of funds or through borrowings subject to a congressionally mandated \$30 billion limit.

Like stockholders in investor-owned companies, the U.S. Government expects to earn a return on its investment. The rate of return on this investment, plus a repayment of the initial investment, is specified by law. Total repayments and return on investment by TVA to the U.S. Treasury exceed \$3 billion.

Capital resources

During 1997, TVA accessed the capital markets through a series of innovative financing structures designed to provide cost-effective financing for TVA and to expand its investor base. The proceeds from the 1997 borrowings were used to refinance existing debt. TVA continues to receive a bond rating of triple-A from Moody's Investors Service and from Standard and Poors rating agencies.

In December 1996, TVA reopened for the second time the 40-year bond putable in years two and 10 that was issued originally in April 1996. The bond was reopened for \$350 million and priced 100 basis points below the comparable U.S. Treasury issue. This financing was noted by *Investment Dealers Digest* as one of the breakthrough deals of 1996 and as the lowest-cost funding ever achieved by a U.S. corporation.

In February 1997, TVA issued \$300 million of Valley Inflation-indexed Power Securities (VIPs), the first inflation-indexed accreting principal bond offered by a U.S. corporation. The 10-year bonds have a fixed coupon rate that is paid on the inflation-adjusted principal amount and are identical in structure to the U.S. Treasury's 10-year inflation-indexed notes. TVA hedged its inflation exposure under the

VIPs through a 10-year fixed interest rate swap arrangement that provided TVA with lower-cost financing than a traditional 10-year financing.

In April 1997, TVA tapped the market for \$200 million with a two-year callable bond in an issue targeted to investors in the Western United States.

In July 1997, TVA marketed an exchange offer, in which investors received the opportunity to exchange the 5.98 percent 40-year put bond for a new put bond at 5.88 percent putable in years two and nine. Over \$1.2 billion of the 5.98 percent bonds were exchanged.

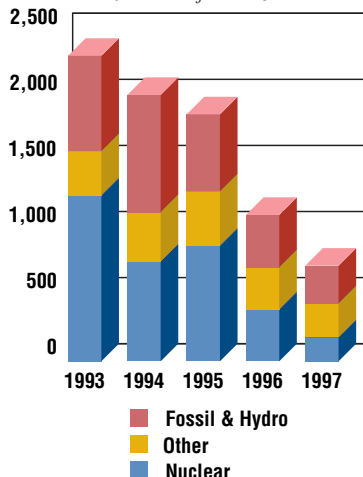
In August 1997, TVA re-entered the global market by reopening its outstanding 30-year bond issue for an additional \$750 million in a deal that created what is widely regarded as the long-dated dollar benchmark in the international markets. The issue now totals \$1.35 billion.

SYSTEM OPERATIONS

TVA is one of the most efficient utilities in the country, its power rates are among the lowest, and several of its power plants rank among the best performers in the industry, according to a report on the nation's top 100 utilities by *Electric Light & Power* magazine. Bringing Watts Bar and Browns Ferry nuclear units into operation was a key factor in allowing TVA to meet an all-time system peak demand of 26,670 megawatts on January 17, 1997, when the average temperature in the seven-state region was 10 degrees Fahrenheit (-12.2 degrees Celsius). For the first time ever, all of TVA's 59 fossil, five nuclear and 113 hydro units were concurrently generating power to meet the peak. TVA met the all-time demand without curtailment and was still able to help neighboring power systems meet their demands.

During 1997 TVA continued to make significant improvements in the operation of its generation and transmission systems. TVA's net winter dependable capacity was increased approximately 300 megawatts including enhancements made through the hydro-modernization efforts. TVA's nuclear capacity factor was 86 percent during 1997, near the top quartile of the industry, as compared with 85 percent during 1996. TVA's hydro equivalent availability factor also increased from 95.6 percent in 1996 to 96.4 percent in 1997 while TVA's fossil equivalent ability factor improved from 84.4 percent in 1996 to 84.6 percent in 1997. TVA also achieved a reduction in the minutes of transmission load not served—a key reliability indicator of the transmission system—declining from 9.0 minutes in 1996 to 6.7 minutes in 1997, primarily as a result of capital improvements. All of

CONSTRUCTION EXPENDITURES
(millions of dollars)



OPERATING HIGHLIGHTS

	1996	1997
Net winter dependable capacity (megawatts)	28,123	28,417
Hydro equivalent availability factor	95.6%	96.4%
Nuclear capacity factor	85.1%	86.0%
Load not served (minutes)	9.0	6.7

these improvements will enable TVA to continue to provide low-cost, reliable power in a competitive environment.

FORWARD-LOOKING STATEMENTS

This Management's Discussion and Analysis and other sections of TVA's annual report contain forward-looking information that is based on current expectations, estimates and projections. The information is not a guarantee of future performance and involves risks, uncertainties and assumptions that are difficult to predict and that may cause the actual results to differ materially from the future forward-looking statements.

NON-POWER PROGRAMS

TVA's responsibilities for developing and managing public resources began with its creation in 1933. Today, these resource-management activities help sustain the interconnected tributaries and the main stem of the Tennessee River—the nation's fifth-largest river system. Multiple benefits are balanced with environmental protection to provide flood control, navigation, recreation and electric power production.

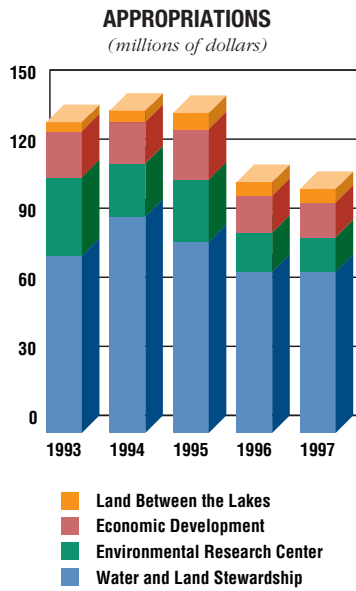
TVA's non-power programs made several significant achievements during 1997. The completion of a multi-year project for the Department of the Army at

the Rocky Mountain Arsenal was a highlight of 1997. This project leveraged taxpayer funds by transferring resource-management capabilities developed by TVA to applications at federal facilities in Colorado. Another joint effort between TVA and regional and national wildlife conservation groups enabled the opening of the Elk and Bison Prairie at Land Between the Lakes. In addition to this project, the final installment of a system to significantly increase dissolved oxygen in water was completed. Essential to sustainable water quality, the water released from 17 of TVA's 113 dams now provides a dramatically improved fish habitat that will encourage the continued growth of the region's thriving recreational fishing industry.

The public services on the Tennessee River are funded by federal appropriations. Additional funding of public services is possible with user fees and outside service revenues. Federal appropriations during 1997 and 1996 were \$106 million and \$109 million, respectively.

On October 13, 1997, the President signed an appropriations bill that (1) appropriated \$70 million for non-power programs in fiscal year 1998; (2) anticipates no further appropriations to TVA thereafter; and (3) authorizes and directs TVA, beginning with October 1, 1998, to fund those non-power programs that constitute "essential stewardship

activities" principally with additional revenues to be generated by TVA. This would include using power revenues to pay for non-power activities. "Essential stewardship activities" include capital and operating costs associated with managing the Tennessee River and its tributaries for navigation, flood control, recreation, water quality and other non-power purposes and the costs of managing the shorelines and other reservoir property not already allocated to the power system. The report of the House and Senate appropriations conference committee provides that the Office of Management and Budget should review TVA's non-power functions to determine whether TVA or some other entity should be responsible for their continuation and OMB should report to Congress by February 1998.



SIGNIFICANT ACCOUNTING STANDARDS

Accounting for the effects of regulation

TVA accounts for the financial effects of regulation in accordance with Statement of Financial Accounting Standards (SFAS) No. 71, *Accounting for the Effects of Certain Types of Regulation*. As a result, TVA records certain regulatory assets and liabilities that would not be recorded under generally accepted accounting principles for non-regulated entities.

TVA has approximately \$1.9 billion of regulatory assets (see note 1—Other deferred charges and Debt issue and reacquisition costs) along with approximately \$6.3 billion of deferred nuclear plants as of September 30, 1997. In the event that competition in the utility industry changes the application of SFAS No. 71, TVA would be required to evaluate

such regulatory assets under the provisions of SFAS No. 121, *Accounting for the Impairment of Long-Lived Assets and Long-Lived Assets to be Disposed Of*. Statement 121 establishes requirements for evaluating and measuring asset impairments and states that regulatory assets that are no longer probable of recovery through future revenues be charged to earnings. Such an event may have an adverse effect on future results of operations from the write-off of regulatory assets. However, TVA intends to seek full recovery of any regulatory assets that may result from TVA's transition to doing business in the competitive market.

STATEMENTS OF INCOME—POWER PROGRAM

For the years ended September 30 (in millions)	1997	1996	1995
Operating revenues			
Sales of electricity			
Municipalities and cooperatives	\$4,811	\$4,980	\$4,654
Industries directly served	464	452	460
Federal agencies	179	172	179
Other	98	89	82
Total operating revenues	5,552	5,693	5,375
Operating expenses			
Fuel and purchased power, net	1,211	1,278	1,443
Operating and maintenance	1,201	1,218	1,050
Depreciation and amortization	1,014	904	703
Tax-equivalents	272	256	252
Total operating expenses	3,698	3,656	3,448
Operating income	1,854	2,037	1,927
Other income (expense), net	157	(10)	(91)
Income before interest expense	2,011	2,027	1,836
Interest expense			
Interest on debt	1,993	1,965	1,908
Amortization of debt discount, issue, and reacquisition costs, net	91	118	116
Allowance for funds used during construction	(81)	(117)	(198)
Net interest expense	2,003	1,966	1,826
Net income	\$ 8	\$ 61	\$ 10

The accompanying notes are an integral part of these financial statements.

Balance Sheets

At September 30 (in millions)

Assets	Power program		All programs	
	1997	1996	1997	1996
Current assets				
Cash and cash equivalents	\$ 299	\$ 238	\$ 374	\$ 318
Accounts receivable	701	680	707	689
Inventories at average cost and other				
Fuel	112	110	112	110
Other	287	278	287	278
Total current assets	1,399	1,306	1,480	1,395
Property, plant, and equipment				
Completed plant	28,528	27,955	29,632	29,069
Less accumulated depreciation	(7,178)	(6,553)	(7,469)	(6,854)
Net completed plant	21,350	21,402	22,163	22,215
Construction in progress	605	744	622	764
Deferred nuclear generating units	6,303	6,293	6,303	6,293
Nuclear fuel and capital leases	1,040	1,082	1,040	1,082
Total property, plant, and equipment	29,298	29,521	30,128	30,354
Investment funds	561	440	561	440
Deferred charges and other assets				
Loans and other long-term receivables	121	319	170	375
Debt issue and reacquisition costs	1,096	1,162	1,096	1,162
Other deferred charges	1,209	1,281	1,209	1,281
Total deferred charges and other assets	2,426	2,762	2,475	2,818
Total assets	\$33,684	\$34,029	\$34,644	\$35,007

The accompanying notes are an integral part of these financial statements

Liabilities and proprietary capital	Power program		All programs	
	1997	1996	1997	1996
Current liabilities				
Accounts payable	\$ 468	\$ 392	\$ 487	\$ 417
Accrued liabilities	161	187	172	196
Accrued interest	499	498	499	498
Discount notes	2,151	1,774	2,151	1,774
Current maturities of long-term debt	574	2,250	574	2,250
Total current liabilities	3,853	5,101	3,883	5,135
Other liabilities	1,704	1,580	1,704	1,580
Long-term debt				
Public bonds—senior	20,354	19,403	20,354	19,403
Federal Financing Bank—senior	3,200	3,200	3,200	3,200
Public bonds—subordinated	1,100	1,100	1,100	1,100
Unamortized discount and other adjustments	(502)	(383)	(502)	(383)
Total long-term debt	24,152	23,320	24,152	23,320
Proprietary capital				
Appropriation investment	588	608	4,887	4,800
Retained earnings reinvested in power program	3,387	3,420	3,387	3,420
Accumulated net expense of nonpower programs	—	—	(3,369)	(3,248)
Total proprietary capital	3,975	4,028	4,905	4,972
Total liabilities and proprietary capital	\$33,684	\$34,029	\$34,644	\$35,007

STATEMENTS OF CASH FLOWS

For the years ended September 30 (in millions)	Power program			All programs		
	1997	1996	1995	1997	1996	1995
Cash flows from operating activities						
Net power income	\$ 8	\$ 61	\$ 10	\$ 8	\$ 61	\$ 10
Net expense of nonpower programs	–	–	–	(121)	(127)	(182)
Items not requiring (providing) cash						
Depreciation and amortization	1,066	924	715	1,080	938	728
Allowance for funds used during construction	(81)	(117)	(198)	(81)	(117)	(198)
Nuclear fuel amortization	196	156	112	196	156	112
Other, net	(151)	162	72	(151)	164	142
Changes in current assets and liabilities						
Accounts receivable	(24)	(1)	(5)	(21)	7	22
Inventories and other	(19)	(22)	(8)	(19)	(22)	(8)
Accounts payable and accrued liabilities	56	(246)	74	52	(250)	(36)
Accrued interest	1	43	31	1	43	31
Other	14	(50)	(1)	14	(50)	(2)
Net cash provided by operating activities	1,066	910	802	958	803	619
Cash flows from investing activities						
Construction expenditures	(722)	(1,107)	(1,868)	(733)	(1,121)	(1,880)
Allowance for funds used during construction	81	117	198	81	117	198
Nuclear fuel	(159)	(76)	(77)	(159)	(76)	(77)
Proceeds from sale of investments	513	(162)	(100)	513	(162)	(100)
Purchases of investments	(483)	–	–	(483)	–	–
Proceeds from sale of loans receivable	211	–	–	211	–	–
Other, net	(21)	(26)	(24)	(13)	(13)	(39)
Net cash used in investing activities	(580)	(1,254)	(1,871)	(583)	(1,255)	(1,898)
Cash flows from financing activities						
Long-term debt						
Issues	3,100	4,400	3,500	3,100	4,400	3,500
Redemptions	(3,829)	(2,706)	(2,503)	(3,829)	(2,706)	(2,503)
Short-term borrowings, net	377	(1,057)	222	377	(1,057)	222
Borrowing expenses, net	(12)	(44)	(38)	(12)	(44)	(38)
Congressional appropriations	–	–	–	106	109	139
Payments to U.S. Treasury	(61)	(63)	(62)	(61)	(63)	(62)
Net cash (used in) provided by financing activities	(425)	530	1,119	(319)	639	1,258
Net change in cash and cash equivalents	61	186	50	56	187	(21)
Cash at beginning of period	238	52	2	318	131	152
Cash at end of period	\$ 299	\$ 238	\$ 52	\$ 374	\$ 318	\$ 131

The accompanying notes are an integral part of these financial statements.

STATEMENTS OF CHANGES IN PROPRIETARY CAPITAL—POWER PROGRAM

For the years ended September 30 (in millions)	1997	1996	1995
Retained earnings reinvested at beginning of period	\$ 3,420	\$ 3,402	\$3,434
Net income	8	61	10
Return on appropriation investment	(41)	(43)	(42)
Retained earnings reinvested at end of period	3,387	3,420	3,402
Appropriation investment at beginning of period	608	628	648
Return of appropriation investment	(20)	(20)	(20)
Appropriation investment at end of period	588	608	628
Proprietary capital at end of period	\$ 3,975	\$ 4,028	\$ 4,030

STATEMENTS OF NET EXPENSE—NONPOWER PROGRAMS

For the years ended September 30 (in millions)	1997	1996	1995
Water and Land Stewardship	\$ 78	\$ 75	\$ 63
Land Between The Lakes	7	7	6
Economic Development	22	25	23
Environmental Research Center	14	20	21
Columbia Dam	—	—	69
Net expense	\$ 121	\$ 127	\$ 182

STATEMENTS OF CHANGES IN PROPRIETARY CAPITAL—NONPOWER PROGRAMS

For the years ended September 30 (in millions)	1997	1996	1995
Proprietary capital at beginning of period	\$ 944	\$ 964	\$1,007
Congressional appropriations	106	109	139
Net expense	(121)	(127)	(182)
Other, net	1	(2)	—
Proprietary capital at end of period	\$ 930	\$ 944	\$ 964

The accompanying notes are an integral part of these financial statements.

1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

General

TVA is a wholly owned corporate agency and instrumentality of the United States. It was established by the TVA Act with the objective of developing the resources of the Tennessee Valley region in order to strengthen the regional and national economy and the national defense by providing: (1) an ample supply of power within the region, (2) navigable channels and flood control for the Tennessee River System, and (3) agricultural and industrial development and improved forestry in the region. TVA carries out these regional and national responsibilities in a service area that centers on Tennessee and parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina and Virginia.

TVA's programs are divided into two types of activities—the power program and the non-power programs. Substantially all TVA revenues and assets are attributable to the power program. The power program is separate and distinct from the non-power programs and is required to be self-supporting from power revenues and funds borrowed from public markets. The power program receives no congressional appropriations and is required to make annual payments to the U.S. Treasury in repayment of, and as a return on, the government's appropriation investment in TVA power facilities. Most of the funding for TVA's non-power programs has been provided by congressional appropriations. Certain nonpower activities are also funded by various revenues and user fees. Financial accounts for the power and non-power programs are kept separately.

Power rates are established by the TVA Board of Directors as authorized by the TVA Act. The TVA Act requires TVA to charge rates for power that, among other things, will produce gross revenues sufficient to provide funds for operation, maintenance and administration of its power system; payments to states in lieu of taxes; and debt service on outstanding indebtedness.

Fiscal year

Unless otherwise indicated, years (1997, 1996, etc.) refer to TVA's fiscal years ended September 30.

Revenue recognition

Revenues from power sales are recorded as service is rendered to customers. TVA accrues estimated unbilled revenues for power sales provided to customers for the period of time from the end of the billing cycle to month-end.

Property, plant, and equipment, and depreciation

Additions to plant are recorded at cost, which includes direct and indirect costs such as general engineering, a portion of corporate overhead and an allowance for funds used during construction. The cost of current repairs and minor replacements is charged to operating expense. The TVA Act requires TVA's Board of Directors to allocate the

cost of completed multi-purpose projects between the power and non-power programs, subject to the approval of the President of the United States. The original cost of property retired, together with removal costs less salvage value, is charged to accumulated depreciation. Depreciation is generally computed on a straight-line basis over the estimated service lives of the various classes of assets. Depreciation expense expressed as a percentage of the average annual depreciable completed plant was 3.21 percent for 1997 and 1996 and 3.35 percent for 1995.

Decommissioning costs

During 1997 the excess of decommissioning investment earnings over the annual decommissioning provision was recorded as other income. Of the total investment earnings of \$151 million, \$13 million was recorded as an offset to the decommissioning provision, with the \$138 million excess recorded as other income. During 1996 the annual decommissioning provision of \$30 million exceeded the earnings from decommissioning fund investments of \$17 million and the \$13 million excess was charged to depreciation expense. During 1995, investment earnings approximated decommissioning expense and no decommissioning charges were made to depreciation expense.

Allowance for funds used during construction

The practice of capitalizing an allowance for funds used during construction is followed in the power program. The allowance is applicable to construction in progress excluding deferred nuclear generating units. In 1995, TVA changed its assumptions used in determining the interest rate used to calculate the allowance for funds used during construction. The change was made to more accurately reflect the nature of the indebtedness issued to fund construction. The effect of the change for 1995 was to increase the amount of interest capitalized by approximately \$56 million.

Loans and other long-term receivables

In June 1997, TVA entered into a five-year agreement with a bank pursuant to which TVA agreed to sell certain receivables relating to TVA's consumer energy-conservation programs. As of September 30, 1997, a \$211-million pool had been sold for proceeds equal to its carrying amount. In accordance with Statement of Financial Accounting Standards (SFAS) No. 125, *Accounting for Transfers and Servicing of Financial Assets and Extinguishment of Liabilities*, the transaction has been reflected as a reduction of loans and other long-term receivables. Under the terms of the agreement, TVA has retained substantially the same risk of credit loss as if the receivables had not been sold and, accordingly, an appropriate liability account has been retained.

Other deferred charges

Deferred charges primarily include prepaid pension costs and regulatory assets capitalized under the provisions of SFAS No. 71, *Accounting for the Effects of Certain Types of Regulation*. At September 30, 1997, other deferred charges included total unamortized regulatory assets of \$950 million—of which \$468 million represents a capitalized interest component of nuclear fuel; \$411 million represents a transition obligation related to the adoption of SFAS No. 112, *Employers Accounting for Postemployment Benefits*; and \$71 million represents TVA's portion of the costs for decommissioning the Department of Energy's nuclear waste disposal facility. At September 30, 1996, the unamortized balances of these three regulatory assets were \$595 million, \$446 million and \$81 million, respectively, for a total of \$1,122 million. These regulatory assets are being amortized over periods ranging from eight to 15 years, generally on a straight-line basis.

Investment funds

Investment funds consist primarily of a portfolio of investments in trusts designated for funding nuclear decommissioning requirements (see note 10). These funds, at September 30, 1997, were invested in portfolios generally designed to earn returns in line with overall equity market performance.

Debt issue and reacquisition costs

Issue and reacquisition expenses, call premiums and other related costs are deferred and amortized (accreted), respectively, on a straight-line basis over the term of the related outstanding securities.

TVA has also incurred premiums related to certain advanced refundings. In accordance with regulatory practices, TVA has deferred these premiums and is amortizing them to expense ratably through the maturity dates of the new debt issues. The unamortized balances of such regulatory assets at September 30, 1997 and 1996, were \$983 million and \$1,042 million, respectively.

Tax-equivalents

The TVA Act requires TVA to make payments to states and local governments in which the power operations of the corporation are conducted. The basic amount is 5 percent of gross revenues from the sale of power to other than federal agencies during the preceding year, with the provision for minimum payments under certain circumstances. Cash paid for tax-equivalents for 1997, 1996 and 1995 have been \$272 million, \$256 million and \$252 million, respectively.

Interest and capital costs

During 1997, 1996 and 1995, cash paid for interest on outstanding indebtedness (net of amount capitalized) was \$1,911 million, \$1,805 million and \$1,678 million, respectively. In addition to paying interest on outstanding indebtedness, the TVA Act requires TVA to make annual

payments to the U. S. Treasury. The annual Treasury payments represent a repayment of the original appropriation investment, along with a return on the appropriation investment. TVA paid \$20 million each year for 1997, 1996 and 1995 as a repayment of the appropriation investment. TVA paid \$41 million to the U.S. Treasury in 1997 as a return on the appropriation investment, while paying \$43 million in 1996 and \$42 million in 1995.

Risk-management activities

TVA is exposed to market risk from changes in interest rates and currency exchange rates. To manage volatility relating to these exposures, TVA has entered into various derivative transactions, principally interest rate swap agreements and foreign currency swap contracts. TVA is exposed to credit losses in the event of nonperformance by counterparties on the risk-management instruments. TVA monitors such risk and does not believe that there is a significant risk of nonperformance by any of the parties of these instruments.

Statements of cash flows

Cash and cash equivalents include the cash available in commercial bank accounts and U.S. Treasury accounts, as well as short-term securities held for the primary purpose of general liquidity. Such securities mature within three months from the date of acquisition.

Research and development costs

Expenditures related to research and development costs of new or existing products and processes are expensed as incurred. The amounts charged against income were \$44 million in 1997, \$45 million in 1996 and \$43 million in 1995.

Insurance

TVA is primarily self-insured for property loss, workers' compensation, general liability and automotive liability. TVA is also self-insured for health care claims for eligible active and retired employees. Consulting actuaries assist TVA in determining its liability for self-insured claims. TVA maintains nuclear liability insurance with an outside party (see note 10).

Management estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the related amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

2 NUCLEAR POWER PROGRAM

The nuclear power program at September 30, 1997, consisted of nine units—five operating, three deferred, and one inoperative—at four locations, with investments in property, plant and equipment as follows and in the status indicated:

(in millions)	Operating units	Installed capacity (megawatts)	Completed plant, net	Construction in progress	Deferred	Fuel investment
Browns Ferry	2	2,304	\$ 3,508	\$ 44	\$ —	\$289
Sequoyah	2	2,442	2,055	77	—	146
Watts Bar	1	1,270	6,674	34	1,716	108
Bellefonte	—	—	—	—	4,587	—
Raw materials			—	—	—	297
Total	5	6,016	\$12,237	\$155	\$6,303	\$840

Browns Ferry 3, taken off-line in March 1985 for plant modifications and regulatory improvements, was returned to service in 1996. Browns Ferry 1, also taken off-line in 1985 for modifications and improvements, will continue to remain in an inoperative status until its ultimate disposition is determined. For financial reporting purposes, the undepreciated cost of Browns Ferry 1 of \$80 million is included in net completed plant and is being depreciated as part of the recoverable cost of the plant over the remaining license period.

Watts Bar 1 began operating commercially during 1996. In 1988, TVA suspended construction activities on Watts Bar 2, and the unit is currently in lay-up. Bellefonte 1 and 2 were deferred in 1988 and 1985, respectively. Estimated 1998 expenditures for the three deferred units total \$9 million and are limited to lay-up, maintenance and ensuring that options remain viable.

In 1993, TVA began an integrated resource planning process to determine TVA's strategy for meeting future customer energy demands. As part of this long-term energy strategy, TVA re-evaluated the need for finishing Bellefonte 1 and 2 and Watts Bar 2 as nuclear units. In December 1994, TVA determined it will not, by itself, complete

Bellefonte 1 and 2 and Watts Bar 2 as nuclear units. In the Integrated Resource Plan (IRP), TVA determined that it would study the potential for converting the Bellefonte Nuclear Plant to a combined cycle plant utilizing natural gas or gasified coal as the primary fuel and/or joint venturing with a partner for completion. The feasibility of converting Bellefonte to such an alternate fuel will require in-depth engineering and financial analyses; and accordingly, TVA is utilizing a team of technical and financial experts. The IRP also concluded that Watts Bar 2 should remain in deferred status until completion of the Bellefonte study. The impact on TVA's financial position of completing, converting or joint venturing these units will be determined upon completion of the Bellefonte study. The future decisions on these units will ultimately impact the method of cost recovery, and the TVA Board has determined that it will, at that time, establish rate adjustments and operating policies to ensure full recovery of the cost of these units and compliance with the requirements of the TVA Act. For financial reporting purposes, the cost of the three units is presented as deferred nuclear generating units.

3 COMPLETED PLANT

Completed plant consists of the following at September 30:

(in millions)		1997			1996		
Power program	Cost	Accumulated depreciation	Net	Cost	Accumulated depreciation	Net	
Fossil plants	\$ 7,427	\$ 2,954	\$ 4,473	\$ 7,320	\$ 2,790	\$ 4,530	
Nuclear plants	14,514	2,277	12,237	14,370	1,835	12,535	
Transmission	3,144	982	2,162	2,911	943	1,968	
Hydro plants	1,382	471	911	1,273	454	819	
Other	2,061	494	1,567	2,081	531	1,550	
Total Power	\$28,528	\$7,178	\$21,350	\$27,955	\$6,553	\$21,402	

4 LEASES

Certain property, plant and equipment are leased under agreements with terms ranging from one to 30 years. Most of the agreements include purchase options or renewal options that cover substantially all the economic lives of the properties. Obligations under capital lease agreements in effect at September 30 were:

Fiscal year (in millions)	General plant capital leases
1998	\$ 36
1999	36
2000	36
2001	36
2002	36
Thereafter	301
Total future minimum lease payments	481
Less interest element	(280)
Present value of future minimum lease payments	\$201

5 APPROPRIATION INVESTMENT—POWER PROGRAM

The TVA Act requires TVA to make annual payments to the U.S. Treasury from net power proceeds. The payments required by the TVA Act may be deferred under certain circumstances for not more than two years. The return is based on the appropriation investment as of

the beginning of the year and the computed average interest rate payable by the U.S. Treasury on its total marketable public obligations as of the same date (6.71 percent at September 30, 1997).

6 DEBT**Borrowing authority**

The TVA Act authorizes TVA to issue bonds, notes, and other evidences of indebtedness up to a total of \$30 billion outstanding at any one time. TVA must meet certain cash flow and earnings tests that are contained in the TVA Act and the Basic TVA Power Bond Resolution. Debt service on these obligations, which is payable solely from TVA's net power proceeds, has precedence over the payment to the U.S.

Treasury described in note 5.

Debt outstanding

Debt outstanding at September 30, 1997 and 1996 (excluding defeased debt of \$950 million at September 30, 1996, which is not considered by TVA to be debt that is subject to the \$30 billion bond limit), consisted of the following:

(in millions)	1997	1996
Short-term debt		
Held by the public		
Discount notes (net of discount)	\$2,151	\$1,774
Current maturities of long-term debt - 5.07% to 5.98%	574	2,250
Total short-term debt	2,725	4,024
Long-term debt		
Held by the public - senior		
Maturing in 1998	-	1,453
Maturing in 1999 - 5.88% to 6.58%	2,450	750
Maturing in 2000 - 8.375%	1,000	1,000
Maturing in 2001 - 6.00% to 6.50%	1,800	1,250
Maturing in years 2002 through 2045 - 6.125% to 8.625%	15,104	14,950
Held by Federal Financing Bank—senior		
Maturing in 2003 through 2016 - 8.535% to 11.695%	3,200	3,200
Held by the public- subordinated		
Maturing in 2045 through 2046 - 7.50% to 8.00%	1,100	1,100
Total long-term debt	24,654	23,703
Unamortized discount and other adjustments	(502)	(383)
Net long-term debt	24,152	23,320
Total debt	\$26,877	\$27,344

Short-term debt

The weighted average rates applicable to short-term debt outstanding in the public market as of September 30, 1997 and 1996, were 5.56 percent and 5.38 percent, respectively. During 1997, 1996 and 1995, the maximum outstanding balance of short-term borrowings held by the public was (in millions) \$3,962, \$3,537 and \$3,503 respectively, and the average amounts (and weighted average interest rates) of such borrowings were approximately (in millions), \$2,743 (5.47 percent), \$2,692 (5.50 percent) and \$2,743 (5.83 percent), respectively.

Put and call options

Bond issues of \$12.8 billion held by the public are redeemable in whole or in part, at TVA's option, on call dates ranging from the present to April 2012 at call prices ranging from 100 percent to 106.7 percent of the principal amount. Additionally, TVA has bond issues of \$2.1 billion

held by the public that are redeemable in whole or in part at the option of the respective bondholders. One bond issue totaling \$500 million, which matures in July 2045, is redeemable in 2001 by the bondholders. A second issue totaling \$121.3 million, which matures in April 2036, is redeemable in 1998 or 2006 at the option of the bondholders and a third issue totaling \$1.5 billion, which matures in April 2036, is redeemable in 1999 or 2006 at the option of the bondholders. All of these issues are reported in the debt schedule with maturity dates corresponding to the earliest redeemable dates.

Subsequent to September 30, 1997, TVA monetized the call provisions on approximately \$1 billion of public bond issues. The premium received by TVA has been deferred and is being amortized over the term of the agreements.

Bond discount and premium

Discounts and premiums on power borrowings are deferred and amortized (accrued), respectively, as components of interest expense on a straight-line basis over the term of the related outstanding securities.

Foreign currency transaction and interest rate swap

During 1996, TVA entered into a currency swap contract as a hedge for a foreign currency denominated debt transaction where TVA issued 1.5 billion Deutschmark bonds, the cash flows of which were swapped for those of a U.S. dollar obligation of \$1 billion. Any gain (loss) on the debt instrument due to the foreign currency transaction is offset by a loss (gain) on the swap contract. At September 30, 1997

and 1996 the currency transaction resulted in gains of \$131 million and \$16 million, respectively, which are included in the account "unamortized discount and other adjustments." The offsetting loss on the swap contract is recorded as a deferred liability. If any loss/gain were to be incurred as a result of the early termination of the swap contract, any resulting charge (income) would be amortized over the remaining life of the bond as a component of interest expense.

Additionally, TVA entered into a 10-year fixed rate interest swap agreement with a notional amount of \$300 million. Such agreement was entered into to hedge TVA's inflation exposure related to its inflation-indexed accreting principal bonds.

7 FAIR VALUE OF FINANCIAL INSTRUMENTS

TVA uses the methods and assumptions described below to estimate the fair values of each significant class of financial instrument.

Cash and cash equivalents, and short-term debt

The carrying amount approximates fair value because of the short-term maturity of these instruments.

Investment funds

At September 30, 1997, these investments were classified as trading securities and carried at their fair value.

Loans and other long-term receivables

Fair values for these homogeneous categories of loans and receivables are estimated by determining the present value of future cash flows using the current rates at which similar loans are presently made to borrowers with similar credit ratings and for the same remaining maturities.

Bonds

Fair value of long-term debt traded in the public market is determined by multiplying the par value of the bonds by the quoted market price (asked price) nearest the balance sheet date. The fair value of other long-term debt and long-term debt held by the Federal Financing Bank is estimated by determining the present value of future cash flows using rates of financial instruments with quoted market prices of similar characteristics and the same remaining maturities.

The estimated values of TVA's financial instruments at September 30 are as follows :

(in millions)	1997		1996	
	Carrying amount	Fair amount	Carrying amount	Fair amount
Cash and cash equivalents	\$ 374	\$ 374	\$ 318	\$ 318
Investment funds	561	561	440	440
Loans and other long-term receivables	170	160	375	365
Short-term debt	2,151	2,151	1,774	1,774
Long-term debt, including current maturities	25,228	26,127	25,953	26,562

The fair market value of the financial instruments held at September 30, 1997, may not be representative of the actual gains or losses that will be recorded when these instruments mature or if they are called or presented for early redemption.

8 BENEFIT PLANS**Pension plan**

TVA has a defined benefit plan for most full-time employees that provides two benefit structures, the Original Benefit Structure and the Cash Balance Benefit Structure. The plan assets are primarily stocks and bonds. TVA contributes to the plan such amounts as are agreed upon between TVA and the TVA Retirement System board of directors, which in no event would be less than the amount necessary on an actuarial basis to provide assets sufficient to meet obligations for benefits. The pension benefit for participants in the Original Benefit Structure is based on the member's years of creditable service, average base pay for the highest three consecutive years and the pension rate for the member's

age and years of service, less a Social Security offset.

The Cash Balance Benefit Structure was implemented January 1, 1996. The pension benefit for participants in the Cash Balance Benefit Structure is based on credits accumulated in the member's account and member's age. A member's account receives credits each pay period equal to 6 percent of his or her straight-time earnings. The account also increases at an interest rate equal to the change in the Consumer Price Index plus 3 percent, which amounted to 5.82 percent for both 1997 and 1996. The components of pension expense for the years ended September 30 were:

(in millions)	1997	1996	1995
Pension expense:			
Service cost	\$ 70	\$ 72	\$ 62
Interest cost on projected benefit obligation	308	309	304
Actual return on assets	(1,334)	(616)	(816)
Net amortization and deferral	899	217	450
Net pension (income) expense	\$(57)	\$(18)	\$ -
Funded status:			
Actuarial present value of benefit obligations:			
Vested benefit obligation	\$(3,770)	\$(3,506)	\$(3,256)
Nonvested benefits	(48)	(50)	(113)
Accumulated benefit obligation	(3,818)	(3,556)	(3,369)
Effects of projected future compensation	(391)	(401)	(323)
Projected benefit obligation	(4,209)	(3,957)	(3,692)
Plan assets at fair value	5,962	4,851	4,375
Excess of plan assets over projected benefit obligation	1,753	894	683
Unrecognized net gain	(1,536)	(770)	(627)
Unrecognized net obligation being amortized over 15 years beginning October 1, 1987	-	2	2
Prepaid pension cost	\$217	\$126	\$58

The discount rate used to determine the actuarial present value of the projected benefit obligation was 8.0 percent in 1997 and 1996 and 7.5 percent in 1995. The assumed annual rates of increase in future compensation levels for 1997, 1996, and 1995 ranged from 3.3 to 8.3 percent. The expected long-term rate of return on plan assets was 11 percent for 1997, 1996 and 1995.

Other postretirement benefits

TVA sponsors an unfunded defined benefit postretirement plan that provides for contributions toward the cost of retirees' medical coverage. The plan covers employees who, at retirement, are age 60 and older (or who are age 50 and have at least five years of service). TVA's contributions are a flat dollar amount based upon the participants' age

and years of service and certain payments toward the plan costs.

The annual assumed cost trend for covered benefits is 10.5 percent in 1997, decreasing by one-half percent per year reaching 5.0 percent in 2008 and thereafter. For 1996 and 1995, an annual trend rate of 11.0 percent and 11.5 percent, respectively, was assumed. The effect of the change in assumptions on a cost basis was not significant. Increasing the assumed health-care cost trend rates by 1 percent would increase the accumulated postretirement benefit obligation (APBO) as of September 30, 1997, by \$15 million and the aggregated service and interest cost components of net periodic postretirement benefit cost for 1997 by \$3 million.

The weighted average discount rate used in determining the APBO was 8.0 percent for 1997 and 1996, and 7.5 percent for 1995. Any net

unrecognized gain or loss resulting from experience different from that assumed or from changes in assumptions, in excess of 10 percent of the APBO, is amortized over the average remaining service period of

active plan participants. The following sets forth the plan's funded status at September 30:

(in millions)	1997	1996	1995
Accumulated postretirement benefit obligation (APBO)			
Retirees	\$220	\$230	\$214
Fully eligible active plan participants	2	4	1
Other active plan participants	126	187	116
APBO	348	421	331
Unrecognized net (loss) gain	-	(95)	(15)
Accrued postretirement benefit cost	\$348	\$326	\$316
Net periodic postretirement benefit cost			
Service cost	\$13	\$8	\$7
Interest cost	32	24	26
Amortization of loss	4	-	-
Net periodic postretirement benefit cost	\$49	\$32	\$33

Other postemployment benefits

Statement of Financial Accounting Standards No. 112, *Employers Accounting for Postemployment Benefits* (SFAS No. 112), applies to postemployment benefits, including workers' compensation provided to former or inactive employees, their beneficiaries and covered dependents after employment but before retirement. Adoption of SFAS No. 112 in 1995 changed TVA's method of accounting from recognizing costs as benefits are paid to accruing the expected costs of providing these benefits. This resulted in recognition of an original transition obligation of approximately \$280 million. During 1996, TVA made adjustments to certain assumptions utilized in the determination of the obligation at September 30, 1996, which resulted in an increase in the original transition obligation of approximately \$194 million. In connection with the adoption of SFAS No. 112, and related approval by its Board of Directors, TVA recorded the transition obligation as a regulatory asset. The regulatory asset is being amortized over approximately 15 years, whereby the annual expense will approximate the expense that would be recorded on an as-paid basis.

Early-out and accelerated severance packages

In 1997, 1996 and 1995 TVA provided both voluntary and involuntary severance packages, which affected an aggregate of approximately 4,900 employees. During this period, severance costs totaled approximately \$196 million and consisted primarily of severance pay (\$150 million) and other retirement and postretirement benefits (\$46 million). Also during 1997 TVA recognized a related pension curtailment gain of \$27 million. The aggregate costs of the severance packages have been charged to the power program primarily as other expense during 1997, 1996 and 1995 in the amounts of \$11 million, \$35 million and \$136 million, respectively, and the non-power program as non-power expense during 1997 and 1996 in the amounts of \$8 million and \$6 million, respectively.

9 MAJOR CUSTOMERS

One municipal customer accounts for approximately 9 percent of total power sales and four other municipal customers account for an additional aggregate 19 percent of total power sales. These five municipal

customers purchase power from TVA under long-term contracts for terms of 20 years, which require 10-years notice to terminate.

10 CONSTRUCTION EXPENDITURES AND COMMITMENTS AND CONTINGENCIES

Construction expenditures

Construction expenditures, including capitalized interest, are estimated to be approximately \$732 million for 1998 and \$659 million for 1999. These estimates are revised periodically to reflect changes in economic conditions and other factors considered in their determination.

Purchase commitments

TVA has entered into approximately \$2.3 billion in long-term commitments ranging in terms of up to eight years for the purchase of coal.

Contingencies

Nuclear insurance. The Price-Anderson Act sets forth an indemnification and limitation of liability plan for the U.S. nuclear industry. All Nuclear Regulatory Commission (NRC) licensees, including TVA, maintain nuclear liability insurance in the amount of \$200 million for each plant with an operating license. The second level of financial protection required is the industry's retrospective assessment plan, using deferred premium charges. The maximum amount of the deferred premium for each nuclear incident is approximately \$79 million per reactor, but not more than \$10 million per reactor may be charged in any one year for each incident. TVA could be required to pay a maximum of \$474 million per nuclear incident on the basis of its six licensed units, but it would have to pay no more than \$60 million per incident in any one year.

In accordance with NRC regulations, TVA carries property and decontamination insurance of \$1.06 billion at each licensed nuclear plant for the cost of stabilizing or shutting down a reactor after an accident. Some of this insurance may require the payment of retrospective premiums of up to a maximum of approximately \$34 million.

Clean Air legislation. The Clean Air Act Amendments of 1990 require fossil-fuel fired generation units to reduce their sulfur dioxide and nitrogen oxide emissions in two phases in order to control acid rain. The Phase I compliance period commenced on January 1, 1995, for sulfur dioxide and January 1, 1996, for nitrogen oxide, while the Phase II compliance period commences on January 1, 2000. Based on the level of emissions, 26 of TVA's 59 operating coal-fired units are classified as Phase I units, with the remaining units being Phase II units. Compliance with these requirements has resulted in substantial expenditures for the reduction of emissions at TVA's coal-fired generating plants.

TVA's compliance strategy to reduce sulfur dioxide emissions

includes the use of scrubbers at six fossil units and the use of lower-sulfur coal at the remaining 53 fossil units. TVA has completed all planned scrubbers and is on schedule to complete the change-over to lower-sulfur coal.

Nitrogen oxide reductions are required for 19 of TVA's Phase I units. These reductions were achieved through the installation of low-nitrogen-oxide burners at 13 units. TVA is in compliance with all Phase I requirements and is currently installing nitrogen oxide reduction equipment to bring TVA's remaining units in compliance with Phase II nitrogen oxide emission requirements.

Expenditures related to the Clean Air projects during 1997 and 1996 were approximately \$40 million and \$80 million, respectively. TVA has already completed the actions necessary to achieve Phase I compliance for both sulfur dioxide and nitrogen oxide emissions, and TVA is proceeding to take actions to comply with Phase II requirements that become effective in the year 2000 or after. The total cost of compliance cannot reasonably be determined at this time because of the uncertainties surrounding final Environmental Protection Agency regulations, resultant compliance strategy, potential for development of new emission control technologies and future amendments to the legislation.

Hazardous substances. The release and cleanup of hazardous substances are regulated under the Comprehensive Environmental Response, Compensation, and Liability Act. In a manner similar to other industries and power systems, TVA has generated or used hazardous substances over the years. TVA has been identified as a potentially responsible party with respect to three off-site disposal areas. TVA's liability at these sites has not yet been determined. In addition, TVA is currently investigating two other sites that TVA either owns or partially owns. TVA may have cleanup responsibilities at those sites by virtue of its control of the property. TVA's potential liabilities for its share of cleanup costs at these sites are uncertain but are not expected to be substantial.

Pending litigation. TVA is a party to various civil lawsuits and claims that have arisen in the ordinary course of its business. Although the outcome of pending litigation cannot be predicted with any certainty, it is the opinion of TVA counsel that the ultimate outcome should not have a material adverse effect on TVA's financial position or results of operations.

Decommissioning costs. Provision for decommissioning costs of nuclear generating units is based on the estimated cost to dismantle and decontaminate the facilities to meet NRC criteria for license termination. At September 30, 1997, the present value of the estimated future decommissioning cost of \$318 million was included in other liabilities. The decommissioning cost estimates from a 1995 study are based on prompt dismantlement and removal of the plant from service. The actual decommissioning costs may vary from the estimates because of changes in the assumed dates of decommissioning, changes in regulatory requirements, changes in technology and changes in costs of labor, materials and equipment.

TVA maintains an investment trust fund to provide funding for the decommissioning of nuclear power plants. In September 1993, TVA sold the investment portfolio and realized a gain of \$163 million. TVA recognized \$82 million of this gain in 1994 and \$81 million in 1995. During 1996, TVA took a number of related actions to establish a decommissioning fund that could reasonably be expected to provide substantially all of the funding required for decommissioning. TVA contributed an additional \$123 million, and separate decommissioning trusts were established for each of TVA's nuclear plants. As of September 30, 1996, the entire fund was invested in equity market index funds.

In May 1997, TVA sold the entire \$402 million equity index fund portfolio and transferred the proceeds to trust portfolios managed by independent money managers. During 1997, TVA recognized \$151 million of income related to the fund, which included an \$81 million gain on the

sale of fund investments and \$70 million in net appreciation and interest income. As of September 30, 1997, the decommissioning trust fund investments totaled \$553 million and were invested in securities designed to achieve a return in line with overall equity market performance.

Cost-based regulation. As a regulated entity, TVA is subject to the provisions of SFAS No. 71, *Accounting for the Effects of Certain Types of Regulation*. Accordingly, TVA records certain assets and liabilities that result from the effects of the ratemaking process that would not be recorded under generally accepted accounting principles for non-regulated entities. Currently, the electric utility industry is predominantly regulated on a basis designed to recover the cost of providing electric power to its customers. If cost-based regulation were to be discontinued in the industry for any reason, profits could be reduced and utilities might be required to reduce their asset balances to reflect a market basis less than cost. Discontinuance of cost-based regulation would also require affected utilities to write off their associated regulatory assets. Such regulatory assets for TVA total approximately \$1.9 billion at September 30, 1997, along with approximately \$6.3 billion of deferred nuclear plants. Management cannot predict the potential impact, if any, of these competitive forces on TVA's future financial position and results of operations. However, TVA continues to position itself to effectively meet these challenges by maintaining prices that are locally, regionally and nationally competitive.

11 NON-POWER PROGRAMS

TVA's non-power programs provide various public services, including managing navigable river channels, providing flood control and overseeing certain recreation facilities. The non-power programs encompass general stewardship of land, water and wildlife resources. TVA's non-power programs also conduct certain research and development activities in pollution prevention and remediation.

Funding for the non-power programs is primarily provided through federal appropriations. During 1997 and 1996, the non-power programs received appropriations of \$106 million and \$109 million, respectively. The 1998 appropriations bill approved \$70 million for non-power programs in 1998 and anticipates no further appropriation to TVA thereafter. Certain non-power-program activities are also funded by user fees and outside services revenues. Notwithstanding the historical separation of the power and non-power programs and provisions of the TVA Act and bond covenants to the contrary, public law authorizes TVA to use power

revenues to pay for non-power activities beginning in 1999.

During 1995, the non-power programs had a net expense of \$182 million, which included a \$69 million charge for the write-off of the Columbia Dam and Reservoir project. The Columbia Dam and Reservoir, a multi-purpose project financed by congressional appropriations, was suspended in prior years due to budget restrictions and environmental concerns. During 1995, TVA determined that the Columbia Dam would not be completed, and accordingly, the project cost was expensed.

The completed plant of the non-power programs consists of multi-purpose dams and other plant. At September 30, 1997, the net completed plant balances for multipurpose dams and other plant were \$700 million and \$113 million, respectively. At September 30, 1996, the net completed plant balances for multipurpose dams and other plant were \$705 million and \$108 million, respectively.

REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Directors of the Tennessee Valley Authority

We have audited the accompanying balance sheets (power program and all programs) of the Tennessee Valley Authority as of September 30, 1997 and 1996, and the related statements of income (power program), changes in proprietary capital (power program and non-power programs), net expense (non-power programs) and cash flows (power program and all programs) for each of the three years in the period ended September 30, 1997. These financial statements are the responsibility of the Tennessee Valley Authority's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards and Government Auditing Standards issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly,

in all material respects, the financial position of the power program and all programs of the Tennessee Valley Authority as of September 30, 1997 and 1996, the results of operations of the power program and nonpower programs and cash flows of the power program and all programs for each of the three years in the period ended September 30, 1997, in conformity with generally accepted accounting principles.

As discussed in note 8 to the financial statements, in 1995 the Tennessee Valley Authority adopted Statement of Financial Accounting Standard No. 112, *Employers Accounting for Postemployment Benefits*.

In accordance with Government Auditing Standards, we have also issued a report, dated October 23, 1997, on our consideration of the Tennessee Valley Authority's internal controls over financial reporting and our tests of compliance with certain provisions of laws, regulations, contracts and grants.

Coopers & Lybrand L.L.P.

Coopers & Lybrand L.L.P.
Knoxville, Tennessee
October 23, 1997

REPORT OF MANAGEMENT

Management is responsible for the preparation, integrity and objectivity of the financial statements of the Tennessee Valley Authority as well as all other information contained in the annual report. The financial statements have been prepared in conformity with generally accepted accounting principles applied on a consistent basis and, in some cases, reflect amounts based on the best estimates and judgments of management, giving due consideration to materiality. Financial information contained in the annual report is consistent with that in the financial statements.

The Tennessee Valley Authority maintains an adequate system of internal controls to provide reasonable assurance that transactions are executed in accordance with management's authorization, that financial statements are prepared in accordance with generally accepted accounting principles, and that the assets of the corporation are properly safeguarded. The system of internal controls is documented, evaluated, and tested on a continuing basis. No internal control system can provide absolute assurance that errors and irregularities will not occur due to the inherent limitations of the effectiveness of internal controls; however, management strives to maintain a balance, recognizing that the cost of such a system should not exceed

the benefits derived. No material internal control weaknesses have been reported to management.

Coopers & Lybrand L.L.P. was engaged to audit the financial statements of the Tennessee Valley Authority and issue reports thereon. Its audits were conducted in accordance with generally accepted auditing standards. Such standards require a review of internal controls and an examination of selected transactions and other procedures sufficient to provide reasonable assurance that the financial statements neither are misleading nor contain material errors. The Report of Independent Accountants does not limit the responsibility of management for information contained in the financial statements and elsewhere in the annual report.

David N. Smith

David N. Smith
Chief Financial Officer
and Executive Vice President of Financial Services

STATISTICAL AND FINANCIAL SUMMARIES

For the years ended September 30	1997	1996	1995	1994	1993
Sales (millions of kilowatt-hours)					
Municipalities and cooperatives	114,771	117,035	110,245	108,073	105,566
Industries directly served	17,359	16,599	16,684	15,792	16,196
Federal agencies	7,567	6,966	7,226	4,407	2,382
Total sales	139,697	140,600	134,155	128,272	124,144
Operating revenues (millions of dollars)					
Electric					
Municipalities and cooperatives	\$ 4,811	\$ 4,980	\$4,654	\$4,582	\$4,479
Industries directly served	464	452	460	452	472
Federal agencies	179	172	179	296	254
Other	98	89	82	71	71
Total revenues	\$5,552	\$5,693	\$5,375	\$5,401	\$5,276
Revenue per kilowatt-hour (cents) ^a	3.90	3.99	3.94	4.03	4.06
Winter net dependable generating capacity (megawatts)					
Hydro ^b	5,384	5,298	5,225	5,242	4,885
Fossil	15,014	15,012	15,032	15,032	15,088
Nuclear units in service	5,625	5,545	3,342	3,342	3,365
Combustion turbine	2,394	2,268	2,232	2,264	2,284
Total capacity	28,417	28,123	25,831	25,880	25,622
System peak load (megawatts)—summer	26,661	25,376	25,496	23,398	23,878
System peak load (megawatts)—winter	26,670	25,995	24,676	24,723	21,666
Percent gross generation by fuel source					
Fossil	61%	65%	71%	72%	77%
Hydro	11%	11%	12%	14%	13%
Nuclear	28%	24%	17%	14%	10%
Fuel cost per kilowatt-hour (cents)					
Fossil	1.23	1.23	1.26	1.34	1.27
Nuclear ^c	.58	.56	.61	1.10	1.09
Aggregate fuel cost per kwh net thermal generation	1.04	1.06	1.14	1.31	1.25
Fuel data					
Net thermal generation (millions of kilowatt-hours)	135,735	131,898	118,097	110,643	109,968
Billion Btu	1,381,837	1,338,157	1,197,295	1,120,868	1,105,395
Fuel expense (millions of dollars)	1,406	1,395	1,348	1,450	1,375
Cost per million Btu (cents)	101.73	104.22	112.61	129.40	124.42
Net heat rate, fossil only	10,180	10,145	10,138	10,131	10,052

a Excludes Department of Energy settlement payment of \$160 million for the years 1993-1994.

b Includes 405 megawatts of dependable capacity from the Corps of Engineers projects on the Cumberland River System.

c TVA changed its method of expensing the interest component of nuclear fuel expense in 1995.



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