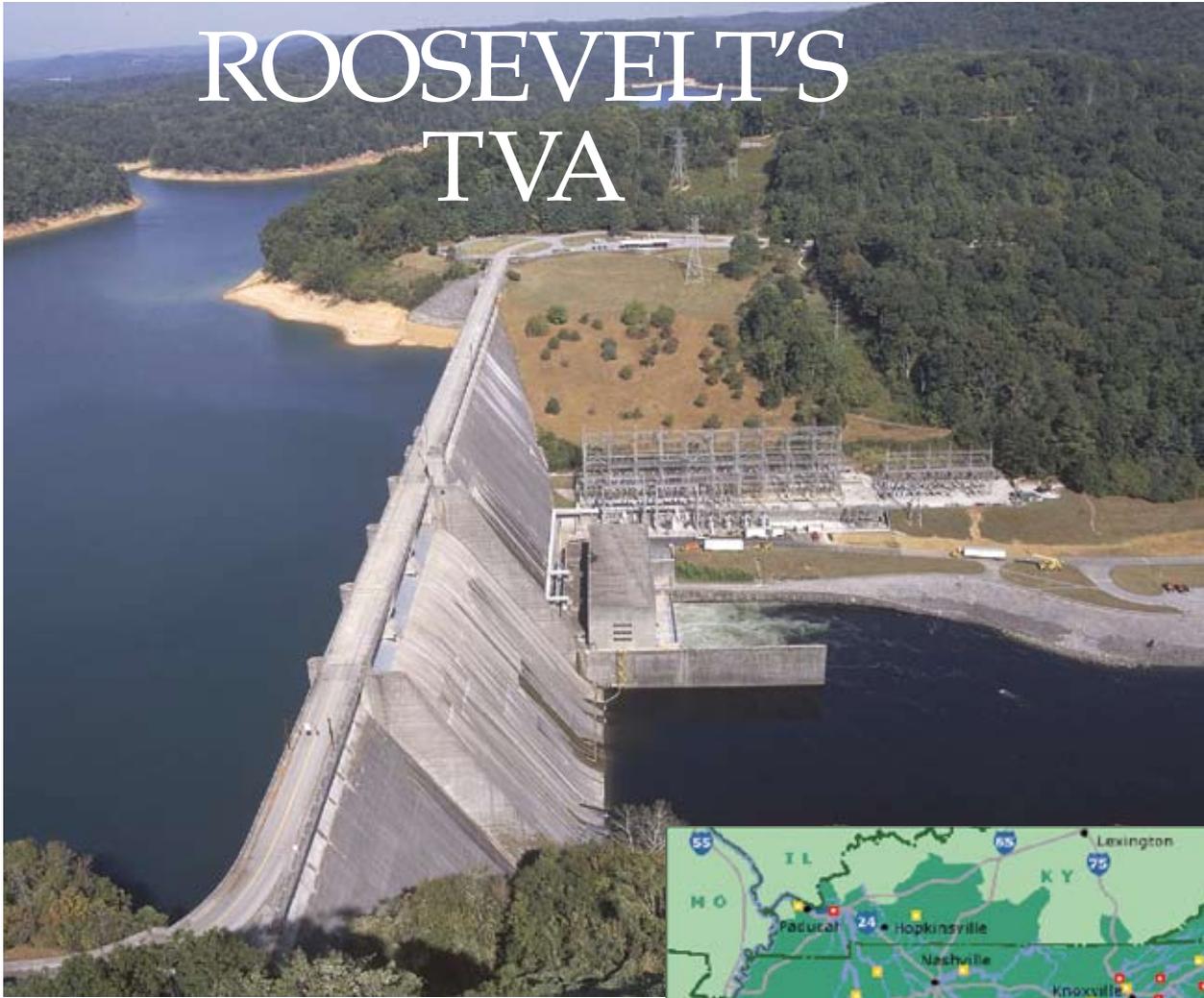


ROOSEVELT'S TVA



TVA

Norris Dam on the Clinch River in Tennessee was the first major TVA project.



The Development Program That Transformed A Region and Inspired the World

by Marsha Freeman

President Franklin Roosevelt's TVA brought the most backward region of the country into the modern age, setting an example for the rest of the country, and providing a record of rapid development that the rest of the world rushed to emulate. The TVA tamed rampaging rivers; replenished the depleted farmland; mechanized agriculture; built dams, power plants, libraries, and educational facilities; trained and employed legions of unskilled and skilled workers; and

helped win World War II. America, and the world, had seen nothing like it before.

Today, we still enjoy the benefits of the TVA, especially its plentiful and cheap electricity, but our nation's economy overall is a wreck, far worse than the Depression inherited by Roosevelt, and without even the productive industrial base that existed in the 1930s.

The remedy is at hand. The pathway out of the current threat to the very physical existence of the United States and its people is to put in to place the financial reorganization of the economy, through a new Glass-Steagall policy, to enable a great infrastructure project that will demand the rebuilding of the physical economy, transform the population both materially and culturally, and enable long-term science-driver projects for future generations.

The 1964 North American Water and Power Alliance project (NAWAPA), reformulated by economist Lyndon LaRouche and his colleagues in expanded form, can transform America, the global economy, and the Biosphere.¹ Apart from delivering water from Alaska and Canada to water-starved regions of the American West and Mexico, NAWAPA will create new waterways from the Great Lakes to the Pacific and Arctic Oceans, unleash a renaissance of nuclear power and high-speed and maglev rail development, and quickly create 4 million new skilled jobs and job-training opportunities in the United States. It would include major infrastructure development projects such as the Congo River/Lake Chad development project, the huge Eurasian Land-Bridge program, and a Bering Strait bridge/tunnel and Darien Gap development project that would eventually connect Eurasia to the tip of South America. By extending the reach of science and development to the Arctic regions, NAWAPA will link the Earth to its cosmic environment.

This article will look at the history of the Tennessee Valley Authority (TVA), created in 1933 by President Roosevelt not only to provide immediate economic relief, but, more important, to return the U.S. economy to an American System approach of permanent "internal improvements." The TVA aimed to lay the basis for economic development for "generations yet to come."

Although its activity was centered in the seven-state watershed of the Tennessee River, the TVA was never a "local" or even regional project. The lead personalities who created the TVA, protected it, and made it a success, came from Nebraska, New York, and the Midwest. The materials needed for the construction projects came from across the country.

The organizers of the TVA gave the agency and the region the responsibility of becoming a leader in science and technology, in agriculture, mapping and geographic analysis, forestry, manufacturing, and nuclear and fusion energy. From the time it began pouring concrete to build dams, the TVA was a model for world development; an inspiration to other nations whose people also lived in the "third world." The goal of the leaders of the TVA was to create such projects "in a thousand valleys."

The history of the TVA is also instructive as a microcosm of the tragic history of the second half of the 20th Century. While

the TVA operated under the vision and protection of President Franklin Roosevelt, it met its goals. But in most of the succeeding decades, the TVA came under attack, by the British Empire and its satraps directly, and by the parade of "left" and "right" free marketeers, budget balancers, financial interests, and environmentalists.

Building a Nation

In 1824, Secretary of War John C. Calhoun sent President James Monroe a report recommending the improvement of the Tennessee River at Muscle Shoals, as part of an ambitious plan for a system of integrated roads, canals, and rivers to connect the eastern part of the country to the opening west. Surveys of the Ohio and Mississippi Rivers were authorized, which found that the major obstacle to connecting the 600-mile Tennessee River to the Ohio and Mississippi Rivers was the 37-mile stretch of rapids and irregular rock formations at Muscle Shoals, Alabama.

A key obstacle to moving forward was removed by a 1824 Supreme Court opinion, written by Chief Justice John Marshall, establishing exclusive control over interstate navigation to the Federal government. In the decades that followed, three attempts were made to build canals at Muscle Shoals, to enable navigation from the east coast to the Mississippi, all of which failed.

In 1916, the National Defense Act authorized the Wilson Dam, two nitrate munitions plants, and two steam-powered electric plants to be constructed at Muscle Shoals, for World War I. Wilson Dam was begun two years later, but was not completed before the end of the war. Construction of the dam was halted in 1921, and was finally completed in 1925, burying the treacherous shoals under a new lake. The Wilson Dam completion then made it possible to plan to use the other infrastructure that had been laid at Muscle Shoals but never put to use.

But in 1928, President Calvin Coolidge used a pocket veto to stop a bill that would have done just that.

The development of the wasted Muscle Shoals region became a passion of George Norris, a Republican Senator from Nebraska, who had been born in Ohio in the early days of the Civil War. In 1921, Norris became chair of the Senate Committee on Agriculture and Forestry. When President Warren Harding, eager to privatize Federal projects, had stopped the construction of Wilson Dam, Henry Ford offered to buy the property for \$5 million.

The Passion of George Norris

In 1926, Norris countered the privatization drive, by introducing a bill for a comprehensive plan for Federal flood control and development of the Tennessee River and the Valley, greatly expanding the Muscle Shoals project. Then in 1931, President Herbert Hoover vetoed the bill, which had passed the Senate in a 2:1 vote the year before. Hoover described the operation of public utilities, in general, as "degeneration." This, while the Federal Trade Commission was investigating the "roaring twenties" private utilities, for their inflation of capital values through "watered stocks," the concentration of control through pyramiding holding companies, and other crimes.

By 1933, 138 legislative proposals had been initiated to develop the Tennessee Valley, none having succeeded.

Meanwhile, in 1929, then-New York Governor Franklin

1. Articles, maps, and interviews on NAWAPA can be found [here](#).



TVA

President-elect Roosevelt and Senator Norris visit Muscle Shoals in December 1932. In April 1933, the President sent a message to Congress creating the Tennessee Valley Authority.

Roosevelt proposed that the State build dams and power plants on the St. Lawrence Seaway to produce electricity. He was angered by the gross price-gouging by private power companies, which were charging New York State customers several times more than their Canadian neighbors. Senator Norris took notice of this proposal.

In December 1932, just weeks after winning the Presidential election, President-elect Roosevelt invited Senator Norris to accompany him to Muscle Shoals. Roosevelt could immediately see the potential of developing the Tennessee Valley, telling the press that this “great experiment” could provide 200,000 jobs. Muscle Shoals, Roosevelt said, would become “part of an even greater development that will take in all that magnificent Tennessee River from the mountains of Virginia to the Ohio,” for the benefit of “generations to come,” and “millions yet unborn.”

On April 10, 1933, Roosevelt transmitted a Message to the Seventy-Third Congress: “A request for Legislation to Create a Tennessee Valley Authority—A Corporation Clothed with the Power of Government but Possessed of the Flexibility and Initiative of a Private Enterprise.” The Tennessee Valley project, if envisioned in its entirety, the President explained,

transcends mere power development; it enters the wide fields of flood control, soil erosion, afforestation, elimination from agricultural use of marginal lands, and distribution and diversification of industry. In short, this power development of war days leads logically to national planning for a complete river watershed involving many States and the future lives and welfare of millions.

A great experiment for the benefit of generations to come and millions of yet unborn.

—Franklin Roosevelt, December 1932

FDR proposed that the TVA “should be charged with the broadest duty of planning . . . for the general social and economic welfare of the Nation.”

The Act creating the TVA gave the new agency sweeping powers and charged it with responsibilities for national defense, agricultural and industrial development, flood control, and navigation, also for the Mississippi River Basin. The TVA Board was authorized to contract with commercial producers for the production of fertilizers, to arrange with farmers for large-scale practical use of new fertilizer; to produce, distribute, and sell electric power. The board was authorized to issue bonds for \$50 million, “fully and unconditionally guaranteed both as to interest and principal by the United States, [for] the economic and social well-being of the people” living in the Tennessee Valley.

The Father of Public Power

One of the most important actions taken by FDR, was the appointment of David E. Lilienthal to the three-man Board of Directors of the TVA. Born in Morton, Illinois, in 1899, Lilienthal went into law. In his twenties, he began his career litigating against the private utility monopolies, and he was 34 when he became one of the three Members of the Board of the TVA. Lilienthal served as chairman of the Board from 1941 to 1946, overseeing the mobilization of the TVA during World War II, which included the construction of 12 dams in five years. It was, at that time, the largest engineering and construction project in U.S. history, exceeding the Panama Canal.

David Lilienthal’s vision for the TVA was as an agency for social change. More than just providing flood control, electric power, shipping, and recreation, the TVA would bring the residents of the Valley in to the modern, scientific era. With a mandate from the President to promote the general welfare, Lilienthal met each challenge in the Valley with a solution.

In January 1933, just months before he would join TVA, Lilienthal gave an informal speech about it in the South.

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More today than a mere opportunity for the Federal Government to do a kind turn for the people in one small section of a couple of States . . . it is an opportunity to accomplish a great purpose for the people of many States, and, indeed, for the whole Union.

The planning for regional development, he said, is an opportunity “not just for ourselves but for the generations to come.”

In 1944, in his book, *TVA: Democracy on the March*, Lilien-

that sums up his belief, developed after a decade at the TVA, that:

There is almost nothing, however fantastic, that *given competent organization* a team of engineers, scientists, and administrators cannot do today. Impossible things can be done, are being done, in this mid-twentieth century....

No longer do men look upon poverty as inevitable, or think that drudgery, disease, filth, famine, floods, and physical exhaustion are visitations of the devil or punishment by a deity. . . . [T]he quantity of electrical energy in the hands of the people is a modern measure of the people's command over their resources, and the best single measure of their productiveness, their opportunities for industrialization, their potentialities for the future. A kilowatt hour of electricity is a modern slave, working tirelessly for men....

When David Lilienthal came to the Tennessee Valley in 1933, only three out of every one-hundred households had electricity. The average farmer's income was \$639, while the national average was \$1,835, nearly three times as much. Per capita income was \$168. More than 300,000 acres of farmland had been destroyed, and 4.5 million acres were on the decline, because farmers were growing soil-depleting cash crops—particularly cotton and tobacco. Erosion was spreading, driven by deforestation, planting on hillsides, and the stripping of nutrients from the soil. More than a million acres of topsoil had disappeared. Fires had destroyed three quarters of a million acres of forests.

Malaria was endemic in more than half of the Valley area, with infection rates of up to 60 percent in some regions, affecting up to 30 per-



TVA

David E. Lilienthal, TVA chairman: "There is almost nothing that given competent organization, a team of engineers, scientists, and administrators cannot do today."

"A kilowatt hour of electricity is a modern slave, working tirelessly for men."



TVA

In 1933, the average farmer's income in the Tennessee Valley was \$639 per year, about a third of the national average.

cent of the total population. There were 7.6 deaths per 100,000 population from typhoid and 79.4 deaths per 100,000 population from tuberculosis. Smallpox was still a threat. The average expenditure per child for education was about \$23.

This would quickly change. On the day the TVA Act was signed into law by President Roosevelt, less than one hundred days after he assumed office, people danced in the streets of Muscle Shoals, and celebrated with fireworks. In the depths of the Depression, in one of the most depressed regions of the country, people now looked toward their future with the belief that better economic times lay ahead.

Electrification for All

The first challenge facing the TVA was to gain control over the Tennessee River and its major tributaries. A series of dams would be constructed, but these would not just be flood control dams, or irrigation dams, or hydroelectric power dams, or navigation locks and dams—they would be *all* of the above. Many engineers insisted that such multi-purpose dams could not be built. TVA hired those who believed they could.

On October 1, 1933, the first day of the new fiscal year, and less than five months after the President signed the legislation creating the TVA, shovels were in the ground, with the start of construction of Norris Dam on the Clinch River. In its first 20 years, the TVA built 20



TVA

Erosion was widespread throughout the TVA area. More than a million acres of topsoil had disappeared.

dams. This required 113 million cubic yards of concrete, rock, and earth, or 12 times the bulk of the seven great pyramids of Egypt. The TVA employed nearly 200,000 people over the course of its first 20 years, and apprentice programs created skilled craftsman out of sharecroppers, and mechanics out of tenant farmers.

TVA's dams can store 22 million acre-feet of water, enough to cover the state of Illinois to an eight-inch depth. The completion of the dams created a navigable water transportation artery stretching from Western Virginia to the Ohio River, and connecting the Eastern United States to the Mississippi and the Gulf of Mexico. The placement of dams on the larger tributaries of the Tennessee River greatly reduced flooding, and also helped regulate water flow in both the Ohio and Mississippi Rivers.

But unquestionably, the contribution that the dams made to the Tennessee Valley that was felt most by the largest number of people was the provision, for the first time, of electricity. In 1933, only 3 percent of the farms in the Valley had electric power. A year later, the TVA had 18 megawatts of electric generating capacity. By 1942, there was a near order-of-magnitude increase in generating capacity on line—1.37 gigawatts. In 1934, the TVA had 6,507 retail customers. In 1942, there were nearly half a million. There were zero miles of transmission lines being built in 1934. From 1938 to 1942, approximately 5,000 miles were built each year.

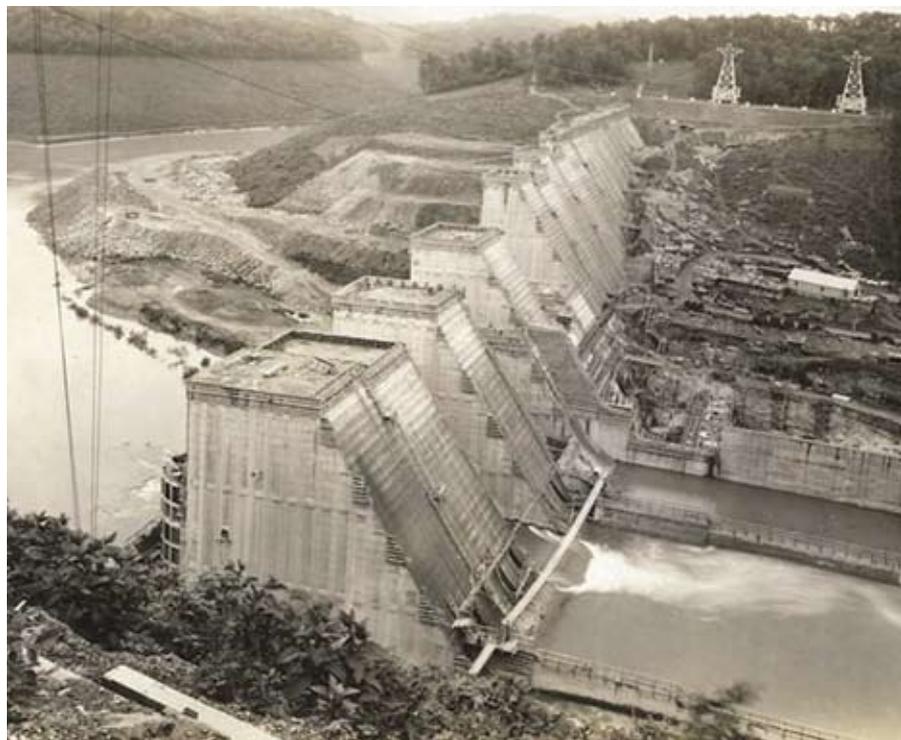


TVA

One of the goals of the TVA was flood control.

An overriding mandate of the TVA was to provide reliable electric power to the entire population, at the lowest possible rate. In order to do both, the approach of the TVA was to encourage the maximal use of electricity. Over most of its history, TVA electric rates have been about half the national average, while annual use per capita is about twice the national average.

About half the farms in the Valley had electricity by the start of World War II, but most farmers did not know what to do with it. The TVA sent out convoys of trucks, with the help of students from area colleges, and set up tents in rural areas to demon-



TVA

Shovels were in the ground to start construction of Norris Dam less than five months after FDR signed the legislation creating the TVA.



TVA

The Civilian Conservation Corps camp #19 near New Tazewell, Tennessee, in 1933, with the foundation for the winter barracks in the foreground. The CCC worked on reforestation in the Clinch River watershed, above Norris Dam.

strate the use of electrical appliances. Lilienthal persuaded President Roosevelt to form the Electric Home and Farm Authority, which provided low-interest loans to stimulate the sales of electric appliances. The TVA induced dealers to arrange store displays of appliances, and TVA economists visited homes to discuss their use. In 1938, sales of home appliances were \$1.61 million. By 1941, sales were \$18.5 million.

But the dams, electricity transmission systems, the new roads, rail tracks, and new towns could not be built with a population suffering from disease. Malaria was attacked by reducing the mosquito population, because there was (and still is) no effective vaccine. By 1934, working with county health departments, the TVA provided typhoid shots at dam work sites, and made the shots mandatory for all TVA employees. After an epidemic of smallpox, one of the biggest killers in the South, broke



TVA

The Electric Home and Farm Authority gave low-interest loans to people in the valley, to help them purchase electric appliances like stoves.



TVA

By the late 1930s, the TVA was circulating about 13,000 books a month.



TVA

A 1934 parade in Tupelo, Mississippi, to celebrate the city's contract with the TVA for electric power—TVA's first such contract.



TVA

Stringing power lines in the Tennessee Valley. Starting in 1933, the TVA began to bring electricity to all, building 5,000 miles of transmission lines each year from 1938 to 1942.



TVA

The TVA sprayed against mosquitoes to stop the spread of malaria and inoculated half a million people against smallpox.



TVA

TVA agricultural programs brought Tennessee Valley farmers into the 20th Century. Particularly important was the introduction of fertilizer, which was showcased on demonstration farms and in teaching films. This photo is of a test field, showing its use in producing ground cover.



TVA

The first CCC group assigned to TVA to concentrate on erosion control and tree planting. By 1944, the TVA had planted more than 150 million trees in the Valley.

out in Alabama in 1938, the TVA offered free smallpox shots. By 1951, TVA had inoculated half a million people in the region, helping to produce a regional revolution in public health.

In 1933, the Valley had many totally isolated counties with populations in the thousands, with no railroad service, no newspapers, no radio, and no public library. As the TVA sent armies of workers in to remote areas to build the dams and power systems, it decided to provide access to books, for the “welfare and well being” of the workers, and their families. TVA set up rural libraries, located in stores, post offices, and gas stations. Bookmobiles travelled the countryside. By the late 1930s, TVA was circulating about 13,000 books a month. When the construction of TVA’s dams was almost complete, David Lilienthal lobbied—and secured—state support for the continuation of the libraries.

Reclaiming the Land

In 1933, the primary economic activity of the Valley region was farming. Immediate measures had to be taken to restore the productivity of the ravaged land.

Teams of chemists and chemical engineers were assembled to begin operation of a phosphate-based fertilizer production program, to take farming out of the 19th Century. Two hundred TVA experts fanned out across the Valley, to meet with farmers, introducing them to scientifically based modern farming methods. Thousands of demonstration farms were set up, with TVA donating its new phosphate-based fertilizer, and the demonstration farmer opening his farm to share his results with his neighbors. In 1935, TVA produced 24,000 tons of concentrated superphosphate, which grew to

136,000 tons by 1953. TVA fertilizer, which was shipped all over the country, accounted for 24 percent of national fertilizer production between 1934 and 1955. By 1941, 47 states had tested the TVA fertilizer, and 27 were conducting test demonstration programs.

The TVA program had a dramatic impact worldwide. It is estimated that 2-3 billion people, or nearly half the world’s population, are alive today because of the development of synthetic fertilizer, more than 70 percent of which was developed at TVA’s National Fertilizer Development Center, in Muscle Shoals, Alabama. An investment of \$41 billion through 1981 returned \$57 billion to U.S. agriculture. Fertilizers are responsible for more than a third of U.S. crop production, according



TVA

The Copper Basin in southern Tennessee was a desolate desert after 90 years of copper mining killed off vegetation and eroded the land. Today, more than 90 percent of the area has been reforested.

to the International Center for Soil Fertility and Agricultural Development at Muscle Shoals. Dr. Norman Borlaug, father of the “Green Revolution,” which saved millions in the Third World from starvation, was on the board of directors of TVA’s International Fertilizer Development Center from 1994 to 2003.

The only bona fide desert east of the Mississippi in the 1930s was the Copper Basin in southern Tennessee, which is more than 50 square miles of desolation. It has been compared to the Dakota Badlands, the Gobi Desert, and the Moon.

Ninety years of processing the mined copper that had been discovered there in the 1840s, had killed flora and fauna, and parts of the Ocoee River. Nearly 35,000 acres were completely bare, losing nearly 200 tons of soil a year, and silting the river where TVA had three dams and reservoirs. By 1944, the TVA had planted more than 150 million trees in the Valley. Today more than 90 percent of the Copper Basin has been reforested.

By 1941, the TVA was well on the way to transforming the economy, and lives of the people of the Tennessee Valley. But its greatest challenge was to come.

Winning the War

It is reported that not even TVA Chairman Lilienthal knew what was going on in the buildings at the “Clinton Engineering Works,” not too far from TVA’s Knoxville headquarters, in 1943. Seemingly overnight, new facilities, housing, and a whole new town had sprung up in Oak Ridge, Tennessee.

When the decision was made by President Roosevelt to embark upon the Manhattan Project to develop an American nuclear weapon, there were two prerequisites for success: the best scientific minds the nation could mobilize, and a virtually unlimited source of reliable electrical power. The President turned to the TVA, giving what became the Oak Ridge National Laboratory the task of producing the nuclear materials for the bomb, enriching uranium, and then separating the plutonium. Enrico Fermi who had built the nation’s first “graphite pile” reactor in Chicago, then built the Graphite Reactor at Oak Ridge, which produced the world’s first sustained nuclear reaction. After the war, this reactor produced the world’s first medical isotopes.

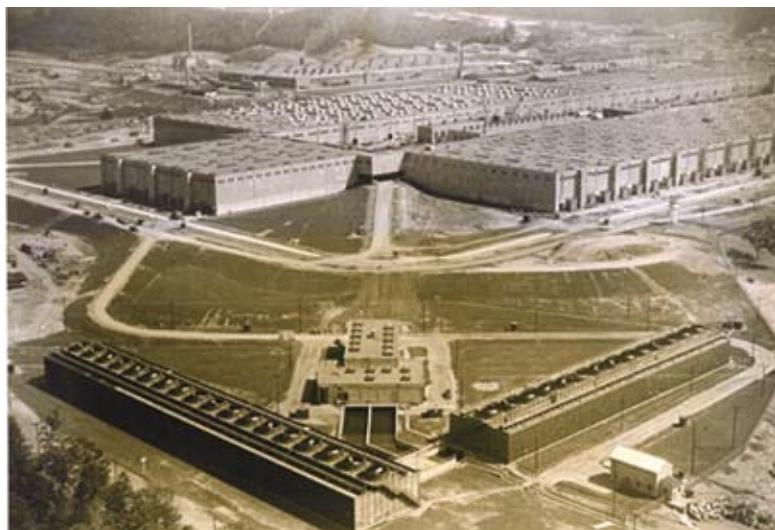
Even before the United States was fighting in the war, in preparation, President Roosevelt asked Congress to approve funding for Douglas Dam in east Tennessee in 1941. Opposition on the part of the Congress ended with the bombing of Pearl

An estimated 2-3 billion people are alive today because of the development of synthetic fertilizer, more than 70 percent of which was developed at the TVA.

Harbor. Douglas Dam was completed in a record-breaking 12 months and 17 days. During the war mobilization, the TVA built 10 dams, working 24-hours-a-day, utilizing three shifts, and floodlights at night.

Since 1935, the Aluminum Company of America (Alcoa) had been buying TVA power for its factory near Knoxville, which was then the largest aluminum plant in the world. In 1941, as World War II loomed, Alcoa gave the government its Fontana property, a prime site for a dam, and the bill authorizing construction of the dam was signed just 10 days before Pearl Harbor. The Fontana site was located in the remote Smoky Mountains of North Carolina, and in order to build the dam, a railroad was built to transport supplies. Almost overnight, the TVA erected dormitories, houses, trailers, and tents for the workers and their families. A hospital, bank, library, post office, and schools were built from scratch.

In addition to aluminum for planes during the war mobilization, the Valley processed metals, food, fibers (for uniforms), timber, and chemicals, and manufactured ship boilers, gas masks, and explosives. The fertilizer plants in Muscle Shoals



U.S. Army

Aerial view of the massive K-25 plant on the Oak Ridge reservation, which used the gaseous diffusion method to separate uranium-235 from uranium-238 for the war effort. Begun in June 1943 and completed in early 1945, the K-25 plant employed 12,000 workers.



TVA

The TVA was crucial in the war effort, supplying the enormous amount of electricity required by the K-25 plant, along with materials and manufactures, and preparing survey maps. Without the TVA, the United States in 1941 would not have been prepared to fight, the Federal Power Commission stated.



ORNL

General Leslie Groves (left) and David Lilienthal discuss the transfer of responsibility for atomic energy research and development and weapons production from the Army to the civilian Atomic Energy Commission, which Lilienthal was appointed to head.

supplied the raw materials for thousands of tons of munitions, in addition to the fertilizer to help grow food.

In 1943, the U.S. Army asked the TVA for help in preparing survey maps of enemy-held territory. The first assignment was to map 30,000 square miles of Nazi-occupied France, based on its experience in mapping the Valley. The Armed Forces acquired 470 TVA mapping experts and technicians. The TVA, together with the U.S. Geological Survey, developed advanced mapping techniques and made maps from aerial photographs of a half-million square miles of foreign territory during World War II. An estimated 70 million of TVA-produced maps were used to prepare for the Normandy invasion in June 1944.

After the war, the Federal Power Commission declared that without the TVA, the United States in 1941 would not have been prepared to fight.

But some did not appreciate the TVA's success. One year after FDR created the TVA, the Authority had five law suits pending against it. By 1938, TVA, like other of FDR's New Deal programs, had been attacked on constitutional grounds, in 41 legal cases. Direct legal expenses to the TVA were \$518,159. Revenues lost from the delay of hydroelectric projects because of such legal battles amounted to nearly \$5.5 million. The challenges would eventually go all the way to the Supreme Court.

For 20 years, the TVA had successfully beaten back attacks by the private utilities to stop its dam and power programs, and by "free market"-advocating Congressmen. Under the protection of President Roosevelt, the TVA had accomplished what only a handful of vi-

sionaries had believed was possible. After the war, and with President Roosevelt gone, TVA would face its most serious threat yet.

'Creeping Socialism'

In 1952, for the first time in the TVA's existence, there was a Republican President headed for the White House. President Eisenhower described the TVA as "creeping socialism," and instructed his new TVA Board chairman to "disband the agency," as the Congress tried to dismantle what was left of FDR's New Deal. The stupidity of accusing TVA "socialism" of squelching private enterprise in the region, was demonstrated by the fact that more than a half-million jobs in business and industry were created in the region between 1933 and 1950.

It fell to TVA chairman Gordon Clapp to defend the very existence of the TVA. Clapp was hired by the TVA in its first months, when he was just 27. A Wisconsin native, he became Director of Personnel, then in 1939, he became General Manager, becoming Chairman in 1946 after David Lilienthal was tapped to head the new Atomic Energy Commission. Clapp's philosophical approach, which cohered entirely with Roosevelt's and Lilienthal's, was to develop the resources of the Valley to raise the living standard of the population, not simply to "build dams." The Republicans tried to make the case that TVA's work was finished because the dams had been completed.

TVA Chairman Clapp pointed out the hypocrisy of the Administration's support for a "TVA on the Jordan," as an important peace initiative in the Middle East, and the simultaneous attack on the TVA, at home. To counter the erroneous assertion that Federal funds to TVA constituted unfair "Federal aid" to one particular region, Clapp pointed out that more than half of the \$1.4 billion that the TVA spent to buy equipment and materials, was spent *outside the Tennessee Valley*. Ten years earlier, David Lilienthal had explained that the tens of thousands of electric ranges, water pumps, and refrigerators purchased by people in the Valley, were not manufactured there, but in places like the General Electric factories, in Schenectady, New York.

Throughout the Eisenhower years, the debate raged over cutting domestic spending, and the TVA's budget dropped drastically. Finally, in 1959, although Congress was unable to kill the Authority, a law was passed amending the TVA Act, which authorized the TVA to sell bonds on the private market to finance its operations, and removed funding for its power investments from Federal appropriations. It further required the TVA to pay back in annual installments to the Treasury, funds previously invested by Congress, along with an annual rate of return on the outstanding investment that had been made over the previous 20 years! Since 1959, TVA's massive



TVA

Gordon Clapp succeeded Lilienthal as TVA chairman in 1946, having worked at the TVA from its first months.



TVA

President Kennedy spoke at Muscle Shoals on May 18, 1963, the TVA's 30th anniversary. "Let us all resolve that we, too, in our time, 30 years later, will, ourselves, build a better Nation for 'generations yet unborn.'"

electric power development program has been self-financed.

After the war, demand for residential electricity alone rose by 60 percent from 1945 to 1947. Gordon Clapp proposed that a coal-powered steam plant be built to help meet the fast-growing electric needs of the Valley. Congress opposed it, insisting that coal-fired plants would compete with private utilities. After many trips to Washington, to argue his case, Clapp got approval for the coal plant. "If TVA ever ceases to be controversial, it will cease to exist," he stated. Later, this defense of TVA's broadest purpose, set the precedent for leading the TVA to the forefront of the age of nuclear power.

TVA's Work Will Never be Done

On May 18, 1963, President John F. Kennedy travelled to Muscle Shoals, Alabama, for the 30th anniversary celebration of the TVA. Among the dignitaries recognized from the podium was Governor George Wallace. (This must have been somewhat awkward, not only because of President Kennedy's stand on civil rights, but also because the TVA was racially integrated and union organized, from its earliest days.)

"There were many who still regarded the undertaking with doubt, some with scorn, some with outright hostility," President Kennedy said of the TVA:

Some said it couldn't be done. Some said it shouldn't be done. Some said it wouldn't be done. But today, 30 years later, it has been done.

Despite a record of success, TVA still has its skeptics and its critics. There are still those who call it "creeping socialism." There are still those, and some of them from

Massachusetts, who say that this asset serves only the valley. . . .

By working together, we have recognized that a rising tide lifts all the boats, and this valley will not be prosperous unless other sections of the country are rich, nor will other sections of the country be rich unless the valley is prosperous. That is the lesson of the last 30 years.

Finally, there are those who say that TVA has finished its job and outlived its challenges. But all of the essential roles of TVA remain.

The President then cited the region's importance for atomic energy, commerce, and opening new frontiers:

In short, the work of TVA will never be done until the work of our country is done.

Franklin Roosevelt came from Hyde Park, New York, more than 1,100 miles from this community. George Norris was not a representative of this State. He came from McCook, Nebraska, also more than 1,100 miles from this community.

The President continued: "George Norris's favorite phrase was his reference, and his dedication to 'generations yet unborn.' So let us all . . . resolve that we, too, in our time, 30 years later, will, ourselves, build a better Nation for 'generations yet unborn.'"

Harnessing the Atom

The promise of the quantum jump in energy flux density possible through nuclear technology was nowhere more aggres-

sively pursued than in the Tennessee Valley, and not just for the United States.

In 1963, as the TVA was developing its plan for going nuclear, Oak Ridge National Laboratory scientist Philip Hammond suggested that fresh water, so desperately needed globally, could be produced economically by using the excess heat from nuclear power plants for desalination. Laboratory director Alvin Weinberg, a member of President Kennedy's Science Advisory Board, promoted the idea, as a way to make the "deserts bloom."

The next year, the term "nuplex" was coined, for nuclear-centered agro-industrial complexes, to describe the multi-purpose potential of nuclear energy. In 1964, Oak Ridge Laboratory staff members travelled to India, Israel, Puerto Rico, Pakistan, Mexico, and the Soviet Union, to help plan desalination projects. In 1965, 100 researchers at the Lab were studying how to apply new technologies to nuclear desalination.

Because of its location within the TVA service area, the nuplex research carried out during the 1960s at the Lab by nuclear scientists, chemists, materials specialists, agricultural experts, and engineers could be put to the practical test. In 1971, for example, it was decided that the TVA's Browns Ferry nuclear reactor, then under construction, would include a demonstration greenhouse, which would use the waste heat from the nuclear plant to grow food.

In 1966, the TVA announced plans to build 17 nuclear plants at seven sites in Tennessee, Alabama, and Mississippi. This was slated to be the largest nuclear construction project in the world. Construction began the next year on the world's largest nuclear power plant, at Browns Ferry, just west of Huntsville, Alabama. Seven years later, the first generating unit went into operation.

At the same time, the 1973 war in the Middle East, organized and provoked by British and British-controlled financial and petroleum interests, created an "energy crisis" in the United States, which saw the price for oil, gasoline, and coal quadruple, virtually overnight. The skyrocketing cost of energy and the overall economic contraction led to a drop in energy consumption. This was followed by the second "oil" crisis in 1979 and further economic decline. As energy consumption fell, doubt was raised that more generating capacity, meaning nuclear, would be needed, even by the TVA.

In the midst of these concocted "energy crises," the election of Jimmy Carter as President in 1976 brought a new line of attack upon the TVA, this time, from the so-called "left."

Attack of the Eco-Fascists

In 1977, Jimmy Carter appointed S. David Freeman (no relation to this author), as chairman of the TVA. At the end of his tenure at the TVA, in 1984, Freeman would brag that he oversaw the cancellation of 8 of the TVA's planned 17 nuclear power plants.

In 1978, Freeman told the *Christian Science Monitor* that "conservation" would be one of TVA's major goals. Freeman had been the director of the \$3 million Ford Foundation Energy Policy Project, between 1971-1974, which promoted the insane idea that energy efficiency and cutting back on consumption, could be a major "source" of power. (later described as



Video image from Institute of International Studies, University of California at Berkeley

S. David Freeman, appointed by President Carter to head the TVA in 1977, made "conservation" a TVA goal. He also opposed the Clinch River Breeder Reactor and the completion of the Tellico Dam.

"negawatts"). Former TVA chairman Aubrey Wagner described Freeman's approach as making electricity use "a sin."

Freeman was the principal architect and promoter of Carter's anti-human energy and environment policies. He was sent to the TVA explicitly to oppose construction of the Clinch River Breeder Reactor and the completion of the Tellico Dam. Clinch River was not needed, and was a bad investment Freeman counseled. There were nonproliferation concerns, and the demand for electricity was lower than projected, he said, so more nuclear plants were not needed. Further, Freeman advised that the breeder must be able to "compete" with solar energy.

In June 1978, Freeman's second assignment was fulfilled, when the Supreme Court stopped the Tellico Dam project, on the Little Tennessee River. This, under a provision of the 1973 Endangered Species act, which protected the tiny snail darter fish, whose habitat was threatened by the dam. The Tellico Dam, which had been first planned in 1939, was then halted when 95 percent complete, after the TVA had spent \$109.4 million to build it. It was finally completed in 1979, when the U. S. Senate voted to exempt Tellico Dam from the Endangered Species Act.

Playing on the media-induced irrational fears of nuclear energy after the March 28, 1979 accident at the Three Mile Island nuclear plant in Pennsylvania, Freeman gave a speech in October that year, stating that millions of Americans are concerned about safety. While professing to be "pro-nuclear," Freeman announced his policy to limit construction of future TVA nuclear plants to the seven sites where TVA was



TVA

Construction is now under way to bring the uncompleted Watts Bar 2 nuclear plant into operation.

already building reactors. "I really don't know for sure whether nuclear power is safe," he said.

Then, to "save" energy, Freeman's TVA started delivering wood burning stoves to poorer families in the Valley in 1978, along with a smoke alarm and a fire extinguisher! The TVA gave 20-year low interest loans to buy and install solar water heaters, and loans for attic insulation.

Rather than fight the Malthusians who were making policies in the Environmental Protection Agency, that, if enforced, would have shut down all of American industry, Freeman negotiated a "deal" with the EPA, which eventually cost the TVA more than \$6 billion for pollution controls at its coal-burning plants, none of which would have been necessary, had the nuclear program continued, and the coal plants, retired.

When he was not reappointed to the TVA Board by President Reagan in 1984, Freeman continued his destructive career, which included overseeing the development of the Power Exchange (spot market) and Independent System Operator for the State of California, in the early 1990s. "I thought deregulation might work," Freeman said in 2001, as rolling blackouts hit the State.

In January 2009, as the TVA was restarting work to complete the nuclear plants that S. David Freeman had stalled, Freeman apparently finally "got it." He said:

I tried real hard to make TVA more environmentally sensitive. But ... I felt like I was a heart transplant that got rejected. ... The organization itself never got over its low-cost power mission as the overriding mission.

Thank goodness for us all!

Nuclear: A Slow Climb Back

As part of the economic fallout from Three Mile Island, all five of TVA's operating nuclear reactors were shut down in 1985 for a few years, to upgrade safety. As Ronald Reagan's 1980s wore on, and the economy did not improve, work was stopped on TVA's Bellefonte 1 and 2 units (88 percent and 57 percent completed), and Watts Bar unit 2 (60 percent completed) in 1988. But staff were kept on site, while the units were deferred indefinitely. The billions of dollars that had been spent for nuclear construction was now debt being carried and serviced by the TVA, as a dead weight.

With the ascension of the Newt Gingrich neo-conservatives, as the Republican Party gained the Congressional majority in the 1994 election, deregulation of the electric utility industry became the latest attack, not only on public power, but on virtually any kind of power. The industry would be turned over to the likes of Enron. In 1995, House Speaker Newt Gingrich set up a House privatization task force, but lost a proposal to privatize the TVA by a vote of 284-144. "There are those who would privatize the Grand Canyon if they got a chance," remarked TVA chairman Craven Crowell.

Threats were made, and pressure was put on the TVA to be ready to "compete" with deregulated private companies. Thousands of TVA employees and contractors were laid off, many of whom the TVA had tried to retain in the nuclear/construction field, as the agency sought to reduce its debt, which was coming perilously close to its Congressionally mandated \$30 billion limit.

In 1996, Crowell said the TVA was seeking competitive proposals on options to buy power, "as an alternative to building plans or completing unfinished nuclear units." (In 1994, a similar request for proposals resulted in purchase agreement con-



TVA

Browns Ferry nuclear plant unit 1 was brought into service from its dormant state in 2007.

tracts with Enron, which the TVA ended up suing in 1999 for non-delivery of power.)

But this madness came to a screeching halt in early 2000. TVA chairman Crowell observed: "It's interesting to note that TVA was tempted to follow California's example—rely on the marketplace for electricity rather than investing capital in new generating capacity." Good thing the Tennessee Valley isn't Silicon Valley, was one comment.

With demand rising, and the collapse of the "free market" in electrons after the implosion of Enron, the TVA had only one viable option for meeting the coming increased demand for base-load power: to restart the nuclear build program. That is exactly what the TVA did. In 2002, the Board voted to spend \$1.7 billion to return the dormant Browns Ferry unit 1 to service within five years. And five years later, in May 2007, Browns Ferry unit 1 went in to service. It was the first "new" U.S. nuclear reactor in the 21st Century.

In July 2006, the TVA Board authorized an evaluation of the cost and schedule to finish the nearly completed Watts Bar 2 nuclear plant, and approved \$20 million for the study. The next Summer, the Board approved the completion of Watts Bar 2, at a cost of \$2.49 billion over 54 months. More than 2,300 construction workers were hired by the end of 2009.

Two years ago, the TVA allocated \$10 million for a study to see if one or both of the mothballed twin reactors at the Bellefonte site should be completed. In August 2010, the Board unanimously approved spending \$248 million in the next fiscal year, to develop the plan to finish Unit 1, which would cost up to \$4.7 billion. It had been more than 80 percent complete when construction was stopped in the 1980s.

In 2005, the TVA, came under the provisions of the Sarbanes-Oxley law, which had been enacted in 2002 in response to the Enron debacle. TVA chairman Crowell characterized it as "the

first steps toward privatization of TVA." It mandated regulation by the Securities and Exchange Commission, forcing a write-off of billions of dollars of nuclear plant assets, and "allowed" TVA to borrow money from banks and financial institutions.

Today, the TVA is building the only nuclear plant in the United States.

A Model for World Development

It had always been the intention of President Franklin Roosevelt and David Lilienthal for the TVA to be a model for other nations, where people were suffering from the conditions of poverty that had been endemic to the Tennessee Valley before the TVA. As would later be the case for the successful effort of the United

States to land a man on the Moon, the economic and cultural transformation of a "Third World" region of America, was held in great admiration, and was America's most effective presentation of itself to the rest of the world. (In fact, stages of the huge Saturn V rockets that would take men to the Moon were assembled at NASA's Marshall Space Flight Center in Huntsville, Alabama, and shipped to Florida through the locks at TVA dams).

By 1944, David Lilienthal wrote, the "more than eleven million people who have visited the TVA in recent years," have included an agricultural commissioner from New Delhi, a group of Swedish journalists, a Brazilian scientist, a Czech electrical expert, Israeli Prime Minister David Ben-Gurion, Indian Prime Minister Nehru, and President Gabriel Gonzales Videla of Chile.

The TVA also functioned as a "training ground for foreign technicians," he reported, including

two score engineers and agriculturalists from a dozen republics of South America; a similar contingent from China. . . . There has been a group of Russian engineers working with TVA technicians on Lend Lease hydro-electric plants that in 1944 will be producing power on streams "somewhere beyond the Urals."

David Lilienthal reported in his 1944 book, that Supreme Court Associate Justice William O. Douglas spent summers travelling on horseback in remote areas of Asia, and Douglas related that

A Druze chieftain, south of Damascus inquired about it [the TVA]. I was asked about it many times as I traveled the length of the Tigris and Euphrates. . . . Below Baghdad I saw 50,000 people homeless by reason of a flood. They



TVA

TVA chairman David Lilienthal with a visiting Chinese engineer, discussing the TVA and potential projects for the Yangtze River. Inset is Lilienthal's 1944 book, *Democracy on the March*.

too had heard of the TVA, and wanted one for themselves.

In the 1953 revised edition of his 1944 book, *TVA—Democracy on the March*, which had been translated into 14 languages (with more than 50,000 copies in circulation in Chinese alone), David Lilienthal summarized some of the potential regional economic plans under discussion for TVAs around the world. No major region would have been left untouched by TVA-inspired development. Projects were outlined for the Valley of the Nile River, embracing more than a million square miles, with reaches in to Sudan, Egypt, Ethiopia, Kenya, and Uganda. Parts of the then-Belgian Congo and Tanganyika were also included. TVA-modelled projects were conceived for Niger and Uganda (the African TVA).

The historic Tigris and Euphrates Rivers enter Iraq from Turkey and Syria to the northwest, and flow southeasterly across the country, to empty in to the Persian Gulf. The Iraq plan, to develop this potentially fertile region, Lilienthal reported, “has been described as a project that is essentially an expansion and adaptation along the lines of TVA.” Extensive work was done later by David Lilienthal, personally, and his D&R Corporation in Iran.

“To the northwest of India and Pakistan beyond the famous Khyber Pass lies the extremely mountainous country” of Afghanistan, Lilienthal wrote. There are plans, the former head of TVA stated, to develop the Helmand River and its tributary, the Arghandab, for power and irrigation. James B. Hayes, a former

TVA project engineer, was the project chief for the American contractor who worked on the 1950s Afghan project, Lilienthal reported.

For India, in addition to two projects already under way along TVA lines, Lilienthal outlined development projects on tributaries of the Ganges River. The Sutlej Development project would include a 560-foot-high dam, electric generating capacity, and a 1.5 million-acre irrigation area.

Today’s destroyed nation of Haiti, which is about one fourth the area of the Tennessee Valley, had plans to develop the Artibonite Valley, Lilienthal reported. In 1952, the Inter-American Institute of Agricultural Sciences, founded in Costa Rica in 1942 by President Roosevelt, put forward a plan for a “little TVA” in the Valley. It encompassed not only a series of power, flood control, and irrigation projects, but also industrial development and expanded public health and education.

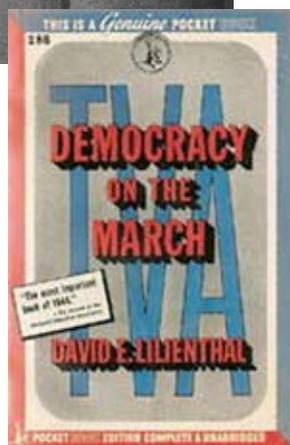
In 1946, Lilienthal travelled to Mexico, where he encountered former TVA engineers, and young Mexicans who had trained with the TVA. Construction equipment still had the letters “TVA” on the trucks and gondolas, he observed. The Papaloapan Commission, or as it was referred to, the “Mexican TVA,” developed a plan to build four dams for flood control, and the integrated expansion of navigation, industry, agriculture, irrigation, and power development.

The underdeveloped “vacation” haven island of Puerto Rico had plans in the early 1950s for a “junior-sized TVA.” Four dams were proposed for power and irrigation. The chief engineer for the project was Carl Bock, formerly with the TVA.

In 1942, the government of Peru asked the U.S. to send experts to that nation to supervise a project to develop Duck Canyon, formed by the Santa River. This “Andean TVA” was overseen by three engineers—civil, construction, and electrical—who were all former employees of the TVA. Specialists from the Chilean Development Corporation, which was established in 1939, trained at the TVA for 6 to 12 months. Extensive plans for Colombia and Brazil were also developed.

In the 1930s and 1940s, the Tennessee Valley was a training ground for visiting experts from abroad who could bring integrated regional economic development planning back to their nations. In the 1950s, the experienced technical managers of the TVA were ready to fan out across the globe to help these projects come to fruition.

In 1945, David Lilienthal was distraught at the death of President Roosevelt. Although he continued in government, as head of the new Atomic Energy Commission, Lilienthal could see no



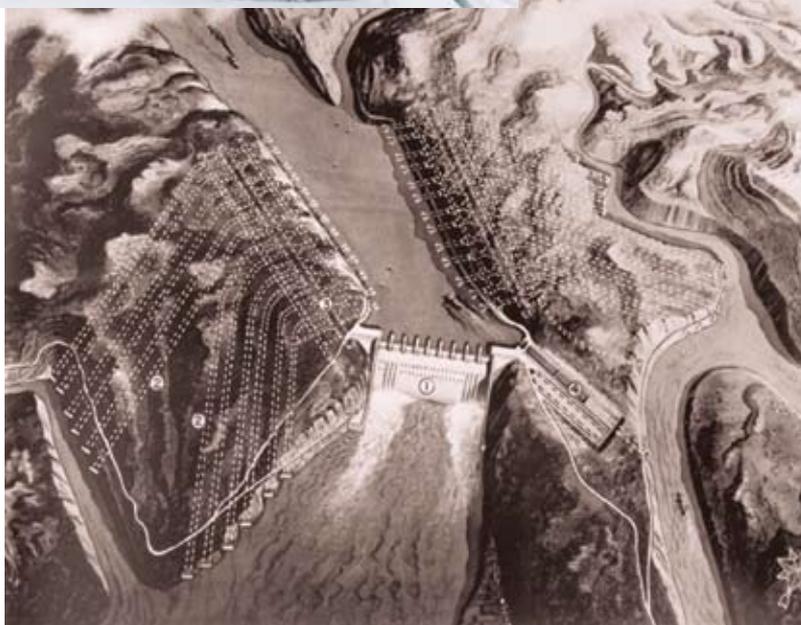
way that the Truman Administration would carry the TVA to “thousands of valleys” around the world. In fact, Truman, was busy helping Winston Churchill reestablish the British Empire’s control over the very nations in the Middle East and Africa that Lilienthal had hoped to help develop.

In 1955, Lilienthal and Gordon Clapp formed the Development and Resources Corporation, to “provide planning and administrative services in resource development along TVA lines.” With experienced experts from the TVA, and a cadre of young, eager engineers, D&R worked around the globe over the course of the next 20 years, to replicate the success of the TVA.



National Archives

Bureau of Reclamation engineer John Lucien Savage (center), was invited to China by Chiang Kai-shek in 1944. Savage, who had worked on many TVA dams, made a detailed proposal in 1945 for the Yangtze River development (below). But it took until 1992 for the Three Gorges Dam program to get under way.



The TVA on the Jordan

The area of what was called Palestine in the 1940s, is slightly over 10,000 square miles, or one quarter the area of the Tennessee Valley. In the mid-1950s, the men who had played key leadership roles in the TVA presented a plan for integrated development to the region’s nations and to the United Nations. The proposal was to build a series of dams on the upper Jordan River and its tributaries, which would store water and divert resources into a network of irrigation canals. To compensate the Dead Sea for the loss of these waters, seawater from the Mediterranean would be introduced at a point near Haifa, and conducted through tunnels and canals down the below-sea-level Jordan depression, to the Dead Sea.

It was estimated that 660 million kilowatt-hours of electricity per year could be provided by the dams, and more than 600,000 acres of land could be irrigated for cultivation. In the mid-1950s, Gordon Clapp, who had a 21-year career as general manager and chairman of the TVA, headed the U.N. Economic Survey Mission for the Middle East. The network of water projects required the participation of Syria, Lebanon, Israel, and Jordan. Only such a multinational project would break the death-grip on the region, stemming from the British-French Sykes-Picot Agreement of 1916. In anticipation of the breakup of the Ottoman Empire after World War I, Western Asia was secretly partitioned by these colonial powers into spheres of influence and control, through which the British still today keep the entire region on the cusp of war. The TVA on the Jordan was not started in 1954, and two years later, the British threw the region into the Suez crisis.

In 1990, during the build-up to the Gulf War, economist Lyndon LaRouche resurrected his earlier, 1974 plan for regional

economic development planning, his “Oasis Plan” for the Middle East. By that time, with the possibility of using the most advanced nuclear energy technologies for regional economic projects, LaRouche proposed that water not only be captured and diverted, but also *created* through the use of high-temperature nuclear reactors for desalination. These projects, and peace in the region, still await realization.

The Challenge of the Yangtze

One of the greatest legacies of the Tennessee Valley is the role it played in the taming of China’s Yangtze River. As David Lilienthal remarked in describing the challenge in the 1950s, “The terms gigantic or colossal are not inappropriate for this plan, which dwarfs the TVA by comparison.” Within a 300-mile radius of the proposed dam site, more people would be affected than live in the entire United States, he said. The Yangtze River, more than 3,500 miles in length, is the third longest river in the world, with a drainage area that is nearly



For a history of the Three Gorges Dam, see *“Three Gorges Dam: The TVA on the Yangtze River,”* by William C. Jones and Marsha Freeman, 21st Century, Fall 2000. A [text-only version](#) is available here.

20 percent of the land area of China.

Plans to dam the river to prevent its periodic catastrophic flooding and bring electric power to an isolated and backward population, were put forward by Sun Yat-sen, the founding father of modern China, as early as the second decade of the 20th

Our delegation succeeded in killing a 700-foot high dam on the Yangtze River that a bunch of engineers there had been in love with for the past 20 years.

Century. A massive flood on the Yangtze in 1931 took the lives of 145,000 people and an equally devastating flood four years later, killed nearly as many people.

In 1939, China’s ambassador to the U.S., Hu Shih, suggested to TVA Chairman Lilienthal that the TVA should help rebuild China after the war. During the war, engineers from China’s National Resources Commission visited the TVA, and a TVA engineer was an advisor to China’s War Production Board. In July 1944, the Resources Commission of China met at the headquarters of the TVA. That year, John Lucien Savage, a master builder from the U.S. Bureau of Reclamation who had worked on a number of TVA dams, was invited to China. Savage laid out a detailed and extensive plan for the Yangtze River program, and recommended the training of Chinese engineers at the TVA.

Near the war’s end, President Roosevelt dispatched representatives to China, who brought with them the TVA’s plans, a Chinese translation of Lilienthal’s 1944 book, and offers of cooperation. But the death of Roosevelt, and the civil war in China, delayed for decades what, finally, in 1992, became the Three Gorges Dam development project.

In 1980, the year after the re-establishment of diplomatic relations with the People’s Republic of China, the United States and China signed a “Protocol on Cooperation on Hydroelectric Power and Related Water Resource Management.” Unfortunately, the team dispatched by President Carter to China, to discuss joint projects, included his TVA Chairman and Malthusian fanatic S. David Freeman, who boasted upon return:

I think our delegation succeeded in killing a 700-foot high dam on the Yangtze River that a

bunch of engineers there had been in love with for the past 20 years.

In the Spring of 1981, a 10-man delegation from the Reagan Administration’s Bureau of Reclamation was in China to study the proposed Three Gorges Project. But with the advent of the Clinton/Gore Administration in 1993, the “environmental” lobby now had a catbird seat in the Vice President’s office, and American firms were forbidden from participation in this vast project. Nevertheless, both the Chinese, and the TVA, persevered. As President Clinton worked to improve relations with China in 1998, doing an end-run around eco-saboteur Al Gore, Tennessee Governor Don Sundquist and TVA Chairman Crowell organized a conference in Beijing on “Economic Opportunities Through Water and Energy.” It was facilitated by Clinton’s Ambassador to China, Jim Sasser, a former Tennessee Senator.

In 1998, a Cooperative Agreement was signed with China for the TVA to review China’s master plan for dams and develop-



The Mekong River: President Kennedy tried to recruit David Lilienthal into a diplomatic position to develop a “Southeast Asian TVA” here.

ment of the Han River, the largest tributary of the Yangtze, which is one and a half times the length of the Tennessee. In addition to decreasing the flow to the Yangtze for flood control, the plan is for a channel to be built to divert some of the excess water from the Han River to the dry north, and to Beijing.

The Three Gorges Dam is now producing power, controlling floods, and allowing navigation along one of the world's great rivers, thanks, in significant part, to the model that was provided by the TVA.

The War We *Could* Have Won

In the early 1960s, the Kennedy Administration tried unsuccessfully to recruit David Lilienthal to a diplomatic position. Offering him the ambassadorship to Thailand, Under Secretary of State Chester Bowles tried to tempt him, by suggesting that the job would help to “create the atmosphere and steam behind the development of the Mekong River, a big Southeast Asian TVA.” History would have been written differently, had that project become the centerpiece of the Johnson Administration's policy in Vietnam, rather than the deployment of hundreds of thousands of troops.

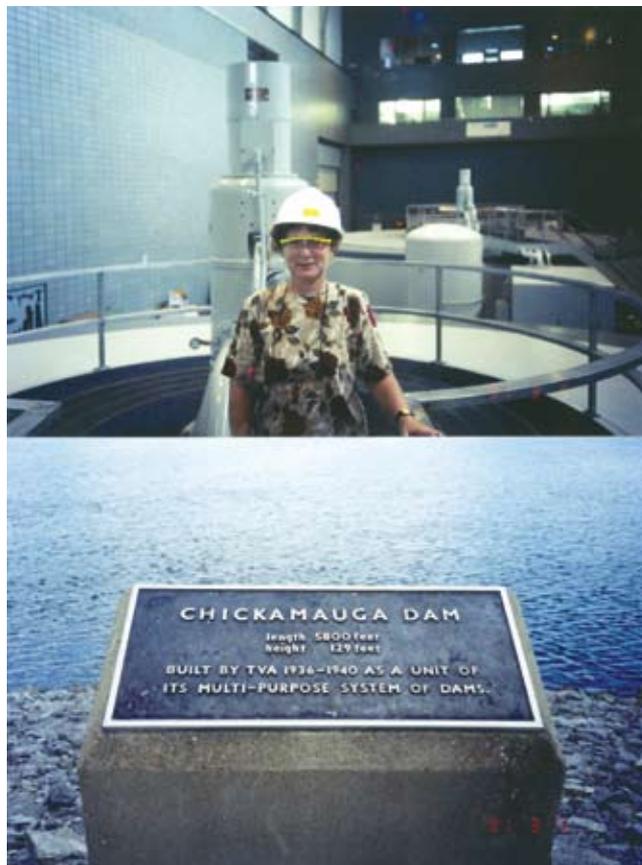
The Mekong project was unfortunately conceived of by the White House primarily as a “postwar” reconstruction initiative, although there were attempts to use it as an instrument of reconciliation. David Lilienthal made four trips to Vietnam during 1967-1969 to meet with officials there, survey the area, and develop a plan. Finally, in April 1970, Lilienthal's company, D&R Corporation, seeing little progress, ended its presence in South Vietnam. Lilienthal presented a 600-page report, “The Postwar Development of the Republic of Vietnam,” to the Vietnamese government, and then to President Nixon in 1970.

The Vietnam War did more than sacrifice the lives of more than 58,000 Americans and millions of Vietnamese. It destroyed much of the moral fiber of this nation, pushed the economy down the road to the physical wreckage it has become, and killed the most effective science driver for the future, the post-Apollo space program.

FDR's Legacy

In the Fall of 2005, after the devastation of Hurricane Katrina, which struck the poorest region of the United States, proposals were put forward on how to rebuild the Gulf states. *Executive Intelligence Review* examined the economic profile of the most affected states, mapping the region county-by-county. The study found that only the TVA region had almost no counties of “persistent poverty,” defined as having poverty rates of 20 percent for a decade or more.² FDR's bold initiative of the 1930s had fulfilled its promise. Reflecting that achievement, Lyndon LaRouche called at the time for a “Super-TVA” to rebuild the Gulf.

After the election of Barack Obama in 2008, hysteria broke out among the third-generation Wall Street neo-imperialists, in the footsteps of those who opposed Franklin Roosevelt's fight against fascism, at the possibility that the incoming Democratic President might become “another FDR.”³ A barrage of books,



The author in the turbine room at the TVA's Chickamauga Dam.

articles, TV commentaries, and editorials burst upon the scene to try to convince policymakers, and the American people, that Roosevelt's New Deal was a failure. The TVA, which, along with Social Security, is the most enduring legacy of FDR, was a prime target.⁴

In fact, there was nothing for these fools to worry about. President Obama had no intention of becoming “another FDR.” Instead he continued the British/Bush policies of hyperinflationary bank bailouts, endless wars, and the increasing impoverishment of the American people.

In the 1930s, the TVA reshaped the seven-state Tennessee Valley and transformed its population, using electricity as an engine. NAWAPA will directly reshape a continent, drive the most dramatic change in economic policy since the New Deal, and push the frontiers of science in the polar regions and our connection to space. Like FDR's Bretton Woods agreement, a new global financial architecture will enable other nations—most immediately, Russia, China, and India—to join this global reconstruction effort. NAWAPA will be the true legacy of President Roosevelt's TVA.

2. “Super-TVA Needed, Not Halliburton Profiteering,” Paul Gallagher, *EIR*, Sept. 16, 2005.

3. See, “Fascists, Then and Now, Stalk the FDR Legacy,” by Jeffrey Steinberg and John Hoefle, *EIR*, Feb. 27, 2009; and, “Amity Shlaes' Not-So-New Ameri-

can Fascism,” by Jeffrey Steinberg, *EIR*, March 20, 2009.

4. The year 2009 saw the revival of William Chandler's 1984 book, *The Myth of the TVA*, which tried to use statistical hocus pocus to “prove” the TVA had failed.