



Modern Marvels
The Tennessee Valley Authority

The History Channel 1995
Terry FitzPatrick, Writer/Producer/Director

Opening Introduction

helicopter aerial or river rapids

NARRATOR: To tame a wild river is to challenge the forces of nature, especially a river as powerful and unruly as the Tennessee.

dam building footage

This is the story of daring men whose vision sparked one of the biggest engineering challenges in history. Could they tame an entire river system--thousands of miles long--to serve mankind? A project of this scope had never been attempted. Dozens of massive dams, 200-thousand workers, a billion-dollar price tag.

Electrical generators, factories, President Roosevelt views construction site

If successful, it would be a nationwide model, bringing power, industry, and modernization. If unsuccessful, it could leave the country bitter at the audacity of the federal government.

Workers at dam sites

The Tennessee Valley Authority--the TVA--would become one of America's greatest gambles. The whole world watched as America's best minds set out to tame the Tennessee.

Modern Marvels Series Open

Act One

Segment Title: The Raging River

Historical footage of farmer in doorway,
lightning, rain, flooding

NARRATOR: In the early 1930's few people had greater reason to curse nature than residents of the Tennessee River Valley. Every spring brought an onslaught from above. Up to six feet of rain pounded the valley each year, making it one of the wettest and flood-prone regions in North America.

Roy Talbert Jr.

Talbert: "The Great Tennessee River was a beautiful river, but it could be a deadly one. Engineers called it a "flashy" river and that meant it could rise from a relatively mild stream to a raging killer in a very short time."

Historian

flooding & wagon hauls people to tents,
house flooded, child refugees, baby
refugee

NARRATOR: Floods took a frightening human toll. Hundreds were killed. Thousands left homeless-- forced to take refuge in tents. The river left no life untouched. Even the lives of children.

Wilma Dykeman

Dykeman: "As a matter of fact, the first word I ever said was 'water coming down.' There'd been a little flood on the little stream in front of my house. So I didn't just speak a word, I said 'water coming down.'"

Tennessee Author

Riverbank soil breaking away

NARRATOR: The rains took a toll on the land as well. Each year, the valley lost tons of precious top soil. Where cotton and corn once thrived, the land now bore the brutal scars of erosion.

Dykeman: "Being a part of the Tennessee River Valley was the fact that what was given to you could also be taken away. It could take away the land and it did. The rains came, eroded the mountains, it eroded the fields, eroded the pastures. So the rain that was nurturing could also ruin the land."

hill cabin, woman at kettle, man whittles,
man with horse plow

NARRATOR: This was the sorry state of life in the hills of Appalachia. The rains kept people from ever getting ahead. Farmers lived in shacks without electric lights or running water. There were no radios, no refrigerators, no modern conveniences. The tired soil kept people on the brink of starvation.

barefoot kids in one-room school house

Without a sound economy, there was little money for things like education. Children learned just the basics in drafty one-room schools.

doctor visits feverish man in bed

There was little money for adequate health care either. One-third of the valley was stricken every year by a disease unheard of in most of the United States: malaria.

family outside cabin home

In many ways, the Tennessee Valley was 100 years behind the times....and showed little promise of ever catching up.

fade to black

Segment Title: A Vision of Progress

Contemporary aerials of river valley,
barges and power lines

NARRATOR: Ironically, the very river that had brought decades of disaster, could also provide salvation. Water was the valley's greatest natural asset. If properly developed, it could provide a vital route for shipping, and enough electric power to fuel an industrial revolution.

men with blueprints

What residents needed was the money and know-how to harness the river's great potential.

FDR/crowd at convention

They would get it in 1933, as part of President Franklin Roosevelt's New Deal.

Depression-era tent city/poor people,
unemployment line, shanty towns,
men on streets

As Roosevelt took office, the entire nation was suffering the same economic misfortunes that had befallen the Tennessee Valley for generations. The Great Depression robbed 15- million people of their jobs, 25-percent of the workforce. Shanty-towns popped-up everywhere, filled with drifters seeking employment. Men paraded through towns to offer their labor for one dollar a week.

Talbert: "Much of the country had simply, I think, given up hope. A sort of depression psychosis develops where you haven't found a job and you haven't found a job and hopelessness becomes the fundamental fact of your life."

still photos of Tennessee poor in
Depression

NARRATOR: The Great Depression hit the Tennessee Valley especially hard. Here, entire families lived on less than 100-dollars a year.

Dykeman: "The South, compared with the rest of the nation, was much poorer. Everything that was bad in the nation was compounded in the South and made even worse in the Appalachian area."

FDR Inaugural Footage

Roosevelt: "This great nation will endure, as it has endured, and will revive and prosper."

NARRATOR: At his inauguration, President Roosevelt promised quick action to rescue the country from poverty. And he picked the bleakest spot he could find--the Tennessee Valley--to lead the way.

FDR train rolls to Tennessee

FDR on construction platform

At the river town of Muscle Shoals, Roosevelt proposed a wild scheme: a federal super-agency that would tame the river by building a system of giant dams.

men at time clock

map graphic

FDR at desk signing bills

Congress

dip to black

Segment Title: The Odd Couple

Roosevelt: "We are here because the Muscle Shoals development and the Tennessee River as a whole are national in their aspect and are going to be treated from a national point of view."

NARRATOR: Construction would provide desperately-needed jobs, and the dams would ultimately generate power to improve people's lives.

The Tennessee Valley authority--the TVA--was given unprecedented powers over a huge portion of the southeastern United States. 40-thousand-square miles were involved. Nearly all of Tennessee, and parts of Kentucky, Virginia, North Carolina, Georgia, Alabama and Mississippi. Roosevelt included the entire Tennessee River, all 652 miles, as well as thousands of miles of tributaries. An entire watershed.

Talbert: "All together then, what he saw was a system of regional planning, the first real attempt to do that anywhere in this country, and using the Tennessee Valley as a model. If TVA worked, for the social and economic development of that entire region, then he thought we could replicate other TVA's around the country and, eventually, he envisioned a national planning agency, a national TVA."

NARRATOR: President Roosevelt proposed the TVA in his first hundred days in office. The bill was highly controversial, and extremely vague about precisely what TVA would do. But the president rammed it through congress in just five weeks.

Roosevelt signs the TVA act, still photos
of TVA leaders

NARRATOR: To lead his bold experiment the President picked two men who would become one of history's great odd couples. Actually, the TVA board was comprised of three members, but two of the three quickly stood out for their unbridled drive and ambition. For chairman, the president picked America's foremost hydraulic engineer: Arthur Morgan.

Ernest Morgan

Morgan: "My father was very tough minded, but soft hearted. He had this enormous commitment to human well-being, to humanity, to the future."

Arthur Morgan's son

Stills of Morgan from family album

NARRATOR: Morgan was the epitome of the self-made man. He'd quit college after just two months, to travel. He picked-up technical skills by working as a logger, miner and farm hand.

Ohio construction footage

Morgan used this knowledge to build an innovative flood control project in Ohio, which won international acclaim.

Morgan at desk with telephone

Despite his lack of formal training, Morgan became president of Antioch College, a small experimental school in Yellow Springs Ohio.

Morgan: "He definitely was a dreamer. He was also extremely able in bringing his dreams to life. He has been characterized as a Utopian. But he was a down-to-earth Utopian. One who made Utopia happen."

Morgan portrait

NARRATOR: Behind his stern expressions was a charismatic man, one who persuaded engineers to work for the good of society.

Talbert: "It was incredible how he could create disciples with his talk about cooperation and good will and straightforwardness and the importance of always acting in the proper way for the long run, never being expedient for the here and now. On the other hand, if he didn't inspire you, if you didn't become his disciple, you were more than likely to find him a bit narrow-minded, a bit dogmatic and quite a bit paternalistic and find him, altogether too much to take."

Photos of TVA Board and Lilienthal

NARRATOR: Beside Morgan on the TVA board, sat a man young enough to be his son--a man with no engineering skills whatsoever. David Lilienthal was a Harvard-educated lawyer who was picked for his brilliant legal mind and keen sense of politics.

Footage of 1920's Chicago skyline & telephone operators

Lilienthal had forged his reputation by attacking utility companies in Chicago and Wisconsin. He'd won huge refunds for customers who'd been overcharged by the phone company.

Lilienthal at desk

While Arthur Morgan saw TVA as a giant engineering experiment, Lilienthal saw something else.

Talbert: "Lilienthal thought in terms of the battle, the political battle, the struggle--and the struggle for Lilienthal's career as well. To Lilienthal, the Tennessee Valley Authority meant electric power, proving the case that publicly owned electrical power companies were the way to go."

TVA board meeting footage

NARRATOR: The two leaders couldn't have been more different, and they began to fight one another immediately. Friends had warned Arthur Morgan to oppose Lilienthal's appointment, but Morgan did not.

Sunset aerial of Tennessee valley at
sunset TVA beauty reel

fade to black

Morgan: "He had an almost messianic ability to convince people of his ideas. And he felt that if he could sit down with Lilienthal, he could, they could work it out."

NARRATOR: Together, this odd couple moved to Tennessee They'd been given the power of kings to transform the Tennessee Valley.

ACT TWO

Segment Title: Moving Mountains

Footage of bulldozer in woods, tree felling, logging trucks, sawmills, bonfires

NARRATOR: TVA didn't waste a single second, and bulldozers were on the move just months after the agency was created. Five-thousand local men were hired immediately to begin clearing land. Whole forests came down so that trees would never clog the dams and reservoirs. The logs were salvaged, and turned into lumber at local sawmills. The brush was burned in giant bonfires.

Footage of water cannon, steam shovels, core sampling

Once the land was cleared of trees, soil was blasted away with a water cannon to expose the bedrock where dams would soon stand. Engineers found a bounty of raw materials in the valley. The hills were rich with limestone, a vital ingredient for concrete. Core samples were drilled to study the suitability of the rock for dam building.

men insert fuses in dynamite

Then, hundreds of men known as powder-monkeys carefully packed the bluffs with dynamite.

explosion

Rock crushers

Boulders as big as cars were methodically crushed into pea-sized pebbles, to make concrete.

draftsmen at table

Early on, TVA engineers discovered their mission posed a frightening technical dilemma.

graphic

To improve navigation, the valley needed a series of low dams with locks, so that barges could glide along the river-- step by step. But flood control and power generation required high dams -- to trap storm water and slowly release it through electric turbines. Boats could not travel past dams like these.

Wylie Bowmaster

Retired TVA Engineer

Bowmaster: "This was totally new: to develop an entire river in order to get the most you could out of that river. And our job was to get the most out first for navigation, second for flood control and third for power. You could build a system to do any one of those three, or you could do two of the three. But to do three of them, and balance them out economically, that was the trick."

TVA planners meeting around table and point to map

NARRATOR: To solve the problem, TVA would have to think big. And only an agency with power over an entire river could do what planners were about to propose.

graphic

The main stem of the Tennessee would get ten low dams for navigation. The tributaries would get 25 high dams to control flooding and generate power. It was a unified approach to corral water high in the mountains, and carefully release it like a gentle wave. With 35 dams in all, the TVA would be the largest water-control system on earth.

Bowmaster: "We had a sense of making history because this was the first time they had developed, any place in the world, a whole river system for competing purposes: navigation, flood control and power."

Footage of 1930's town meeting

NARRATOR: Not everyone thought it was a good idea. Especially Tennessee hill folk.

Dykeman i/v 5278/15:44

covered by mountain man reacting to engineer

Footage of family packing, house burning, digging up cemeteries

Still of Tennessee mountain man with rifles

Footage of men signing up for work

Footage of men working

Dykeman: "Well of course we were surprised. I guess you could almost say we were shocked. To build dams meant that land would be taken. If land was taken and flooded it meant that homes would be taken. The demands that it made on our culture and on our way of life, on our sense of family and of place, this was not happy."

NARRATOR: TVA launched an exodus of epic proportions. 15-thousand families were told they'd have to move--their property would be flooded by the backwash of the giant dams. Homes were bought by the government, and destroyed. The reservoirs would also claim the heart of the valley's agricultural community. 300-thousand acres of farmland would be flooded forever. The project was so invasive it would even disturb the dead. Entire cemeteries were un-earthed and moved to higher ground.

Tennessee hill folk are known for their pride and independence, and there were fears that violence might erupt. But it did not.

Talbert: "It's a little difficult for the federals to come down to this valley and tell people how to live their lives. That problem, while it was a problem, was solved because the Feds brought jobs and that's what this valley needed above anything else."

NARRATOR: In fact, people poured out of the foothills to sign up for construction work. TVA was hiring like no one had hired before. Thousands of jobs, for common laborers and skilled technicians. High paying work was something the valley had never known. With TVA taking all comers, things were looking up.

Song: " My name is William Edwards, I live down Coal Creek way. I'm working on a project they call the TVA. The government began it when I was but a child, but now they are in earnest and Tennessee's gone wild."

folksong music continues with
construction footage

NARRATOR: As a public works project, TVA was an overnight success. The valley was put to work.

Bowmaster: "Well it was a very interesting place. Because there were hundreds of people just like me."

Still group photo of engineers

NARRATOR: Engineers came from around the country to be part of the biggest, most exciting construction project ever.

Bowmaster: "Well, we had jobs. That was one thing. We were happy. And we had jobs that we liked."

construction still photos

Song: "All and down the valley, they heard the great alarm. The government means business it's working like a charm. The Government employs us, short hours and certain pay. Oh things are up and coming, God bless the TVA."

Dip to black

Segment Title: A Building Frenzy

still of Morgan on worksite

NARRATOR: TVA Chairman Arthur Morgan was known for his boundless energy, and he set a construction schedule that was nothing short of frantic.

Morgan: "In the early days of TVA, there was enormous pressure to get work underway. And there were thousands of people needing jobs. And they told him: hurry, hurry, hurry. "

explosion

crane footage shot

NARRATOR: And hurry he did. Dams were going up in record time. At one point, 11 dams were under construction simultaneously.

engineers testing scale model

Work went so quickly that foundations were being built... while engineers were still deciding how the tops of the dams should look.

Bowmaster: "There was just so much to be done. But we didn't have to know the details. So we could fill in the details on the drawings later."

Footage of cement plant, trains, buckets, vibrator crews

NARRATOR: To support this building frenzy, huge concrete mixers were designed to churn out six tons of cement every minute. An ingenious railroad and cable system delivered this concrete in drop-bottom buckets. Crews with pneumatic vibrators shook air bubbles out of the cement as it settled.

buckets of cement empty out

VA's first dam, Norris, required 166-thousand buckets of cement--more than a million cubic yards, delivered around the clock, bucket by bucket, every 90 seconds.

still of partially completed dam, river flowing

When complete, Norris would be 265 feet high, and 1860 feet across. It could hold an entire year's rainfall, in a lake measuring 83 square-miles.

still man inside penstock, footage of penstock moving into place

Giant pipes, called penstocks, would funnel this water toward two electric generators. Each section of penstock weighed 40 tons, and moving them into place was treacherous business. Thousands of men risked their lives every day at TVA dams. The work was gritty, back-breaking, and above all, dangerous.

Bowmaster: "Something like this where you've got these big buckets of concrete moving over head on a cableway--if something went wrong with that cableway, that bucket might fall and no telling how many people would be killed below."

ambulance at hospital

NARRATOR: There were accidents, and 112 men lost their lives. But that was considered a remarkably good record for a project so big. TVA workers received special training. This attention to safety paid off.

Construction wide shots

In just one year, The Tennessee Valley Authority was off to a remarkable start. The hills were buzzing with the sounds of progress.

Morgan on site walking

Arthur Morgan succeeded beyond anyone's expectations. And with construction well underway, Morgan would take TVA into even more challenging territory: social engineering.

dip to black

ACT THREE

Segment Title: Building a Better Life

Hoover & Coulee dams construction
shots

NARRATOR: The 1930' was a golden age for heavy construction throughout the United States. President Roosevelt viewed dams as a sure-fire way to provide jobs and rebuild America's battered economy. Dams were going up everywhere.

In a steep desert gorge in southern Nevada, the towering Hoover Dam was rapidly rising. It would become America's tallest dam, measuring 726 feet.

And in the Pacific Northwest, work was underway on the grand-daddy of dams, the massive Grand Coulee project on the Columbia River.

men working and footage of work camps

Hoover and Grand Coulee were built in isolated locations, where men endured a rugged existence in temporary work camps. These tar-paper towns featured raucous saloons and houses of prostitution.

Morgan walks on podium, town shots,
children at market and on swings,
women inside homes, libraries,
cottages

Back in the Tennessee Valley, Arthur Morgan wanted his project to be something more. And so TVA built the town of Norris, Tennessee, five miles downstream from Norris Dam. Norris would be a model community...a vision of what life could be like with proper planning.

Talbert: "Morgan was quite right that you don't have to let your construction villages turn into the hellholes that were so typical of large construction projects. You create proper homes for your workers with families, proper dormitories for those who are unmarried. The small electrified cottages came also with a five acre plot for farming. There was nothing he wouldn't try to improve the lives of his workers."

Classroom, cottage, maps, morgan in cafeteria

NARRATOR: Norris was a family town, with churches and schools. Workers could rent a new, four- room home for 14 dollars a month--about one week's pay. Five dollars more, got you a furnace, stove, refrigerator and water heater. This was Arthur Morgan's dream. An idyllic community. A town that he, himself called home. He even ate in the village cafeteria. Norris was a place where common laborers could picnic in the village green.

Music video of community picnic:workers play polo, sack race, long jump, sprint, nail hammering contest

Still of Lilienthal in office

NARRATOR: David Lilienthal ridiculed Morgan's social programs and said valley life would improve if TVA focused on rapidly providing cheap electric power.

FDR and Morgan in car in Tennessee Valley

But President Roosevelt believed government could be a benevolent force in people's lives, and he wanted Arthur Morgan to prove it in the Tennessee Valley.

Morgan: "Roosevelt said to him: The TVA should relate to every area of human concern. They were interested in revitalizing the whole area, from top to bottom."

Bookmobile, woodshop, vaccinations

NARRATOR: Morgan applied his vision beyond the town of Norris. To combat the widespread problem of illiteracy, Morgan built a horse-drawn book-mobile to travel throughout the valley. Woodworking and machine shop classes taught people industrial skills. Children were vaccinated against disease.

men fogging swamp in boat

swamp pumps working

men working in machine shops

And to combat malaria, TVA sprayed enough insecticide to kill one-billion malaria-breeding mosquitoes. To ensure the mosquitoes did not return, entire swamps were drained. Pumps sucked 100-thousand gallons of murky swamp water every minute, sending it to the reservoirs where it could do no harm.

TVA had given the valley the tools it desperately needed. Residents were building more than an ambitious series of dams. They were building a better life.

Talbert: "When you consider all of the workers needed for this massive construction project, common laborers making 45-cents an hour; eating all he could eat in the TVA dining hall for 25-cents; renting one of those electrified modern cottages for 14 dollars a month-- boy was that a change."

Catering trucks, women at drafting tables, women in power plants, black workers

NARRATOR: TVA employees enjoyed the most progressive working conditions in the nation. They labored only five hours a day. That way, more shifts were possible and everyone could get a job. There was work for women. Good work--at drafting tables and in power plants. There was also an early form of affirmative action. Blacks were employed in proportion to their population in the valley. They earned the same wages as whites, although they lived--and sometimes worked-- in segregation.

Norris school children

Morgan was attacked by critics for using the people of Tennessee as guinea pigs in a giant social experiment. But on the whole, folks in the valley were smiling.

fade to black

Segment Title:Life on the Farm

men plowing fields

NARRATOR: The Tennessee valley was largely a rural region of tenant farmers, who eked-out a living on 70-acre plots of land. If TVA was going to make a major improvement in the standard of living, it would have to improve life on the farm. As well, the devastating floods and erosion were actually made worse by the way farmers traditionally plowed their land.

meeting with farmers in school house,
surveying farmlands

TVA offered special assistance to 23,000 people who signed up to be "test demonstration" farmers. The best specialists in the country turned these farms into living laboratories.

contour plowing demonstration,
spreading fertilizer, walking in fields,
harvesting

First, farmers learned to plow along the natural curves of the land. Contour plowing prevents rain from racing downhill and causing a flood. Next, farmers learned to use phosphate fertilizer, which restored productivity to the tired soil. Then a broad mixture of crops was introduced, including clover, tobacco and wheat. Community threshers improved the efficiency of the harvest.

Farmland footage

The plan worked. The demonstration farmers dramatically increased their harvests. Even though half the valley's farmland had been flooded by reservoirs, the total farm output increased by nearly 100 percent.

electric substation at dam

TVA had dramatically improved life in the valley. But the biggest improvement was yet to come. Electric power would change things in ways no one could anticipate. And it would create a power struggle that would tear TVA apart.

fade to black

ACT FOUR

Segment Title: Currents of Change

children sing happy days are here again
to President Roosevelt

people in stores

dam near completion, main street
footage, TVA office exterior

Power switches are thrown, water flows
over dams, generator house, water
spillways, power towers, factories,
shots of houses, boy gets milk from
refrigerator.

Lilienthal in power plant

power lines

NARRATOR: By the late 1930s, America was back on its feet. The Great Depression was over. People were busy at work once again.

The first TVA dams were rapidly coming on line. And the Tennessee Valley--once a backward and forgotten place, was suddenly, hopping. What made the difference more than anything was power.

TVA Newsreel: "Day and night, in peace and in war, the dams work for the people. Power for the factories. Power for new industries. Power to run a million machines. Aircraft, tractors, textiles. Engines, shoes, fertilizer aluminum. Cheap and abundant power to light the cities and villages. Power to the farms, to be converted to a hundred homely uses. Power working tirelessly, endlessly. Raising standards. Reducing drudgery. Power in the hands of the people."

NARRATOR: Power was the focus of TVA's youngest board member, David Lilienthal. To ensure continued prosperity for the valley, he pushed TVA to become the nation's premiere public power company.

Lilienthal made TVA an electric dynamo. And TVA sold its power at bargain-basement rates.

wires going up

Talbert: "That was Lilienthal's great contribution. He's the one who understood that if you had low electric rates and if you had cheap electrical appliances, you could run power lines out into the countryside and demand would warrant, would justify the whole process."

footage of power line construction

NARRATOR: TVA strung enough wire to span the nation seven times. Towns that had never known electric light, would soon leave the dark ages behind.

TVA Newsreel: "The Tennessee Valley authority is pushing lines into rural communities. Now the cross arm swings into place and the insulator is securely fastened. The line must be tied in firmly so that high winds and winter storms cannot disrupt the delivery of cheap TVA kilowatts to farms and homes. Let us contrast for a moment yesterday with today, and tomorrow and tomorrow."

Then and now footage montage:
washtub, stove, refrigerator, ironing clothes

NARRATOR: TVA films chronicled how drastically life was changing. No longer would people scrub their laundry by hand. The wood-burning stove gave way to the electric range. Things we take for granted today--were a godsend then.

men moving stove, woman in kitchen,
woman with new cookware class,
family at radio

The valley set national records for the sale of stoves and refrigerators. Classes taught people how to use their new appliances. Power brought the valley into the modern age. It even touched people's hearts. They could now listen to radio.

FDR fireside chat

Roosevelt: "Not for a moment have I doubted that we could climb out of the valley of gloom."

Dykeman i/v 5279/33:49

Dykeman: "To be able to hear Franklin Roosevelt, the man who had this idea. To be able to hear him make one of his great addresses over the radio, this I think was one of the great things. The radio was there and put us in touch with the world."

Dam shots

NARRATOR: TVA's system of dams worked like no single dam could. Storm water, captured by high dams in the mountains, was carefully dispatched down the river valley. At every dam down the line, the river whirled through electric turbines, putting water to work, again and again.

grain mill, cheese plant, dairy, chicken hatching facility

With nature's bounty of near-limitless power, came an explosion of industry. Grain mills opened. So did a modern cheese plant and dairy. One factory hatched chicks to launch a local poultry industry.

boats at locks

Along the river, navigation locks made it easy for merchants to ship their goods to market. A barge would enter the lock through a giant doorway into a chamber 110 feet wide and 600 feet long. The doors would close, and gravity powered pumps would adjust the water level. Locks work like a giant elevator, gracefully raising or lowering boats to get past a dam.

Graphic of river elevation

In the Tennessee Valley, locks were essential to help boats navigate the 513-foot elevation change along the run of the river. This steep elevation drop made the river a treacherous string of shoals and rapids. But TVA dams smoothed-out the ride, turning the river into a series of easy steps. Locks moved barges from step to step...changing elevation an average of 53 feet at every dam along the way.

children running to dams

TVA dams were true engineering marvels. For valley residents, they instilled a sense of pride, accomplishment, and optimism toward the future.

dip to black

Segment Title: Power Struggles

private power plants, men at control
panel, throwing switches, generators

NARRATOR: Before TVA brought plentiful power to the Tennessee Valley, people who had electricity were at the mercy of private power monopolies. These companies offered no rural service...and in large towns the price was more than most anyone could afford. The situation was similar in much of the nation. President Roosevelt claimed high-priced power was strangling the economy.

FDR speech

Roosevelt "I believe that the individual should have free liberty of action to make the most of himself. But I do not believe that in the name of that sacred word, a few powerful interests should be permitted to make industrial cannon fodder of the lives of half the population of the U.S."

Willkie footage at convention

NARRATOR: In the Tennessee Valley, industrialist Wendell Willkie was a virtual power baron until TVA came along. TVA sold power at half the price Willkie was charging, which prompted Willkie to take TVA to court. It would become a national test-case on the legality of public-power production.

Willkie: "And if it is constitutional for the federal government to do that, then there is no way to stop the government invading into every sphere of private enterprise, whether great or small."

TVA board footage

NARRATOR: Inside the TVA, Arthur Morgan and David Lilienthal locked horns in a bitter feud over how to respond.

	<p><u>Talbert:</u> "The chief problem was over two areas extremely important to Arthur Morgan. One was that you never compete, you always cooperate. Lilienthal, with his experience in dealing with the private power companies, knew that this was a bitter street fight and cooperation was gonna get you nothing but a knife in the neck."</p>
TVA board footage	<p><u>NARRATOR:</u> Morgan felt private companies should keep their share of the market. TVA should serve new customers only. To Morgan that seemed efficient, and fair. But Lilienthal regarded this as a sell-out. The charge stung Morgan deeply.</p> <p><u>Morgan:</u> "My father never sold out to anyone. Let alone the power company. He was never for sale."</p>
Outside US supreme court, walking up steps, inside the building	<p><u>NARRATOR:</u> The internal fight turned public as Wendell Willkie's case against public power pressed through the courts. It seemed the pressure was too much for Arthur Morgan to bear.</p>
Morgan newspaper article	<p>In two magazine articles, Morgan accused David Lilienthal of "dishonest" behavior at the TVA. Morgan said congress should investigate.</p>
Newspaper reporters footage	<p>The charge sparked a national scandal. President Roosevelt ordered Morgan to prove his allegations, at an event unparalleled in American history: a presidential court of inquisition.</p>

Footage of white house, FDR, Morgan

Talbert: "The president of the United States is the judge and the prosecutor and the jury in this case and the press is waiting outside getting transcripts of every page. Starts on March 11, 1938. Morgan says I'll have nothing to do with this. I've been calling for a congressional investigation. And then he says I'm not prepared, you didn't tell me to bring my stuff. Roosevelt gives him a week. Morgan comes back and says: this is improper. We need a congressional investigation. Roosevelt says I'll give you until Monday and that's it. Morgan comes in on Monday and says: Mr. President, I can have nothing to do with these affairs, gets on a train, leaves D.C. and goes back to Yellow Springs, Ohio. The next day, March 22, 1938, Roosevelt fires Arthur Morgan, thus ending, in rather dramatic fashion, what's clearly Roosevelt's toughest personnel problem."

Still Photo of Morgan opening first dam,
footage of workers building electrical
yard

NARRATOR: The visionary who had launched the greatest dam-building project in history, fell from grace amid the rough and tumble of politics. TVA was far from finished: only 8 of 35 dams were complete. And Morgan's dream of social and economic planning was badly bruised.

Morgan: "The TVA had something started here which was unique in the world. And this is something that could have been, become a model. It could have been introduced all over the place but never was. There's only one TVA. And that's a great tragedy; that it stopped here."

exteriors of US capitol, morgan in study,
lilienthal in office

NARRATOR: Arthur Morgan got his congressional hearing, but nothing came of it. He returned to Ohio to run a community service foundation. David Lilienthal became TVA chairman.

Footage: Willkie signs deal to sell his company to TVA

In court, Wendell Willkie lost his battle with the TVA, and quickly sold his power empire to the government for 79-million dollars. It made TVA the nation's largest power company. Still, the future looked grim.

Talbert: "The TVA had survived. It however, had lost much of its momentum. Congressional support, after all of those embarrassing fights, was no longer what it was and the support it had enjoyed in the valley had lessened as well because of the terrible bitterness and this awful bloodletting at the top of its leadership."

Men building dams

NARRATOR: So far, TVA had accomplished an engineering miracle. The question was, could it survive long enough to finish the job.

Dip to black

ACT FIVE

Footage of Pearl Harbor Attack

Newsreel: "December 7, 1941, Pearl Harbor is attacked, and America goes to war."

Hitler reviews troops, troops/tanks on parade

NARRATOR: America's entry into World War Two brought new life to the Tennessee Valley Authority.

steam shovel, bulldozer

Dam construction had languished after the political dogfights between TVA's leaders. But now, TVA was back on track--with an added sense of urgency.

Footage of dams, arms factories

TVA Newsreel: "America prepares. Mighty rivers harnessed by towering dams to the service of peacetime industry, turn their power to the nation's defense. Here in the Tennessee Valley is a mighty power plant, a source of natural energy that is forging modern armor for Uncle Sam. Nearly one million kilowatts flowing in an irresistible stream of power, through a valley protected by mountains from the most daring foes. The strength of over a million horses. In a region that contains one-third of the nation's raw materials required for defense."

men build power yards and dams

NARRATOR: To provide even more power, TVA built dams quicker than they'd ever been built before. Douglas Dam, two-hundred feet high and 17-hundred feet across, went up in just 12 months.

Poster "these dams are vital to defense"

Government posters stressed how important dam construction was.

Arms factories

Throughout the valley, peacetime production was converted to manufacturing the materiel of war. Fertilizer factories retooled, to make ammonium nitrate, essential for bombs, grenades and bullets. The valley turned out 300-tons of ammonium nitrate every day. Textile mills made tents and uniforms to supply the millions of soldiers headed overseas. Four-and-a-half million pairs of boots were produced here during the war.

aluminum production, airplane
production, B-29's in flight

The valley's most important product was aluminum. It takes tremendous amounts of energy to refine aluminum. A single roll requires enough power to run a typical house for years. During World War Two, aluminum meant air power. Training planes were built right in the valley. And huge shipments of aluminum were sent to factories elsewhere to build the Superfortress, the B-29. A single B-29 bomber required 10 tons of aluminum. Without the rapid production of these mighty machines, America might not have ruled the skies of the Pacific.

men construct Oak Ridge

TVA made another key contribution to America's war machine, one that most people didn't know at the time. TVA provided power for a secret city of 50-thousand people. A city with a mission so important that no one was allowed to talk about it. Oak Ridge would refine uranium to build the most destructive device ever invented--the atom bomb.

Atom bomb blast

TVA became a crucial part of the war effort--and in doing so, ensured its own survival.

dip to black

Segment Title: A Living Legacy

Modern aerials of dams

NARRATOR: The Tennessee Valley Authority is the only New Deal construction agency to become a permanent part of the U.S. government. TVA still exists to manage and maintain its ingenious network of multi-purpose dams. These dams have worked flawlessly. Flooding is a thing of the past. Billions of dollars in property damage has been avoided.

aerials of coal barges and power tugs

The Tennessee river is now a vital cargo artery. Barges move efficiently along the river, ultimately connecting with the Mississippi and the world of international trade.

Auto assembly line

The Tennessee Valley continues to be an industrial powerhouse. Cheap hydroelectricity has turned a valley of struggling farmers into one of America's greatest manufacturing hubs.

Aerial of coal plant

TVA has continued to face controversy--particularly from environmentalists. The agency built coal-fired power plants after world War Two, which supported the destructive practice of strip mining.

nuclear plant aerial

TVA also expanded into the contentious world of nuclear power. And, one of its dams has pushed a tiny fish, the snail darter, toward extinction.

earthen dam aerial

fly over spillway and power lines

Still, TVA's system of dams remains an unequaled feat of civil engineering. Their supply of power has been steady, unwavering, for decades.

Generator repair footage

TVA's first generator, unit one at Norris Dam, worked like a Swiss watch until its first overhaul 58 years after going on line.

walking inside penstock with flashlight

The giant penstocks--where 31-thousand gallons of water thunder every second to meet the electric turbines--have withstood the test of time.

Bowmaster looks at dam

The men and women of TVA built their dams to last.

Bowmaster: "I've often wondered what would have happened if TVA hadn't come in. We wouldn't have gotten this many benefits, I'm sure, as we're getting now."

Talbert: What they did was incredible, a sense of fulfillment and a sense of identity and a sense of simply doing good. Now, it's true that nowadays, it's easy to think of TVA as simply the federal government's largest public power company. But on the other hand, I think that legacy of the 30s, that decentralization, that autonomy from Washington D.C., that identification with a particular region, that sense of multiple missions, continues to this very day."

high valley sunset, man fly fishing,
sailboat in sunset, bird takes off in
flight

NARRATOR: The Valley of the Tennessee was once a place where people feared nature. But now, its placid lakes are a place of beauty and serenity. TVA accomplished more than anyone thought possible. It not only conquered the ferocious spirit of an untamed river. It brought hope to a place that knew only despair.

Closing credits