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TVA POLLUTION CONTROL FACILITIES

GOVERNMENT

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HEARINGS

BEFORE THE

COMMITTEE ON PUBLIC WORKS

HOUSE OF REPRESENTATIVES

NINETY-THIRD CONGRESS

SECOND SESSION

ON

H.R. 11824 and H.R. 11929

TO AMEND SECTION 15d OF THE TENNESSEE VALLEY
AUTHORITY ACT OF 1933 TO PROVIDE THAT EXPENDI-
TURES FOR POLLUTION CONTROL FACILITIES WILL BE
CREDITED AGAINST REQUIRED POWER INVESTMENT
RETURN PAYMENTS AND REPAYMENTS

FEBRUARY 26, 27, AND MARCH 5, 1974

Printed for the use of the Committee on Public Works



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H. R. 11929

IN THE HOUSE OF REPRESENTATIVES

DECEMBER 12, 1973

Mr. JONES of Alabama (for himself, Mr. BEVILL, Mr. FLOWERS, Mr. EVINS of Tennessee, Mr. FULTON, Mr. KUYKENDALL, Mr. BAKER, Mr. QUILLEN, Mr. DUNCAN, Mr. BEARD, Mr. JONES of Tennessee, Mr. STUBBLEFIELD, Mr. CARTER, Mr. WHITTEN, Mr. BOWEN, Mr. DAVIS of Georgia, Mr. LANDRUM, and Mr. WAMPLER) introduced the following bill; which was referred to the Committee on Public Works

A BILL

To amend section 15d of the Tennessee Valley Authority Act of 1933 to provide that expenditures for pollution control facilities will be credited against required power investment return payments and repayments.

- 1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*
3 That the Tennessee Valley Authority Act of 1933 is amended
4 by inserting immediately at the end of section 15d the follow-
5 ing new subsection:
6 “(i) (1) Beginning with fiscal year 1975, and each
7 fiscal year thereafter, the Corporation shall be entitled to a
8 credit against the payments required as a return on the
9 appropriation investment in power facilities and the annual

1 repayment sum established for such fiscal year in the first
2 sentence of subsection (e) of this section in an amount equal
3 to the amount actually expended by the Corporation during
4 the preceding fiscal year for any certified pollution control
5 facility. The return on the appropriation investment in the
6 Corporation's power facilities required to be paid by such
7 first sentence of subsection (e) shall be reduced in an amount
8 equal to such credit in the same manner and to the same
9 extent as if such credit were a payment in cash. In any fiscal
10 year when the amount expended by the Corporation for a
11 certified pollution control facility or facilities exceeds the
12 payments required as a return on the appropriation invest-
13 ment for the next fiscal year, the amount in excess of such
14 payment requirement shall be applied, as a credit against
15 the annual repayment sum for the next fiscal year and the
16 appropriation investment required to be repaid by such first
17 sentence shall be reduced in an amount equal to such credit
18 in the same manner and to the same extent as if such credit
19 were a repayment in cash. In any fiscal year in which the
20 amount expended by the Corporation for a certified pollution
21 control facility or facilities exceeds both the payments re-
22 quired as a return on appropriation investment for the next
23 fiscal year and the annual repayment sum established for
24 such fiscal year, the amount in excess of such return pay-
25 ments and annual repayment sum shall be applied to the

1 reduction of the appropriation investment required to be
2 repaid by such first sentence in addition to both the credit
3 against the appropriation investment return payment for
4 such fiscal year and the reduction in such investment re-
5 quired as a result of the credit against the annual repayment
6 sum for such fiscal year.

7 “(2) For purposes of this subsection, the term ‘certi-
8 fied pollution control facility’ means a new identifiable treat-
9 ment facility which is used, in connection with a plant or
10 other property, to abate or control water or atmospheric pol-
11 lution or contamination by removing, altering, disposing, or
12 storing of pollutants, contaminants, wastes, or heat and
13 which—

14 “(A) the Board has certified to the Environmental
15 Protection Agency as having been constructed, recon-
16 structed, erected, or acquired in conformity with pro-
17 grams or requirements for abatement or control of water
18 or atmospheric pollution or contamination; and

19 “(B) the Administrator of the Environmental Pro-
20 tection Agency has certified to the Secretary of the
21 Treasury or his delegate (i) as being in compliance with
22 the applicable regulations of Federal agencies and (ii)
23 as being in furtherance of the general policy of the
24 United States for cooperation with the States in the pre-
25 vention and abatement of water pollution under the Fed-

1 eral Water Pollution Control Act, as amended (33
2 U.S.C. 466 et seq.), or in the prevention and abate-
3 ment of atmospheric pollution and contamination under
4 the Clean Air Act, as amended (42 U.S.C. 1857 et
5 seq.).”.

TVA POLLUTION CONTROL FACILITIES

TUESDAY, FEBRUARY 26, 1974

HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC WORKS,
Washington, D.C.

The Committee on Public Works convened at 10:10 a.m. in room 2167, Rayburn House Office Building, pursuant to notice, Hon. Robert E. Jones presiding.

Mr. JONES. The committee will come to order.

The Public Works Committee is starting hearings today on H.R. 11824 and H.R. 11929, identical proposals by the 18 Members of Congress from the Tennessee Valley area to provide credits to the Tennessee Valley Authority for environmental control expenditures. These credits would be similar to those already provided for private investment for various purposes inasmuch as they would reduce liabilities for payments to the Treasury on the basis of expenditures required to achieve nationally beneficial objectives. Sponsors on the Public Works Committee include Representative LaMar Baker of Tennessee and me.

This legislation is necessary because conditions and circumstances in the Nation, in the electric power industry and in the Tennessee Valley region have changed considerably since the last major review of the TVA Act in the late 1950's.

The price of fuel, for the entire industry, has skyrocketed. While consumer attention has been focused on increases in oil prices lately, the price of coal, the primary fuel of the electric generating business started its steep ascent in 1967.

The Cleveland Trust Co. reported recently that the wholesale price of petroleum at the end of 1973 had still not increased as much as the wholesale price of coal since 1967.

The industry also faces monumental problems in securing the capital funds necessary to replace and increase generating capacity and install necessary pollution control facilities. Interest rates on new long term funds have been increased beyond any previous record.

Since 1959, the Nation, through the Congress, has enacted a number of laws designed to enhance the environment—to require improvements in pollution control for the benefit of all the people of the country.

These are problems and challenges to the entire electric industry—and to consumers of electric power in every corner of the Nation.

The changes are reflected in the size of the electric bill that practically every family in the Nation receives each month. Although the bill payer may be unaware of the rapid increases in the price of coal, of borrowed funds, and of pollution control, he is keenly aware of the results in his electric bill.

For some consumers of electric power, the Nation at large shares a portion of the cost of pollution control and other investments in new facilities through reductions in tax liabilities on profits.

In recognition of the view that the cost of nationally imposed requirements for national benefits should be borne by all the people in the Nation, the Congress provided, in the Tax Reform Act of 1969, Public Law 91-172, a provision for a 5-year amortization for investments in pollution control equipment.

A similar philosophy is reflected in the accelerated amortization provisions the Congress has provided for the cost of rehabilitating low-income housing, railroad rolling stock, coal mine safety equipment, and on-the-job training and child care facilities. Accelerated amortization was provided earlier for the private electric utility industry in the 5-year write-off allowed for generating facilities installed to service defense needs during the Korean conflict. (See appendix A for details on Federal legislation; appendix B for details on financial data.)

The Government has also made other tax concessions available to private industry in an effort to deal with the problem of unsatisfactory performance by the economy or to achieve some other objective.

A second classification of aid to private investment involves the investment credit of Public Law 87-834 and subsequent acts to encourage creation of new jobs.

In the category of liberalized depreciation rules, these include the guideline lives depreciation provisions of July 12, 1962; to spur investment in new facilities, the sum-of-years depreciation factors initiated in 1954 and the present administration's asset depreciation range rules ratified in Public Law 92-178 of December 10, 1971, to liberalize capital recovery opportunities.

Each private firm determines for itself the most advantageous way to engage these incentives which have been provided through the tax laws and regulations.

For the privately owned electric utilities, these incentives have generated more than \$5 billion in tax credits and other reductions in payments to the Federal Government. At the end of 1972, the accumulated deferred income taxes and the accumulated investment tax credits amounted to more than \$3.4 billion. The difference has already been used on a pro rata basis to reduce operating expenses of the firms. By having these sums available for investment in facilities, rather than borrowing new funds at high interest rates, additional benefits can be realized.

In a statement before the Ways and Means Committee last year, one electric utility indicated the tax provisions stimulate very desirable expenditures for reliability of service and improved pollution abatement.

The total tax effect of four of these provisions for this firm was equal to 19 percent of the total \$166 cost (with carrying charges) of a \$100 investment in a fossil-fired electric powerplant, or 31 percent of the basic \$100 investment.

Because, by law, a utility is entitled to a fair return on its investment, one that is adequate to maintain its financial integrity and attract additional capital, the total requirements are reflected in the price the consumer pays for electricity.

To encourage and achieve various nationally desirable objectives, part of the cost of investment in private industry is transferred to the general public through reductions in liabilities for payments to the Treasury.

This is not the case for investments by the Tennessee Valley Authority.

Of course, the Tennessee Valley Authority is not a private firm and attempts at comparison bog down in details. Yet the investments paid for by the consumers of TVA power have the identical general public beneficial effects as those by private industry on control of pollution, providing of jobs, and improving the total economy of the entire Nation. Therefore, differences in the purpose, function, and control make providing the exact same advantages impossible.

The TVA, for example, has no profits subject to Federal taxes. Under the law, all, not part, of TVA income surplus to the requirements of the system would go to the Treasury.

The TVA is wholly owned by the United States. Any appreciation of the system, any accumulation of property or equipment, accrues to the United States. Yet, these enhancements are now totally paid for by charges to the users of TVA power.

To put the TVA consumers on a comparative basis in respect to environmental improvement with the general investments paid for by consumers of privately produced electric power, this legislation makes a recognition of the cost of federally required air and water pollution control programs, and provides credits against required Federal payments.

The credits would be for equipment installed to meet various standards imposed by legislation which was unanticipated at the time of the 1959 TVA Self-Financing Act. (See appendix C for estimate of TVA cash requirement under the proposal.)

Although no appropriations would be required under this proposal, the effect would be to afford consumers of TVA power with a treatment similar to that of privately owned facilities in regard to the pollution control and other investments. That is, investments would result in a reduction of liabilities for payments to the Treasury. Cost of operation of the facilities would still be totally borne by consumers of TVA power. The details of TVA power operations have been established by the Congress after extended debates through the years.

I might point out that at the end of 1973, the TVA's power assets were \$4.507 billion. Total appropriations have been \$1.404 billion. Although the system has made total payments to the Treasury of \$992.9 million, the balance of appropriations was \$1.035 billion. The section 15 borrowed funds, which will be retired from revenues from consumers, totaled \$2.535 billion. Consumers have provided revenues for payments to the Treasury of \$992.9 million plus the revenues for the retained earnings of \$823.7 million or a total of \$1.815 billion.

So it is evident that TVA has succeeded to the highest expectations of those that were inspired in 1933, to put together a vast enterprise that would be so helpful, and growing to a great national asset. I include as a part of my statement, three appendixes providing details relating to the proposal.

APPENDIX A

FEDERAL POLICIES PROVIDING TAX INCENTIVES TO OWNERS OF AND/OR CONSUMERS FROM PRIVATELY OWNED ELECTRIC UTILITIES

To encourage various national objectives, reductions in liabilities for taxes have been provided through three basic programs—accelerated depreciation, liberalized depreciation and investment tax credits.

The encouragement of capital expansion, the creation of new jobs, and the sharing by the general public of the nationally required improvements to control pollution are the reasons which have been cited as these various incentives were approved.

Although investments by a public facility, such as the Tennessee Valley Authority, achieve the same desirable goals as those by private industry, there has been no recognition of the investment made by the TVA.

Early accelerated depreciation and liberalized depreciation were provided by the Internal Revenue Code of 1954. Section 167 provided liberalized depreciation by allowing a faster rate of depreciation during the early years of life of facilities. This applies to all new facilities at the option of the company.

Section 168 of the 1954 Code provided for an accelerated 60-month depreciation for the facilities constructed under the emergency legislation to encourage private firms to expand to provide electric power during the Korean Conflict. The Office of Defense Mobilization certified facilities valued at \$1.777 billion eligible for Section 168 which allowed the companies to depreciate these facilities over 5 years in place of the 33½-year life which was normally used.

The next liberalization of depreciation rules was provided by Revenue Procedure 62-21, issued by the Treasury Department July 12, 1962, to spur business investment. This allowed electric utilities to depreciate facilities over 28 years in place of the former guideline life of 33½ years.

The investment tax credit was authorized by P.L. 87-834, to provide credit for investment in certain depreciable property, signed October 16, 1962, as part of a program to stimulate the future economic growth of the United States and lessen the chances for recessions. For privately owned electric utilities this provided a 3 percent credit against tax liabilities for new investments in facilities. For unregulated industries, the credit was 7 percent.

P.L. 90-364 of June 28, 1968, the Revenue and Expenditure Control Act, included facilities for pollution control in a category for special tax treatment. Although the legislation ended the existing tax exemption on the interest from industrial development bonds of more than \$1 million, exemptions were retained for air or water pollution control abatement facilities and for certain other facilities. As all interest rates have accelerated, this provision is getting renewed attention from electric utilities and other industry.

The investment tax credit was repealed by the Tax Reform Act of 1969, P.L. 91-172, but the Congress recognized the need for special consideration of pollution control expenditures.

House Report 91-413, from the Ways and Means Committee, stated:

"Congress has addressed itself to the air and water pollution problem in legislation which it has passed in recent years. This legislation has laid a foundation for dealing with the pollution problem. . . . In effect, private industry is being asked to make an investment which in part is for the benefit of the general public. . . . At the present time, companies which install antipollution equipment involving property of a type for which the investment credit is available receive, in effect, an incentive through the investment credit for dealing with the pollution problem. . . . In view of the possible un-desired effect on pollution control of repealing the investment credit and the increasing magnitude of the air and water pollution problem facing the Nation today, your committee believes it is appropriate to provide an incentive to private industry for antipollution efforts. However, it believes it is more appropriate to permit the rapid recovery of the costs involved, rather than to permit a return in excess of total costs. Accordingly, your committee's bill provides that the costs of new pollution control facilities (which are appropriately certified by the relevant State and Federal authorities) may be amortized over a 5-year period."

The credit is available for a five-year period for pollution control equipment installed at existing facilities. Other incentives have been more widely engaged by industry.

Problems in the economy during 1971 resulted in additional changes in the tax procedures for private firms that year.

The Administration adopted new liberalized depreciation schedules (Asset Depreciation Range—June 22, 1971) for business property and equipment which allowed alteration by 20 percent of the minimum guideline life rules for property which had been shortened in 1962.

In response to Administration requests, the Congress adopted the Revenue Act of 1971, P.L. 92-178, which was signed Dec. 10, 1971.

This reinstated the investment tax credit with an increase of 33½ percent for electric utilities—from 3 percent credit to 4 percent credit. House Report 92-533 states.

“Your committee’s bill raises the rate for public utility property to 4 percent. In part, this is provided because of the increasing problem many utilities are encountering in raising the capital required for modernization and expansion.”

The Report states the general purposes of the legislation as:

- put our present lagging economy on the high growth path.
- increase the number of jobs and diminish the high unemployment rate.
- relieve the hardships imposed by inflation on those with modest incomes.

APPENDIX B

VALUE OF TAX INCENTIVES TO PRIVATELY OWNED ELECTRIC UTILITIES

The data published by the Federal Power Commission does not isolate tax incentives for pollution control equipment from the tax incentives provided privately owned electric utilities for other purposes (job development, stimulation of the economy, et cetera). Neither does the data isolate the share of credits provided for pollution control from other facilities.

The most recently published FPC summary, *Statistics of Privately Owned Electric Utilities in the United States, 1971*. (FPC 1971) indicates the accumulated investment tax credits and deferred¹ income taxes held on Class A and B electric utilities to be more than \$3.037 billion at the end of 1971. (Table 1, FPC 1971)

This is before the full effect of the liberalized depreciation and increased investment credit of P.L. 92-178 were available.

In response to an inquiry, the FPC staff reports that accumulations increased to \$3.589 billion at the end of 1972.

The accumulations exclude the credits and deferred taxes which were “flowed through” to income at the time received as well as the funds which have already been transferred to the income accounts on the basis of the pro rata life of the equipment.

A conservative estimate of the funds generated for use by private electric utilities from accelerated depreciation, liberalized depreciation and investment tax credit is \$5 billion through the end of 1971.

This would include:

Amount certified for 5-year depreciation under section 168, Tax Code of 1954.....	Billions \$1. 777
Amount investment tax credit (p. 737, FPC 1971).....	1. 186
Estimate of liberalized depreciation (accumulations from Table 1, FPC, 1971, increased to reflect same percentage “flow through” as investment credit, p. 737).....	2. 370
Total.....	5. 333

The FCP report indicates the accumulations from accelerated depreciation use are generally decreasing. Accumulations from investment credits and liberalized depreciation are increasing.

The accumulations of the liberalized depreciation provision increased \$242,748,-000 from 1970 to 1971. From 1971 to the end of 1972, the increase was \$366,992,-000 or more than 51 percent above the increase of the previous year.

The increase in accumulation of Investment credit from 1971 to 1972 was 100 percent greater than that of the previous year.

¹ “Deferred” may be a poor word to describe the advantage of tax incentives. Some economists maintain the taxes are deferred only in the case of a firm which makes a single investment in facilities with no subsequent additions or expansion. In this case, the funds represent an interest-free loan. For an industry which continues to add to facilities, this amounts to a permanent interest-free loan, sometimes described as a gift. The unanimous Supreme Court decision of May 7, 1973, in the FPC vs Memphis Light, Gas & Water Division stated: “It soon became apparent that accelerated depreciation in practice resulted in permanent tax savings. Because most utilities had growing or at least stable plant investments, the depreciation allowances from additional and replacement equipment offset the declining depreciation on existing property.”

At the time the Tax Reform Act of 1969 was considered, the Ways and Means Committee was concerned about the revenue reducing results from expanded use of the flow-through system for dealing with accelerated depreciation in the utility industry. The legislation fixed the existing system for utilities and set rules for changing from one system to another.

Because flow-through reduces operating income requirements and becomes the base for further reductions in rates, thus reducing again taxable income and income tax, the Committee was advised that the trend toward flow-through treatment of accelerated depreciations could shortly reduce tax revenues by as much as \$1.5 billion to \$2 billion a year. (House Report 91-413)

The use of increased depreciation for tax purposes has two other beneficial results for private utilities. Distributions of profits to stockholders can be up to 100 percent tax-free in certain situations.

The accumulations of the taxes and credits can be invested in the property to save the interest which would be paid if equal sums were borrowed. On the basis of \$3.5 billion accumulations at the end of 1972, the interest benefit at 8 percent would be \$280 million a year.

APPENDIX C

REDUCTION IN TVA CASH REQUIREMENTS BY H.R. 11824, H.R. 11929 COMPARED TO PRESENT LEGISLATION,¹ ASSUMING \$150,000,000 CERTIFIED EXPENDITURES ANNUALLY—ASSUMPTIONS USED TO ESTIMATE FINANCIAL EFFECTS

[In millions of dollars]

Fiscal year	Total savings in Treasury payments ²	Interest savings ³	Total reduc- tion cash requirements
1974	83.4		83.4
1975	82.9	6.5	89.4
1976	79.7	13.2	92.2
1977	78.5	19.9	98.4
1978	77.3	26.8	104.1
1979	76.1	34.0	110.1
1980	74.9	41.3	116.2
1981	73.7	48.9	122.6
1982	72.5	56.8	129.3
1983	71.3	65.0	136.3
1984	70.1	73.4	143.5

¹ H.R. 11824, H.R. 11929: Would allow an amount equivalent to the properly certified pollution facilities expenditures in any 1 year to be applied in the following year first to cover the dividend payment due with the remainder, if any, applied to the scheduled appropriation repayment of \$20,000,000. If such pollution facilities expenditures exceed the scheduled dividend and appropriation repayments the remainder may be applied in further reduction of the appropriation investment to be repaid. For purposes of this estimate certified pollution control expenditures are estimated at \$150,000,000 a year.

² Dividend rates for Treasury payments: Actual rate of 6.12 percent in fiscal year 1974, estimated rate of 6.2 percent for fiscal year 1975, and estimated rate of 6 percent for each year thereafter.

³ Interest savings: These savings are based on estimated power bond interest rate of 7½ percent on bonds which would not be issued because the savings in Treasury payments were reinvested in the system.

Mr. JONES. Our colleague from Tennessee, Mr. Baker, has a statement.

Mr. BAKER. Mr. Chairman, I appreciate the opportunity to speak today to the members of the Committee on Public Works on H.R. 11824 and H.R. 11929. These two identical bills sponsored by 18 Members of Congress from the Tennessee Valley area would provide credits to the Tennessee Valley Authority for expenditures for environmental control facilities.

The bills would amend section 15d of the Tennessee Valley Authority Act of 1933. The amended section would then provide that expenditures for certified pollution control facilities would be credited against payments TVA makes to the Treasury as a return on the appropriation investment in power facilities and as repayment of the appropriation investment in power facilities. Both of these payments are required by subsection (e) of section 15d. The TVA now

bears the full cost of pollution control facilities for its powerplants required by the Clean Air Act and the Federal Water Pollution Control Act.

Everyone realizes that the price of fuel for the electric power industry has increased drastically. The price of coal has risen since 1967, and with the shortage of petroleum, coal will be used more in the future for the generation of electric power. The entire electric power industry is now faced with the prospect of much higher fuel costs and high interest rates on new capital.

The effects of the general energy shortage are now being felt by all consumers in our Nation. These changes are reflected by the rising utility costs felt by the constituents in my district in Tennessee. The typical homeowner may or may not know of the increased costs of pollution control, coal or capital funds, but he can see the increase in his electric bill.

The credits provided under these measures for the Authority would be somewhat similar to those already provided by the Congress for pollution control equipment and other investments by private industry. Through enactment of various measures, the Congress has recognized that relief should be granted to private industry for investments which were required for the benefit of the general public, such as facilities to enhance the environment.

Because of the national requirements and benefits to the public, all Americans contribute to the attainment of this environmental goal through tax advantages to industry and through other programs. In theory, an industry is able to make the required control improvements without the total cost being passed on to either the owners, workers, or customers of the particular firm. However, the consumers of electric power produced by the Tennessee Valley Authority now bear the full cost of these improvements.

In order to put TVA consumers on a more equitable basis in respect to environmental facility expenditures, the measure can go a long way toward establishing an equitable method to provide environmental facilities for TVA and to hold down the rates paid by the consumer.

Mr. JONES. Thank you, Mr. Baker.

We have today representing the Tennessee Valley Authority, the witnesses, Hon. Aubrey J. Wagner, Chairman, Board of Directors, Tennessee Valley Authority. He will be accompanied by Mr. James E. Watson, Manager of Power, Tennessee Valley Authority.

Gentlemen, will you come forward, please?

I might state to the committee that one of the first times that I ever testified before a congressional committee I was with Mr. Wagner. He had been with TVA since he graduated from college. He was in charge of transportation and he has spent his entire life, after his education, he completed his education with the TVA, and he has certainly been a dedicated, knowledgeable, and useful public servant, and along with him is Mr. Jim Watson who is recognized as one of the great outstanding authorities on power management.

Also, we have Mr. Bob Marquis, General Counsel of the TVA, Mr. Meeks, TVA's power financing expert, he knows where and when we can get the money and how much; and, also Mr. Herb Sanger, of the General Counsels Office.

Gentlemen, we appreciate your attendance, and I would think it would be in order that the statements made by the witnesses be completed, and then we would proceed with our interrogations.

Mr. Wagner?

STATEMENT OF HON. AUBREY J. WAGNER, CHAIRMAN, BOARD OF DIRECTORS, TENNESSEE VALLEY AUTHORITY, KNOXVILLE, TENN.; ACCOMPANIED BY JAMES E. WATSON, MANAGER OF POWER, TENNESSEE VALLEY AUTHORITY, CHATTANOOGA, TENN.; ROBERT H. MARQUIS, GENERAL COUNSEL OF TVA; H. W. MEEKS, POWER FINANCING ADVISER; AND HERBERT S. SANGER, DEPUTY GENERAL COUNSEL OF TVA

Mr. WAGNER. Thank you very much, Mr. Chairman.

I am pleased that you remembered that first hearing. It was my first hearing, also. I was scared to death. I did not know what in the world I was going to say.

Mr. JONES. You were not as scared as I was.

Mr. WAGNER. I have enjoyed our relationship with you all through the years, and certainly through the TVA.

Mr. Jones is recognized as an eminent authority on TVA, and not only in the region, but throughout the area.

Mr. JONES. You may continue in that vein, if you so desire.

Mr. WAGNER. Thank you, Mr. Chairman.

Mr. Chairman, it is indeed a pleasure to appear and testify concerning H.R. 11929. Our testimony on this bill not only gives us an opportunity to examine the bill, but also to discuss TVA's power systems operations both specifically and in relation to their role in TVA's broader responsibilities for total resource development in the Tennessee Valley region historically and in light of today's energy problems and environmental concerns.

As you know, the Tennessee Valley Authority was created by Congress in May 1933, to work with people in restoring an economically depressed and environmentally depleted region, for their own benefit and the benefit of future generations.

To accomplish this goal, Congress assigned TVA responsibilities in navigation and flood control, in reforestation and proper use of marginal land, in agricultural and industrial development, and in serving national defense, especially by operating Government properties at Muscle Shoals, Ala.

The agency was also given the job of promoting the public interest through the wider and more economical use of electric energy and of selling this energy to the consumer at the lowest feasible price.

When TVA began its work, the Tennessee Valley was an agricultural region. Two-thirds of its people gained a livelihood from marginal farming. They grew corn, cotton, and tobacco, mainly, and these crops, after harvest, left the lands bare to the pounding winter rains. The rains washed millions of tons of sediment into the Tennessee River, creating gullies that scarred the countryside.

During these periods of heavy rain the river would add to the toll by leaping its banks, flooding towns and farms, and leaving behind ruined men and ruined land. And, when the Tennessee River was not flooding, it was treacherous to navigate because of its shoals and rapids.

As a result of these conditions, thousands upon thousands of people left the region of their birth and moved to other sections of the country seeking opportunity they could not find at home.

These conditions are no longer with the people of the Tennessee Valley region. The eroded land, the overcut forests, the devastating floods, the desperate poverty that marked and defined the valley of yesterday have yielded to a joint effort of farmers, businessmen, industrialists, local, State, and Federal officials, and TVA.

Through this joint effort, the valley has been electrified, its farms and forests rebuilt, and a balanced economy which includes industry and commerce alongside a productive agriculture has been created.

The accomplishments achieved under this partnership are impressive. The per capita income of the region has risen from 45 to 75 percent of the national average. Employment in manufacturing has expanded by more than 500,000 jobs in the 201-county watershed and power service area served by TVA. The navigable river is used more each year to transport raw materials and finished products, serving as a highway linking the valley with other parts of the Nation. Those who have stayed on the land have used TVA-developed fertilizers and sound farming practices to become more prosperous than ever before.

Outmigration has virtually come to a halt because of these developments, and people are no longer forced to leave the region to find employment. They can find jobs at home if they choose to stay.

Electricity has played a major role in all of these positive changes and has helped the valley to evolve from muscle and mule power over to electric power, reducing the backbreaking toil once required to produce food, fiber, and goods. Electrification also lightened the workload of the housewife by replacing the wood stove with the electric range, the scrubboard with the electric washing machine, the broom with an electric sweeper, the icebox and the springhouse with the refrigerator and freezer, the kerosene lamp with the electric light.

When TVA began creating the electric power system in the 1930's, there was some question of whether the people would use all the electricity produced by the agency's dams. At the time only three farms out of every hundred had electric service, and people were not familiar with the benefits of electricity.

The question was quickly answered because city and farm dwellers soon put this form of energy to work and have been using it increasingly since then.

Today, TVA knows that the region's people will use electricity in their homes, schools, farms, businesses, and industries, and the agency is presently expanding its system to meet these demands.

There have been many changes in the Tennessee Valley region since the 1930's, but one thing that has not changed is TVA's concern for the environment. In the early days we did not use the term environment, but such terms as conservation and the wise use of resources, and sometimes resource development.

The objectives, however, were the same, and TVA has demonstrated its belief in environmental quality in many ways. For example, although the valley is much more heavily populated than in 1933, and although there has been extensive industrial growth along the waterway, the river's waters are generally of higher quality than they were before the reservoirs were created.

Only a few years after TVA was in operation, we surveyed the waters of the valley to determine their quality and to identify problem areas that existed. Based in part on the results of the survey, TVA determined that antipollution covenants should be contained as a condition in deeds in which TVA transferred land to others for developmental purposes.

In the 1940's before TVA became a major coal purchaser, we surveyed the effects of strip mining in the valley area. Using this information, we established initial experiments and demonstrations of reclamation techniques. We urged State action to control and regulate strip mining, and we are still urging effective strip mine regulation—on a comprehensive basis by State and Federal legislation.

In 1965, TVA adopted a policy requiring reclamation under its coal purchase contracts. We took this action to demonstrate the effectiveness of reclamation requirements and to assure the reclamation of all areas being surface mined to supply coal to TVA.

During the years, TVA has strengthened these contract provisions. However, we still regard this action as a temporary alternative to legislative requirements applicable to all strip mining operations.

When TVA began building its coal-fired steamplants to meet increasing demands for electricity, we began studies and research on the effect of coal combustion on air quality, using, among other things, the skills and knowledge of scientists and chemical engineers at our National Fertilizer Development Center. Through their work we have learned a great deal about emissions from steamplants, and have shared our knowledge with others.

In the past few years we have cooperated with the Environmental Protection Agency in major research and testing programs seeking to develop scrubbing processes to remove sulfur dioxide from stack gases. TVA is in the process of installing a large experimental scrubber on a 550,000-kilowatt generating unit at Widows Creek steamplant in northern Alabama to demonstrate our commitment to develop a full-scale, workable, and environmentally acceptable scrubber.

We are in the process of upgrading fly ash collection systems at our plants. We are also focusing our attention on the effects of heated water discharges from powerplants on reservoir ecology.

When discussing environmental programs at steamplants, it should be remembered that the polluting effects of burning coal at central power stations can be attacked in many ways that would be impossible if this coal were still burned in thousands and thousands of individual homes and businesses. Since electric heat has replaced coal heat in valley residences, the smoke and fumes that once blanketed our cities and towns have been greatly reduced.

Even though we feel that we have made great strides in solving problems in the past, elements of the problems still exist and require our attention. Flooding has been generally controlled, but, as indicated by the flood of March 1973, more flood control is still needed.

Efforts to keep developments out of flood plains must be increased. Erosion has been greatly reduced, but there are still problems along roads and in some construction areas. Reforestation and timber management programs have been effective, but the Nation's need for lumber continues to grow.

TVA, along with others, must work to make sure that timber supply advances to meet this need. The TVA area has an abundant supply of electricity, but great effort is and will be required to assure that supply keeps pace with demand.

Unemployment is not now a serious problem in the Tennessee Valley region, but effort is still needed to produce jobs—not only to reduce still further the number of those who cannot find a job but to provide work for those youngsters growing up and in school today who will enter the work force in the years ahead.

By virtually every measure which can be applied, the quality of the total environment in the Tennessee Valley is better now than it was in 1933.

However, substantial investment of money will be required to assure that the additional growth and developments required to meet the needs of the region's people will not impair that environmental quality.

TVA has sought, and is seeking a balance which assures the total quality of the human environment. Jobs do not necessarily mean pollution, and a clean environment does not necessarily mean a retarded economy.

A balance recognizing the twin requirements of a healthy economy must be achieved.

As we understand H.R. 11929, the bill is intended to help the TVA region achieve this balance by providing needed pollution control facilities. Later testimony will discuss the details of the bill as it would apply to TVA.

H.R. 11929 would modify the present financing system which Congress established for TVA in 1959. However, the 1959 amendment was also a modification of earlier methods of TVA financing. Although the original TVA act contained a provision for issuance of bonds, the act basically contemplated that capital investments in the power system would be made with appropriated funds. Operations were to be paid for out of revenues from the sale of power. However, even under these original provisions, substantial capital investments were made in the power system from power revenues.

A small amount of bonds authorized by the original section 15 of the TVA act was issued in 1939 to acquire properties of electric utilities in the TVA area. Additional bonds, authorized by amendments to the act in sections 15a and 15c, were issued in the fiscal years 1939 through 1941. They also were generally used to acquire properties owned by private utilities. These bonds, which were sold to the Treasury and the Reconstruction Finance Corporation, have been redeemed.

The Appropriations Act of 1948 contained a requirement for TVA to repay appropriation investments in the power system over a 40-year period. This requirement remained in effect until 1959 when the current section 15d of the TVA act became law. From these changes it can be assumed that Congress has never felt that the financing of TVA was a question that could be answered for all time by a single law or amendment.

Congress has been continuously alert to changes in the valley region or the Nation which require modifications in TVA financing.

H.R. 11929 is evidence that Congress wishes to determine if further adjustments in TVA financing are required. I should point out, Mr. Chairman, that the administration has taken the position that enactment of the bill would not be in accord with the President's program for reasons described in reports which I understand the Treasury Department and the Office of Management and Budget have made to this committee.

With me today is Mr. James E. Watson, TVA's Manager of Power.

With the committee's consent, he will present testimony on the operation of the TVA power program, current and projected effects of the environmental requirements on the power system, and the details of the 1959 amendment to the TVA act as that amendment will be affected by H.R. 11929.

Thank you.

Mr. JONES. Thank you very much, Mr. Wagner.

Mr. Watson?

Mr. WATSON. Mr. Chairman, members of the committee, the TVA power system, the Nation's largest, supplies power in most of Tennessee, in northern Alabama, in northeastern Mississippi, in southwestern Kentucky and in small portions of Georgia, North Carolina, and Virginia. This area of approximately 80,000 square miles has a population of about 6 million.

Within this area, TVA furnishes power to 160 municipal and co-operative electric systems. TVA, as the wholesaler of power to these distributors, provides the generation and transmission systems while local systems provide the distribution facilities and handle the resale of the power to the ultimate consumers.

In addition, TVA serves directly 48 industrial customers having large or unusual power requirements and several Federal installations including AEC facilities at Oak Ridge, Tenn., and Paducah, Ky., NASA's Marshall Space Flight Center at Huntsville, Ala., and the Air Force's Arnold Engineering Development Center at Tullahoma, Tenn.

TVA supplies power to the distributors under standard form power contracts. The contracts contain standard provisions specifying the wholesale rates, resale rates, and conditions under which the power is to be distributed. The standard wholesale rate schedule includes a demand charge, an energy charge, and a minimum bill charge. It also includes load density and industrial sales adjustment clauses.

Under the contracts, TVA determines and makes quarterly such adjustments, if any, as may be required in the demand and energy charges of the wholesale rate schedule (with corresponding adjustments in other rate schedules) to enable TVA to meet all requirements of the TVA Act and the tests and provisions of its bond resolution. The resale rates under which the distributors serve the ultimate consumers are stipulated in the power contracts and are revised from time to time to reflect changes in cost, including changes in the wholesale cost of power.

As a supplier of power, TVA's objective is the advancement of the national defense and the physical, social, and economic development of the area in which it conducts its operations by providing that area with an ample supply of electric power. In providing this ample supply of power, it has been necessary for TVA to add substantially to the 800,000 kilowatts of generating capacity that served the area in 1933.

TVA's power generating facilities now include 29 hydroplants, 12 steamplants, including the Allen plant leased from Memphis, and 2 gas-turbine installations. Twelve hydroplants owned by subsidiaries of the Aluminum Co. of America also are operated as part of the TVA system, and eight hydroplants of the U.S. Corps of Engineers are operated in coordination with the TVA system.

In addition to the power generation facilities, the TVA power system includes over 16,500 miles of transmission lines and 630 substations. Approximately 1,500 miles of these transmission lines are extra-high-voltage, 500,000-volt, lines.

TVA's present generation capacity of 22,039,015 kilowatts is composed of 3,192,630 kilowatts from hydro facilities, 17,749,585 kilowatts from fossil-fueled steamplants, and 1,096,800 kilowatts from combustion turbines. The capacity from Alcoa and the Corps of Engineers adds 423,715 kilowatts and 819,666 kilowatts, respectively, of additional capacity, making a system total of 23,282,396 kilowatts.

In addition, to meet the growing power requirements of the Tennessee Valley area, we now have 17,830,960 kilowatts of additional capacity under construction or authorized. This includes 1,530,000 kilowatts from a pumped storage hydro facility and 16,300,960 kilowatts from nuclear plants. The nuclear capacity being added represents 13 generating units of more than a million kilowatts each.

We anticipate that commercial operation of the first of these, Browns Ferry Unit 1, will begin soon. We are now nearing completion of the startup tests which are required before it can begin commercial operation. The above generating plant additions are scheduled to increase system capacity to above 41 million kilowatts by the end of 1982.

Thus, to continue to provide ample power to meet the region's growing requirements, TVA must almost double its generating capacity in less than 10 years.

Although nuclear powerplants will supply most of the additional power needed in the region over the next 10 years, coal presently accounts for about 80 percent of system power generation. During fiscal year 1973, coal-burning plants generated 84.4 billion kilowatt hours out of a system total of 109.1 billion kilowatt-hours. This required the use of 37.5 million tons of coal.

The average cost per ton of coal burned in 1973 was \$7.46, up 95 cents from the previous year, thus adding \$34 million to TVA's overall fuel bill.

However, the average cost per ton figure does not fully reflect current increases in market price, since it includes coal delivered under long-term contracts entered into several years ago when prices were much lower.

For example, the price of our most recent coal purchase was \$11.30 a ton and recently we have heard reports that some buyers are paying between \$20 and \$30 a ton for coal. I might add that such substantial increases in the cost of coal was the most significant factor necessitating the January rate adjustment.

The following statistics help to highlight the results of TVA's efforts in providing low cost power to area consumers. TVA power sales in fiscal year 1973 set a new record, topping 100 billion kilowatt-hours for the first time. Power deliveries in 1973 were 63,822 million kilowatt-hours, a 10-percent increase, to municipalities and coopera-

tives; 21,865 million kilowatt-hours, a 12-percent increase, to the large industries TVA served directly; and 17,694 million kilowatt-hours, a 35-percent increase, to Federal agencies.

An additional 92 million kilowatt-hours was sold to electric utilities, bringing total TVA sales to 103,473 million kilowatt-hours. Whereas the average home use of electricity was about 600 kilowatt-hours per year in 1933, it has grown to 15,340 kilowatt-hours as of the 12 months ended November 30, 1973.

This use reflects the fact that one-third of all homes in the region are electrically heated, and more than one-half are partially or completely air-conditioned. For this use, the average residential rate was 1.32 cents per kilowatt-hour. Corresponding national average figures for the same period of time were 8,099 kilowatt-hours of use at a cost of 2.36 cents per kilowatt-hour.

Throughout the years, TVA has engaged in a continuing effort to develop and put into practice advanced technologies that will lower costs and improve system efficiencies and technologies. A prime example of this effort is the new underground power system control center near Chattanooga that is expected to be completed this summer.

From the control center, the entire power system—all generation and transmission facilities—will be constantly monitored, controlled and activated as necessary. Through computer technology, mathematical problems that would normally take a man 40 hours to solve will be solved in less than a second. For example, every 5 minutes the computer will "read" the generation in order to select the most economical power source, determining the need for a generation change and sending control signals to the generating plants to bring about the required change.

The importance of TVA's power program is not limited to the Tennessee Valley region. TVA's electric power system is interconnected with surrounding electric power systems through a number of high capability transmission lines. TVA has entered into contractual arrangements with a number of privately owned utility companies and cooperatives whereby various services are reciprocally provided the respective parties through these interconnections.

One of the important services included is the provision for diversity capacity exchange which allows TVA and other systems to exchange power on a seasonal basis, thereby eliminating the need for an equivalent amount of additional generating capacity on each system.

TVA is currently exchanging about 2,060,000 kilowatts of power on a seasonal basis with systems to the south, west and northwest. Peaks occurring in fiscal year 1973 graphically illustrate the utility of the exchange arrangements, TVA's summer peak use of 15,276,000 kilowatts occurred July 26, 1972, but its peak generation, which occurred July 18, 1972, was 17,009,000 kilowatts, when the TVA system was delivering exchange power.

On the other hand, the peak winter use on the TVA system occurred January 12, 1973, and amounted to 18,888,000 kilowatts. But the winter generation peak was 16,883,000 kilowatts on January 29, 1973, over 2,000,000 kilowatts less, when TVA was receiving exchange power.

These contractual arrangements between TVA and other electric power systems also include such services as the concurrent exchange of power and provisions for furnishing maintenance energy and emergency assistance. Emergency assistance between interconnected

systems is quite important since power can flow back and forth when needed to help relieve emergency situations that sometimes threaten the reliability of electric power service.

Practically all power systems east of the western United States, with the exception of those systems in Texas, and systems covering much of Canada are linked together by a large network of interconnections. Since TVA constitutes a sizable portion of this network, the TVA power system adds substantially to the reliability of the Nation's power supply.

To help assure adequate electric power not only for the consumer of the Tennessee Valley region but also for the entire country, TVA participates in many electric power utility industry activities, such as the National Electric Reliability Council (NERC), North American Power Systems Interconnection Committee (NAPSIC), Electric Power Research Institute (EPRI), Atomic Industrial Forum (AIF), and many other such activities that influence the country's power industry and electric power service to the Nation's citizens and industries.

We are particularly enthusiastic about one cooperative effort in which TVA is a leading participant—that is the Liquid Metal Fast Breeder Reactor (LMFBR) project. TVA is participating with the AEC, Commonwealth Edison Co. of Chicago, Breeder Reactor Corp., and Project Management Corp. in the construction and operation of this Nation's first large-scale demonstration project of this type.

The plant, which will be in the range of 350 to 400 megawatts, is presently proposed to be located on the TVA system near Oak Ridge, Tenn. The project is estimated to cost about \$700 million with pledges amounting to about \$250 million from all segments of the utility industry, including privately, publicly, and cooperatively owned companies.

Of this amount, TVA has pledged about \$22 million over a 10-year period on behalf of itself and its distributors and will provide approximately \$2 million in nonreimbursable services to the project. Since liquid metal fast breeder reactor technology appears to have the best potential for meeting future energy requirements in an economical and environmentally acceptable manner, the experience and knowledge gained through work on this project should be quite beneficial to TVA and the Nation.

I would like to discuss briefly the financing of TVA's power operations. As the subcommittee knows, the 1959 amendment to the TVA Act provided that TVA shall charge rates for power which will produce gross revenues sufficient to cover all costs of operation, maintenance, and administration; to make payments to State and local governments in lieu of taxes; to pay the debt service on borrowings; to make repayments to the Treasury of the appropriation investment plus payments as a return on such outstanding investment; and to provide such additional margin as the Board may consider desirable for in-power system assets and for other purposes connected with TVA's power business, having due regard for the primary objectives of the TVA Act, including the objective that power shall be sold at rates as low as feasible.

Revenues from the sale of power continue to pay for all the system's operating expenses and for some construction, but proceeds from borrowings provide the substantial portion of the capital needed for new facilities.

The current investment in TVA power assets as of December 31, 1973, was approximately \$4,507.9 million, made up of \$1,035 million of appropriations, \$808.4 million of retained earnings, and \$2,535 million of outstanding borrowings.

Since December 31, the outstanding borrowings have increased to \$2,565 million. This includes \$2,125 million in power revenue bonds sold to the general public, \$340 million of short term notes sold to the general public, and \$100 million of short term notes payable to the Treasury.

When the first bonds were issued under the 1959 amendment, the the interest cost to TVA was 4.44 percent. However, for several years such interest costs have almost doubled that earlier interest cost. During fiscal years 1973 and 1974, the interest costs to TVA on seven bond issues have ranged from a low of 7.39 percent to a high of 8.10 percent. Similarly, the interest cost on short term power notes has increased substantially, reaching an all-time high of 9.55 percent on a \$60 million issue sold in August 1973.

These high interest rates, rising construction costs, and the large additional investments required to build power system facilities that will provide sufficient capacity have contributed to a rapidly increasing interest expense. Interest charges have grown from \$39 million 5 years ago to an estimated \$180 million this year. In addition to increased fuel cost, greater interest expense has been one of the major factors requiring adjustment to TVA's power rates.

In discussing the financing of TVA's power system, it should be noted that for this fiscal year—1974—the payments to the Treasury which TVA is required to make under the 1959 amendment will total about \$83.4 million. This represents \$20 million as the annual repayment of Federal appropriations used in the past to build the power system, plus approximately \$63.4 million as the return or dividend on the remaining appropriation investment.

The current method of financing capital investments in the TVA power system—which utilizes the sale of bonds to the general public—was established in 1959 by enactment of the present section 15d of the TVA Act.

As originally passed, section 15d authorized TVA to have outstanding at any one time \$750 million in bonds. As time passed and needs for power financing increased, this ceiling was raised to \$1.75 billion in 1966 and \$5 billion in 1970.

In addition to authorizing issuance of a specific amount of bonds, this section contains several other items, some of which are not directly related to bond financing. For example, with certain specific exceptions, the 1959 amendment requires that TVA make no contracts for the sale or delivery of power which would make it or its distributors, directly or indirectly, a source of power supply outside the area for which TVA or its distributors were the primary source of power supply on July 1, 1957. The exceptions involve exchange power arrangements, certain additional designated cities, a 5-mile strip around the periphery, and the filling of emergency defense needs.

Section 15d provided that the bonds would be payable solely from net power proceeds. Basically, net power proceeds are defined as net income before depreciation and interest, plus net proceeds from any sale of facilities. The section also authorizes TVA to enter into covenants with bondholders, a power which is essential if bonds are to be well received in the marketplace.

Proceeds from the sale of bonds are authorized by the amendment to be used, among other things, for the addition of generating units to existing power-producing projects and the construction of new power-producing projects.

An interesting feature of section 15d and one which is not usually applicable to bonds issued by a Federal agency, is contained in section 15d(b). Under this provision, bonds issued by TVA under section 15d shall not be obligations of, nor shall payment of principal or interest be guaranteed by, the United States.

The effect of this provision is that bonds issued by TVA do not increase the national debt. Purchasers of TVA bonds are, in effect, told to look to the TVA power system's revenues for their security, and no further.

Under section 15d most details relating to the form of the bonds and their issuance are left to TVA's discretion. TVA, however, is required to furnish the U.S. Treasury with the details of any proposed bond issue which will have a term of more than 1 year. The Treasury then has the right of approval as to the date the issue is to be sold and the maximum interest rates to be paid. If the Treasury disapproves an issue, it is required to purchase interim obligations up to a maximum amount of \$150 million.

The 1959 modification in financing for the TVA power system included a requirement that TVA repay the major portion of the balance of the appropriations invested in the power system. In addition, TVA is required to pay an annual return on the outstanding appropriation investment. This return, which is paid semiannually, is based upon the Treasury's computed average interest rate upon its total marketable obligations as of the beginning of the fiscal year for which the return is paid.

By June 30 of this year, TVA will have paid a total of over \$891 million under these two provisions. This sum includes more than \$686 million as a return on appropriation investment and \$205 million as repayment of appropriation investment.

The 1959 amendment also placed certain requirements on TVA as to the rates charged for electric power. Essentially these provisions are (1) rates for power must be sufficient to produce revenues to pay all expenses, debt service, the payments to the Treasury, and provide additional margin as the Board of Directors may consider desirable for investment in power system assets, and (2) in order to protect the investments of bondholders and the appropriation investment, the Board must assure that all power proceeds for each successive 5-year period, at least equal to depreciation and amortization accruals and proceeds from sale of facilities, be applied to either investment in power system assets or reduction of capital obligations.

The overall intent of section 15d is to aid TVA in obtaining funds sufficient to assure an ample supply of power. This intent has so far been achieved. The TVA power area has so far not suffered from a shortage of power during the current energy shortage because sufficient generation has been built to meet both the residential and industrial growth of power demand.

H.R. 11929 proposes to add a new section (i) to section 15d of the act. In recognition of the vastly increased investments required for pollution control, the bill would credit the amounts expended for

pollution control facilities against TVA's obligations under section 15d for payments to the Treasury. This would be accomplished by:

(1) Reducing in an amount equal to the amount actually expended by TVA during the preceding fiscal year for any certified pollution control facility the return on appropriation investment required to be paid under subsection (e) of section 15d.

(2) In any fiscal year in which the amount expended on any certified pollution control facility or facilities exceeds the required return on appropriation investment for the next fiscal year, the amount in excess of such return would be credited against the annual repayment sum and the appropriation investment would be reduced by a similar amount.

(3) If the credit for pollution control facilities should exceed amounts which could be applied under (1) and (2), then the excess would be used to reduce that portion of the outstanding appropriation investment which is required by section 15d(e) to be repaid.

A pollution control facility would be one which is a new identifiable treatment facility used in connection with a plant or other facility to abate or control water or atmospheric pollution or contamination by removing, altering, disposing, or storing of pollutants, contaminants, waste, or heat.

To be certified under H.R. 11929, such a facility first would have to be certified by the TVA Board to the Environmental Protection Agency as having been constructed or acquired in conformity with programs or requirements for abatement or control of water or atmospheric pollutants.

Then the Administrator of EPA would have to certify to the Secretary of the Treasury that the facility is in compliance with applicable environmental regulations and policies.

The effect of H.R. 11929 on TVA would, of course, depend upon the amounts of the credits which could be obtained under its provisions. However, the method by which these benefits would be obtained by TVA is quite clear. By crediting expenditures for pollution control facilities against Treasury payments, cash will be available for investments that would otherwise have to be made with borrowed money.

Therefore, TVA would have to borrow less and thereby obtain a savings in interest costs. This reduction in interest costs would further reduce the need for borrowing and expand the benefits to TVA.

In recent years the need to assure a quality environment has given rise to requirements for substantial investments in pollution control facilities at electric power generating plants. The laws and regulations which evidence the Nation's environmental concern are relatively new and subject to a variety of interpretations.

Until these laws concerning environmental controls have been further interpreted by the courts and regulatory agencies, it is not possible to precisely establish the costs which will be incurred by TVA for pollution control at its steamplants. Nevertheless, based upon our best interpretation of the laws and discussions with State pollution control agencies, we have planned a TVA program for environmental controls.

For the committee's benefit, this statement will discuss capital costs involved in this program, as well as costs we could be faced with should we not be permitted to proceed as we have planned. It should

be noted that what we are talking about here is not a minor difference in costs. The capital investment for the total planned TVA program, including investments made to date, would be \$570 million. Capital costs for controls we believe are not needed, and which we are resisting, could add as much as \$1.65 billion to this program.

Air pollution control at TVA steamplants has to date required large amounts of capital investment. The air pollution control effort centers on two key concerns: First, controlling particulate emissions; and, second, assuring that emissions of sulfur oxides from TVA steamplants are not a danger to public health and welfare.

Control of particulates, the residue from burning coal which becomes entrapped in the stack gases emitted from the plant, is and will be generally accomplished through the installation of electrostatic precipitators.

Our experience with efforts to reduce smokestack emissions of particulates started with our early steamplants and involved the use of mechanical ash collectors. As electrostatic precipitators developed as a pollution control technique, we installed them at several of our plants. As precipitator design improved, we have utilized newer designs and are now achieving much better results. Many of the earlier precipitators are being replaced or supplemented by additional precipitator units in order to meet current air quality standards. Despite the improvements in precipitator technology, there are still problems with operation.

For example, at our Bull Run steamplant the initial precipitator installation adequately handled the particulate problem. Then we shifted to a lower sulfur coal. An interesting phenomenon of precipitators is that they attain much better efficiencies when certain amounts of sulfur trioxide gas are present. Only a small amount of sulfur trioxide is produced in the combustion process but this small amount is essential.

When lower sulfur coal was used, smaller amounts of sulfur trioxide were produced and the precipitator efficiency reduced dramatically. To overcome this problem, we installed equipment to inject small quantities of sulfur trioxide into the flue gas.

However, when this equipment was ready to operate we found that the company which was to supply the liquid sulfur dioxide, could not produce an adequate supply. We are still trying to obtain an adequate supply of liquid sulfur dioxide for our Bull Run plant.

The capital cost of the precipitator control program to date has been \$62 million. Present cost projections for completion of this program indicate that at least another \$200 million will be spent before it is completed.

The control of particulates presents no basic conflicts in interpretation of applicable law. However, for sulfur dioxide control, there is some conflict of interpretation. It is clear that the Clean Air Act intends that the Federal Government assure that control of sulfur dioxide will be sufficiently stringent to protect human health and public welfare. Congress, however, recognized the need for solutions adopted to the specific and differing problems of different parts of the country, and left it up to each State to select the specific methods by which public health and welfare would be protected.

Consistent with this, TVA has designed and is implementing a sulfur dioxide emission limitation program or SDEL program. This

program is designed to assure that TVA steamplants will not be the cause of violation of national ambient sulfur dioxide standards. Compliance with the standards assures that the air that people breathe will be sufficiently clean as to pose no danger to health.

The SDEL program is based upon the fact that at TVA steamplants national ambient sulfur dioxide standards can be met except under adverse weather conditions which occur at relatively rare intervals—5 percent of the time at our “worst” plant. Our investigations around these plants have shown that the particular weather conditions which would interfere with adequate dispersion of sulfur dioxide can be predicted and an advance reduction in generation or shift in fuel can be instituted in time to prevent violation of national ambient air quality standards. At some of our plants we will add new tall stacks to increase the dispersion of sulfur dioxide and lessen the times when emissions would have to be reduced.

The total cost of this SDEL program is estimated to be about \$100 million. This cost includes several new tall stacks, fuel switching facilities, monitoring equipment, additional computers and one limestone scrubber.

The scrubber will be installed on one unit at the Widows Creek steamplant in Alabama. Although we feel that scrubbers are not the universal answer for sulfur dioxide control on existing powerplants, we determined that TVA should help advance scrubber technology by designing and installing one on a relatively large unit. The cost of this one scrubber is estimated at \$42 million.

Some persons are now attempting to interpret the Clean Air Act in such a way as to prevent TVA from being able to use the SDEL program as a permanent method of controlling sulfur dioxide emissions at existing plants. Please keep in mind, we are only talking about existing plants. With such an interpretation, an SDEL program might be allowed as an interim measure, but scrubbers or low-sulfur fuel would eventually be required for all coal fired steamplants.

If TVA were required to install scrubbers on all steamplants, a capital investment, in current dollars, of at least \$1.2 billion would be required. In our opinion this investment cannot be justified. We do not believe that low-sulfur fuel is a possible alternative at most plants for meeting the energy problems facing the Nation today.

The other major area which will require investments in pollution control equipment is the protection of water quality, specifically protection from thermal discharges. Currently we are installing or have made commitments to install cooling towers to reduce the temperature of heated water at our Browns Ferry, Sequoyah, and Watts Bar nuclear plants which are under construction. The capital cost of these cooling towers is estimated to be \$140 million. In addition, cooling towers may be required at the large nuclear plants which we will build in the future.

At existing TVA steamplants, we should be able to obtain exemptions under section 316(a) of the Water Pollution Control Act Amendments of 1972. These exemptions would enable us to continue to operate existing TVA steamplants without the addition of cooling towers. If section 316(a) exemptions are not granted, cooling towers could be required at all existing TVA steamplants. The additional cost for cooling towers at all existing plants would be at least \$450 million.

In addition, we expect to invest as much as \$70 million in capital improvements to comply with effluent limitations being proposed for nonthermal liquid wastes from our steamplants.

We believe that these are the major types of investments which could be affected by the provisions of H.R. 11929. To summarize, TVA's currently planned environmental control program will require capital investments of about \$570 million. This would include about \$360 million for air pollution control and \$210 million for water pollution control.

If the Clear Air Act provisions are interpreted as some are now suggesting, the air pollution control investments could add \$1.2 billion to this cost without adding benefits for the public. In addition to this, if application of section 316(a) is substantially different, then we expect the investment for water pollution control could increase by \$450 million. Therefore, the possible pollution control bill for existing TVA facilities and those now under construction could total \$2.2 billion.

Facilities which are not now under construction but will be needed to meet the power needs of the TVA region will add additional millions of dollars to the pollution control bill. We have not estimated these figures at this time because a variety of factors cannot be resolved until relatively detailed site-related conditions are examined.

Thank you very much.

Mr. JONES. Thank you, Mr. Watson.

Mr. Wagner?

Mr. WAGNER. We have nothing further in the way of prepared statements, Mr. Chairman.

We will be happy to answer your questions.

Mr. JONES. Mr. Baker?

Mr. BAKER. Thank you, Mr. Chairman.

I appreciate the opportunity to have you gentlemen and friends from TVA come up here to better advise the committee as a whole with some of the things that we are doing in Tennessee and Alabama throughout the TVA network.

We know a great deal has come about as a result of TVA's flood control and power program, and possibly the Nation does not realize how many programs we have run in our tributary to benefit the Nation as a whole, as well as our specific area.

Would it be in order at this time, Mr. Chairman, to pose some questions to our panel?

Mr. JONES. Yes.

Mr. BAKER. I think it might be good for the record, as well as for the members' information, to review a little bit about what TVA has done, not only for our area, but for the Nation as a whole.

I think in the line of being able to provide the power that is necessary to operate the Atomic Energy Commission's separation facility, the program at Oak Ridge—could we elaborate a little bit in this area?

Mr. WAGNER. Yes, sir, we would be glad to do that.

The TVA has, as one of its responsibilities, a defense responsibility, and to go back a bit, during World War II we did furnish large amounts of power for defense purposes.

We furnished power for the Atomic Energy Commission when it still was the Manhattan project, established to enrich uranium early in the 1940's, and we continued to supply the power to them since then, in substantial quantities.

We will give those quantities, if you are interested in them, a little later.

We have also provided power to the Arnold Engineering Development Center for wind tunnel tests, where the facility there is used for aerospace testing. We have provided power for the Federal installation in Huntsville, Ala. Our own facility at Muscle Shoals, Ala., has been used in times of national defense requirements to produce chemicals for defense purposes.

There are some other smaller Federal installations in the area. Those are the larger ones.

Mr. BAKER. In thinking about these Federal installations, and the volume of the quantity of power that you give to the Federal agencies, would this not be an obvious reason that the revisions under consideration have been appropriate?

Mr. WAGNER. It seems to me it would, yes, sir. The loads of the Atomic Energy Commission at one time in the past were about half of our total generation, and while they are a smaller portion now, and have decreased some over the years, they are now increasing them substantially, and they will again require large generating capacity.

Mr. BAKER. I heard a figure in the past, and I wondered if as much electrical energy is used in the uranium separation appropriation as is used by the city of New York each day, or the State of Alabama. Is there any comparison that can enlighten us?

Mr. WAGNER. Mr. Watson may have that in mind.

Mr. WATSON. It would by my offhand opinion that the amount used at Oak Ridge and Paducah would about equal that used by the city of New York.

The size of the loads are different, but the use at the diffusion plant is 100 percent of the time around the clock. The use in New York, of course, is at a load factor of 50 percent, or something like that. New York's load is about 8 million kilowatts. The load at Oak Ridge at its peak was 3.7 million.

Mr. BAKER. Thank you, Mr. Chairman.

The pertinent matter of interest here is to make it abundantly clear, that TVA generally is a national asset, and it is not exclusively regional in its aspects of operation.

Mr. WAGNER. I think that is correct.

In the power field, I think it is interesting that the TVA system, being the largest in the country, has pioneered new and larger generating facilities.

Many of the types of large units that we developed as a first-of-the-kind, have been adopted as standard in the industry as a whole.

So there has been benefit from this pioneering throughout the country, as well as from the interconnections with other parts of the country which serve them and us on emergency basis in times of need, and as Mr. Watson stated earlier in his testimony, through substantial seasonal interchange with other areas.

We have a winter peak in our area. Some of our neighbors have a summer peak, and as a consequence, we send some power to them in the summer, and they send it to us in the winter. This gives consequent benefits to their customers, and similarly to ours.

Mr. BAKER. Thank you.

Mr. JONES. Mrs. Burke?

Mrs. BURKE. No, sir.

Mr. JONES. Mr. Zion?

Mr. ZION. Thank you, Mr. Chairman.

I think there is no question but that TVA is a real good neighbor. A lot of the people from my district go out to Kentucky Lake, and it has increased property values there, and recreational potential there.

I think there is no question but that there is a great increasing need for power if we are going to even maintain our current standard of living, and with an estimated 300 million people here by the year 2000, we will have to greatly increase it to expand the gross national product, and there is no question but that there is an increasing need to generate power without harm to the benefits, and there is no question certainly as a result of your testimony that the cost of doing this is going to be astronomical.

The big question is, How do we finance it? Whether we finance this big increase through the user fees, or as you have suggested, tax credit from the Federal Government. Or to the Federal Government.

How about the user fee route?

Do you feel that the great increased cost is such that the users of the power are just not able to then foot the bill? Is that the problem?

Mr. WAGNER. There are considerable increases in the cost of power that are due to a number of factors. Fuel costs are increasing——

Mr. ZION. And will continue to do so.

Mr. WAGNER. And will continue to do so, that is correct, sir.

And interest rates are very high, and our interest cost is high, so that the rate increases that we have had to put into effect to stay in the black, as we are required to do by law, are working a real hardship on the people in the area, as they would be across the country.

The purpose of this bill, as I understand it, is to accord to the people in our area, not precisely, as Mr. Jones said, the same kind of advantage, or help that is given to consumers of privately owned utilities, but generally comparable to what they are given by tax credits by a series of arrangements. These are complex, and I do not understand them precisely, but the tax credits have resulted in lesser payments to the Treasury, just as this bill would provide for lesser payments from TVA.

So we see it as an effort to give the same kind of assistance to electrical power users across the country in carrying these very heavy environmental costs.

There are, Mr. Zion, very heavy operating costs which go with these things, for which the consumers are paying, like the cost of operating the cooling towers, the cost of operating electrostatic precipitators——

Mr. ZION. These costs are the same whether they are TVA or——

Mr. WAGNER. Yes.

Mr. ZION. My question, would you suggest that all generators of power have this same procedure that you are advocating here for TVA?

Mr. WAGNER. Well, I believe that the consumers of power generally need some help with these costs, and—yes, it seems to me it is a reasonable approach.

Mr. ZION. I thank the gentlemen.

No further questions, Mr. Chairman.

Mr. JONES. The gentleman from Mississippi, Mr. Cochran.

Mr. COCHRAN. Thank you.

I have one question I would like to follow up with from what Mr. Zion has asked, and that is, what, in your opinion, would be the

rate increase that you would have to request to pay for these new environmental additions, if you were not able to gain passage of this legislation?

Mr. WAGNER. That would depend to a considerable extent on just how successful we are with some of the discussions that we have now with the enforcement agencies, as to what will be required of us.

But if, for example, we should be required to put wet limestone scrubbers on our whole system, the increase in cost to our consumers would be about \$225 million a year, and that is against our current revenues of about \$850 million a year, so we are talking about a 30-percent rate increase potential for just that one item alone.

Now, admittedly, that is the largest item. I do not know whether Mr. Watson knows what the increase in the other programs would be or not.

Do you?

Mr. WATSON. As you say, it depends on the interpretation of what we are going to have to do.

If we are going to have to do all of these things, and make an investment of \$2.2 billion, that compares with the total investment of what we have, a little over \$4 billion, so you can get a feel of what a tremendous thing this would be.

Mr. WAGNER. I might say, Mr. Cochran, about 2 years ago, it was somewhere in there, when we first began to look at the many environmental requirements that might be placed on our system, we estimated that the annual cost could be as much as \$800 million, which would about double our rates.

Now, all those things might not be required while other things might be. That, for instance, did not include underground transmission lines. We do not really know how to do that.

But that alone could add another billion dollars a year, and double the other costs. So these are considerable items that face us, and face the entire Nation, and the one thing that we in TVA are trying to do is to say, gentlemen, we all need a good clean environment, we must protect the public health and welfare, but there must be a balance established here. These all have a cost.

We must do the essential things first, and we really have to look at the cost, or we are going to price energy out of reach and this could, of course, ruin the Nation economically.

Mr. COCHRAN. Have you been finally ordered by the Environmental Protection Agency to purchase, or to install any environmental safeguards at your operation now?

Mr. WAGNER. No, sir; we are still trying to persuade them, we have a—well—

Mr. WATSON. We have two cooling towers—

Mr. WAGNER. Mr. Watson is pointing out, in order to get construction permits, we put in cooling towers in two plants, which we did not think were essential, but we put them in.

Mr. BAKER. Would the gentleman yield?

Mr. COCHRAN. Yes.

Mr. BAKER. I thank the gentleman for yielding.

On this point, do you have the figures on what was budgeted for fiscal 1974, and what was budgeted for fiscal 1975 for the power

control program? Which would meet the requirements, which would be certified by the legislation if it is adopted?

Mr. WAGNER. In general, Mr. Baker, we have felt that these requirements would run about \$150 million a year, the amount of money for at least several years in the future.

Now, the precise amount will vary from time to time, and I do not know whether it is set out here or not.

Mr. WATSON. We have them separately, Mr. Wagner, but your figure of \$150 million is close from year to year.

Mr. BAKER. Could we have that for the record again, if it could be furnished later?

Mr. WAGNER. Yes.

[The information received follows:]

EXPENDITURES FOR POLLUTION CONTROL FACILITIES

TVA estimates that it will expend about \$147 million in fiscal year 1974 and about \$140 million in fiscal year 1975 for pollution control facilities that potentially would be eligible for credit under the provisions of H.R. 11929.

Mr. BAKER. I thank the gentleman for yielding.

Mr. COCHRAN. I have no further questions, Mr. Chairman.

Mr. JONES. The gentleman from Illinois.

[No response.]

Mr. JONES. The gentleman from Oklahoma.

[No response.]

Mr. JONES. The gentleman from Missouri.

[No response.]

Mr. JONES. I moved across the line pretty fast, did I not?

I have had in the testimony that has been presented here this morning, some questions that might arise in your mind as to the history of the legislation, the progress, and the facts, so I prepared three appendices, which I will circulate to each member, and I invite your attention to those exhibits which are included with my opening statement.

I wonder, Mr. Watson, if you will discuss the money costs of the expenditures for intermittent control strategy versus the proposed limestone scrubbers.

Could you go into that a little bit further?

Mr. WATSON. Yes.

The monitoring and intermittent operations of the plants we feel could be done in an adequate manner for something like \$100 million. Investment of \$100 million, and a cost of \$17 million a year, while the cost of putting in wet scrubbers would be more than \$1 million, and would cost something like \$250 million a year.

Mr. JONES. Have you discussed that aspect with the Environmental Protection Agency?

Mr. WATSON. Yes, sir; we have discussed it with them several times.

We have recently written them a quite detailed letter. It sets out those facts.

Mr. JONES. It will be included in the record at this point.

[The letter referred to follows:]

TENNESSEE VALLEY AUTHORITY,
Knoxville, Tenn., January 23, 1974.

HON. RUSSELL TRAIN,
Administrator, Environmental Protection Agency,
Washington, D.C.

DEAR RUSS: You may recall that, shortly after you were appointed to head the Council on Environmental Quality, I met with you and Al Alm to discuss ways in which TVA and its experience might be helpful to you and CEQ in carrying out its new and important work. I suggested that TVA might well be used as a full-scale field laboratory in the environmental field. Subsequently, when EPA was formed, I met with Bill Ruckelshaus and made a similar suggestion.

Doubtless much more could be done along those lines, but at the same time, a great deal has been accomplished. We have worked together on sulfur dioxide recovery experiments, are developing facilities at one of our nuclear plants to measure the effects of thermal discharge on aquatic environments, and there are many other examples of cooperative work and progress both formal and informal.

We are anxious that this kind of cooperation should continue. Our interests are certainly parallel; we are both dedicated to an improved environment and TVA has heavy responsibilities to help create a total human environment in this region whose overall impact is beneficial on a comprehensive and continuing basis for the people we serve.

Because of this tradition of cooperation, I regret newspaper articles like the one enclosed and the misunderstanding they create. Certainly the quotes from these EPA officials indicate a lack of understanding of TVA policy and practice. Consequently, I should like to be sure that you, personally, understand TVA's position in the matter discussed in the article.

First, let me assure you that TVA will, of course, obey the law. Let me assure you, also, that we will take whatever steps are found to be necessary to protect the public health and welfare. Having given that assurance, I should like to discuss rather fully the sulfur dioxide control problem on our system.

TVA, as I believe you know, has long been concerned about the environmental consequences of emissions from its power plants. This concern has manifested itself in the allocation of considerable manpower and dollars to the development of an improvement in sulfur dioxide "scrubbing" technology and in the development of an alternate technique for protecting public health and welfare from adverse effects of sulfur dioxide. Both of these endeavors began before any legal compulsion by the Clean Air Act Amendments of 1970.

In fact, ever since we built our first coal-fired power plant in the 1940's, we believe we have pioneered in the identification of stack emissions problems and their solutions. Our first work in developing "scrubbing" technology began over 20 years ago.

The alternate technique which we developed as a result of and a part of this continuing concern we call a Sulfur Dioxide Emission Limitation (SDEL) program. This technique requires a reduction in plant emissions whenever the public health and welfare standards would be exceeded. This occurs around TVA plants generally less than 5 percent of the time. Over the years, through thousands of helicopter flights, balloon tests, and other means, TVA scientists and engineers have assembled scientific data on sulfur dioxide, its behavior under various weather conditions, and their combined effect on the environment. We have applied these findings to the practical operation of our power plants and over a 4-year test period at our Paradise plant, one of the largest in the world, have demonstrated that state and Federal standards for protecting public health and public welfare in our system can be met by using SDEL programs. We are now in the process of developing SDEL programs for all of our plants where the public health or welfare standards can, on occasion, be exceeded and will have them in operation by mid-1975.

We know that some of your staff in EPA do not approve of SDEL programs at our power plants and would prefer us to install scrubbers. However, SDEL programs are designed specifically to prevent sulfur dioxide emissions from exceeding the health and welfare standards set by EPA and the states. Not only is TVA's plan the only way in which this can be done in time to meet the Clean Air Act deadlines but, as an air pollution control technique, it is the most reliable and least costly and has the fewest adverse effects on energy conservation and other aspects of the environment. In addition, our nuclear plant program will result in long-term reductions in total sulfur dioxide emissions, since progressively less coal will need to be burned as the coal-burning plants complete their useful lives and are retired.

To characterize TVA's program as doing grievous harm to the fabric of the law is extremely unfair and misleading. As I stated earlier, TVA will obey the law. At the same time TVA must exercise its legal and moral responsibilities to assure the best utilization of resources in order to protect and improve the health and general welfare of present and future inhabitants of the region. With such responsibilities, we cannot afford to take a narrow view of the environment. Jobs and the economic and social well-being of the area are all important parts of the total environment. TVA's SDEL programs, we believe, provide the best balance between these various environmental objectives while still protecting public health and welfare from air pollution. For example, not only would scrubbers on all of TVA's plants cost our power consumers more than ten times as much as SDEL programs, but they would produce substantial adverse environmental impacts themselves:

They would consume 6 percent of the power produced in the plants in which they are installed. On the TVA system this would require the replacement of about one million kilowatts of capacity and the burning of about 2.4 million more tons of coal a year, the equivalent of about ten million barrels of oil.

They would require the mining of 25 percent more minerals—an extra ten million tons of limestone and coal a year for the TVA power system—with all the environmental, transportation, and energy consumption which that entails.

They would create literally mountainous problems of polluting sludge, difficult to handle. Disposal requires four times as much land as fly ash alone. TVA itself could require as much as 20,000 acres in the next twenty years. Moreover, the sludge does not form a stable mass and is therefore not suitable for other uses after disposal. It is watery, and the leaching holds the possibility of water pollution.

They would require the fabrication and construction of more than a billion dollars worth of plant and equipment with all the problems of manufacture and scarce resource use, with no present assurance of successful, long-term operation.

As you know, the Clean Air Act does not require the use of sulfur dioxide scrubbers at all existing plants. Congress required only that the public health and welfare be protected by whatever means were available. It recognized the need for solutions adapted to the specific and differing problems of different areas, and left it up to each state to select the specific methods. Scrubbers, when perfected, will be one of those methods and possibly the only one for some air pollution sources. On the other hand, our SDEL programs will work at all TVA plants and possibly in some other areas.

Because we feel so strongly about this matter, we have taken steps to request the states in which we have power plants to recognize these programs officially. We are hopeful that they will do so shortly. I understand that EPA is preparing detailed guidelines for the use of these programs. Unfortunately, delays in issuance of EPA guidelines have contributed to the states' delay in making final decisions. In any event, we certainly feel that from a legal standpoint the matter is still an open one in these states.

I am concerned if EPA thinks TVA is not "committed to a program to develop sulfur dioxide scrubbing devices." Surely your staff is aware of TVA's heavy involvement in the development of stack gas scrubbing. I mentioned at the outset TVA's cooperative work in projects funded by EPA for building and operating several pilot scrubber facilities on our power system. And, as you may know, we are installing a \$42 million full-scale scrubber on our 550-mW power unit at our Widows Creek steam plant in Alabama.

TVA scientists and engineers have made intensive studies of scrubber facilities throughout the world, both with and independent of EPA staff members. Based on our experience with and knowledge of existing scrubber technology and their associated potential adverse environmental impacts which still have not been resolved, as well as the extremely large dollar expenditure required, we have concluded that scrubber installations cannot yet be justified for wholesale installation on existing TVA power plants.

We believe that the scrubbers in use by the Japanese and by Louisville Gas and Electric Company, often cited as examples of working technology, do not constitute proof that a satisfactory technology is sufficiently developed to warrant the massive expenditure of consumers' money that would be required to install them on our system.

The Japanese operation appears to have achieved a degree of efficiency and reliability. But it appears that this success to date has been achieved at the cost of increased water pollution, a trade-off which we find unacceptable and unnecessary.

TVA personnel have followed the Louisville Gas and Electric scrubber project through contacts with the utility and with the equipment supplier from the time the plans were announced until the unit was shut down in mid-December. This unit, of course, has a capacity of only 70 mW, about $\frac{1}{8}$ the size of the Widows Creek unit on which we are installing a scrubber. The LG&E scrubbers have not been operated for sustained periods of sufficient duration to determine long-term reliability. Moreover, the Louisville scrubber has certain unique advantages that are not generally available for use by other utilities. For example, it uses carbide sludge instead of lime as a scrubbing agent because a carbide plant with a sludge byproduct is located nearby. Because LG&E sells natural gas, the unit utilizes this increasingly scarce commodity, which is unavailable to TVA, in its reheat process. And the generating unit in which the system is being tested operates only intermittently to supply peak loads, permitting frequent maintenance; this would be impossible for a unit operating continuously for many days and weeks carrying the base load of a power system. In other words the LG&E experiment, even if successful, cannot be regarded as universally applicable to other utilities.

Reliability, it should be emphasized, is a key question in this complicated issue, for if the scrubber fails, the generating unit must either go out of operation or the scrubber must be bypassed. In this period of brownouts and voltage reductions, any added peril to generating unit availability is a critical matter. A scrubber which must be bypassed and repaired much of the time offers little real environmental protection in spite of its huge cost.

We are mindful of the fact that a large Midwestern power company (Union Electric) in the late 1960's installed a scrubber system which looked fine on paper but has now been abandoned as useless. Another large Midwestern company (Kansas City Power and Light) later installed a device of similar design and the company is still trying to work the bugs out of it. Still another utility (Commonwealth Edison) installed a system of different design in 1972. In the two years since startup, the scrubbers have operated less than 10 percent of the time because of a variety of process and mechanical problems. Similar experience has been encountered at other full-scale and pilot-plant test facilities.

Since less than successful scrubber projects, such as these, provided much of the earlier basis for EPA's previous conclusion that scrubbing technology had been adequately demonstrated, I hope you will understand why we feel we must now seek our own counsel regarding technological progress. In short, TVA believes that our consumers should not be required to buy a billion-dollar "pig in a poke." TVA is not alone among Federal agencies in its view of scrubber technology. The Council on Environmental Quality, during your chairmanship, and the Federal Power Commission both have recently stated that sulfur dioxide scrubbers have not yet been sufficiently demonstrated to be applicable to the electric power industry.

I have emphasized the technological issues inherent in this situation, but I do not wish to neglect the financial questions. TVA has a responsibility under the TVA Act to protect consumers of electricity from unreasonable costs. A scrubber system on all TVA power generating units would cost more than a billion dollars to install, and add about \$225 million to the annual costs of the power system. Yet TVA cannot find any significant environmental improvement that will not be better served by TVA's SDEL program at a fraction of the cost.

In light of these facts, we believe TVA has offered the Tennessee Valley and the Nation a constructive alternative in the form of a tested method of assuring that public health and welfare are protected. With this system, clean air can be achieved far more quickly. We can have it in operation on the TVA system in 1975. It can be done more economically: It will require a total investment of only about \$100 million and result in an annual operating cost of \$17 million. And finally, it will protect the environment more effectively: It is flexible in operation, can be adjusted to meet many varying circumstances, and does not present the tremendous energy use, waste disposal, and other potential environmental problems or reliability problems encountered with scrubber operation.

In spite of our apparent failure to date to resolve this problem to our mutual satisfaction, we believe that EPA and TVA have essentially the same environmental objectives for the TVA region. Since our agencies have traditionally cooperated and coordinated closely in developing pollution control technology, it is our hope that mutually acceptable SO_2 control plans can be worked out for the TVA region.

From the foregoing I believe it is plain that both TVA and EPA have important contributions to make to the solution of this national environmental problem. I would therefore appreciate an opportunity to meet with you personally to discuss our respective findings and hopefully agree on the basic facts upon which our policies should be founded.

Sincerely,

AUBREY J. WAGNER,
Chairman.

Mr. JONES. You have not had a response from EPA to the letter you have just referred to?

Mr. WAGNER. No, sir, we have not had a response yet.

Mr. JONES. Has there been an invitation from EPA to discuss the contents of the letter?

Mr. WAGNER. Yes, sir, we suggested that we sit down and talk about this.

We are concerned that even apart from additional costs, there are substantial environmental problems that would be created by the use of wet limestone scrubbers. For instance, there is a great amount of sludge, which is a substance, that has to be disposed of. It requires many acres of—

Mr. JONES. The environmental differences between the two?

Mr. WAGNER. Yes, sir.

Mr. JONES. All right, then continue.

Mr. WAGNER. Then in addition to that, I am speaking from memory now, Mr. Chairman, but in addition to that there is about 10 million tons of additional limestone and coal that would have to be mined.

The limestone, because it is used in the process, and its mining, of course, creates environmental problems. It is mined in open pits. It is a dusty process. It requires transportation to the plant.

Mr. JONES. I was going to say, is the transportation one of the major costs of the operation?

Mr. WAGNER. Yes, sir, the transportation will be excessive, depending on where you find the limestone. It also requires energy to move the trains, and so on. It takes more coal to operate these things.

Mr. JONES. What would be the environmental differences between the two?

Mr. WAGNER. Well, the system—

Mr. WATSON. We do not know if the system would work.

Mr. WAGNER. Well, the first thing is that the system which we propose would meet the ambient air standards. That is the air-ground level would meet all the standards, both primary and secondary.

And we tested it for 4 years at one of our large plants, so we know it will work. The environmental problems consequently are none in addition to what we have now. The wet limestone scrubbers would give you, in general, very many environmental problems.

The limestone, the problems of transporting it, the problems of disposal of the sludge, and then the problems of protecting that sludge from leeching, and so on, into the future.

Now, Mr. Watson has reminded me that we are not yet satisfied that there is a scrubber system that will work satisfactorily and continuously.

The purpose of our—

Mr. JONES. Well, you could not make a comparison between the other system, the intermittent control system?

Mr. WAGNER. That is right. The comparison that we did make is based on the assumption that a scrubber, something like the one we are installing, to try in the plants, would work, and would work at about the same cost.

There is another difference environmentally, recognizing that scrubbers will not work continuously, and when they do not work, the answer is that you simply bypass the scrubber, and the sulfur dioxide goes out and becomes a real pollutant.

So there would be times when the scrubber system would result in a violation of the ambient air standards.

With our system that is not possible.

Mr. JONES. Mr. Wood, do you have some questions?

Mr. WOOD. Just one more, Mr. Chairman.

Right now, as far as environmental controls are concerned, what percentage of the power that can be generated in a powerplant is used to run the electrostatic precipitators—the most efficient ones that you have?

Mr. WATSON. Well, it is relatively small.

You are talking about something like a limestone scrubber?

Mr. WOOD. No, the electrostatic precipitators, themselves.

Mr. WAGNER. It is about 1 percent. We are putting in electrostatic precipitators in all our plants; and replacing some that did not work well.

Mr. WOOD. Some of the precipitators even have higher levels, is that correct? Usage of power?

Mr. WATSON. One way of improving the efficiency is to increase the electrostatic charges on the plates, and increase the number of plates, so that depending on the kind of coal that is burned, your cost of operation would vary considerably.

For instance, if you were designing a plant to burn a low sulfur coal, you probably would have twice as much use of electricity to operate the precipitators, as if you were building a plant burning a coal with 3 or 4 percent sulfur.

Mr. WOOD. Your sulfur dioxide removal equipment, the wet scrubber, I think you estimated 6 percent of your total power capacity would be used for that?

Mr. WATSON. That is about right—4 to 6 percent.

Mr. WOOD. Let us move on to thermal discharges, because we have not discussed that in much detail.

Are you now being required, either by the States involved, or by the Environmental Protection Agency in any place to install cooling towers, rather than using once-through cooling.

Mr. WAGNER. We have installed cooling towers at one plant which is operating now where we felt that they were required to maintain the quality of water, and we had determined that we would install them at one of our nuclear plants now under construction.

But there were two plants where we had not planned to install them, but where the State standards were not met by the method we were proposing to use, and we are installing them in those two plants.

Mr. WOOD. What percentage of the power is used in one of your modern new cooling towers for the operation of the tower itself providing the draft?

Mr. WATSON. There are two types of cooling towers in general use, we are going to use both.

One is a mechanical fan-type, and this uses considerably more power than the chimney-type cooling tower.

I would think that with the chimney-type the operating costs are quite small, but with the fan-type, that is where you get into—again, I have to estimate—but you are talking about loads of, oh, on a big plant it is in thousands of kilowatts, it would be close to 2 to 3 percent too, I guess.

Mr. WOOD. We are talking then of utilizing just under 10 percent of the total plant capacity, to run environmental controls within that plant itself? Maybe 10 is a little bit high.

Mr. WATSON. That sounds to me as reasonable, yes.

Mr. WOOD. So somewhere between 8 and 10 percent of your total investment for actual power production facilities may be taken up to produce power to operate environmental controls; this is in addition to the environmental controls themselves.

Mr. WATSON. That is right.

Mr. WOOD. Would you consider, under this legislation, the cost of the added power that you have to produce, or the cost of the facility producing that added power, to be part of the cost that should be certified by the Environmental Protection Agency?

Mr. WAGNER. I do not know that we talked about that. That offer with—

Mr. WOOD. Your estimate would then be more than 150 million.

Mr. WATSON. It would be a sufficient number.

Mr. WOOD. It may be worth while to provide to the committee some information along this line, because this would be an added argument for the legislation.

That is all I have.

Mr. JONES. Are there further questions? Mr. Baker?

Mr. BAKER. Thank you, Mr. Chairman.

I had a group in Cleveland, Tenn., when I was home last week, who were deeply disturbed and concerned about the increase, and I am sure Jim Watson has heard from many points.

Could we conceivably conceive that adoption of this legislation, H.R. 11929, would have an effect on electric rates down the road?

Mr. WAGNER. Mr. Baker, it would save us some costs, interest costs, and it would help to hold rates down in the future. It certainly would.

Mr. BAKER. That same meeting, the subject was brought up of the increased cost of coal, and one of the persons present was under the impression that the majority of electricity was generated by hydro in the TVA system. What is the percentage of steam versus hydro?

Mr. WAGNER. About 80 percent steam, and about 20 percent hydro at the present time.

Mr. BAKER. Further, in that meeting, a statement had been made by a representative of the power division of TVA that with the completion of Sequoyah—one of the others—that the possibilities of emergencies would be dramatically reduced in the Northeast when we have the capacity, which would be developed upon completion—with the third nuclear plant. Is that in essence a fact?

Mr. WAGNER. Mr. Baker, that is a question that I have heard raised before. People say, you are installing capacity to meet some people's power problems somewhere else. That is not true.

We are interconnected with systems around us, and in cases of emergency, if we have capacity and they are in trouble, we are able to send power to them. But on an emergency basis only.

The same thing works in reverse. The greater capacity you have, and the greater connection capacity of interconnection transmission lines, the greater assistance we can be to each other.

Mr. BAKER. This would lend something, though, to the national stature of TVA in being a facility which is available for emergencies outside the TVA area.

Mr. WAGNER. Yes, sir, the stronger we are, the more we will be able to help them in time of need, and they can also help us in certain circumstances.

Mr. BAKER. Your peak season would arise more in the winter or summer?

Mr. WAGNER. Our peak would be in the winter, so we would be able to help others out more in the summertime.

Mr. BAKER. And in the Northeast it might be that you might be able to trade?

Mr. WAGNER. That is correct.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. JONES. But you are already doing it?

Mr. WAGNER. Yes, we are already doing that.

Mr. JONES. And have been doing it.

Mr. WAGNER. Yes.

Mr. JONES. I would say, Mr. Baker, several years ago we were discussing this problem, and Congressman Howard W. Robison was a member of this committee, and I made the observation that some day we may be able to ship some electricity to New York.

He said, "I know darn well that that will never take place."

So about a month ago I was on the floor, and he came over and sat down alongside of me, and said, "I never dreamed that your observations that you made in the committee would ever come true, but thank goodness, you saved New York City when it was in dire need and an emergency situation existed."

One question: What is your reserve at the present time?

Mr. WATSON. Our system capacity is about 23 million kilowatts, and we receive about 2 million kilowatts in seasonal interchange during the winter. So far this winter, our area peakload has been about 18.6 million kilowatts. For next summer, we are forecasting a margin equal to about 17 percent of our expected system load at that time.

Mr. JONES. How much above the——

Mr. WATSON. I would be a little more comfortable looking ahead to about 20 percent rather than 17.

Mr. JONES. What is the normal private utility that they operate at?

Mr. WATSON. It varies with the size and other characteristics of the system, including the interconnections it has.

Mr. JONES. Gentlemen, we are greatly obliged to you, and thank you for the attention that you have given to this bill, and the observations that you have made, and I am quite sure that all of the members will be fully and completely informed with the information of these hearings, and it is gratifying to know that TVA is doing such a remarkable job, and having the imagination and capabilities of responding to the various amendments which have been adopted subsequent to its initial passage.

Again, we thank you, and the committee will stand adjourned until 10 o'clock tomorrow.

[Whereupon, at 11:54 a.m., the committee was adjourned, to reconvene at 10 a.m., Wednesday, February 27, 1974.]

TVA POLLUTION CONTROL FACILITIES

WEDNESDAY, FEBRUARY 27, 1974

HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC WORKS,
Washington, D.C.

The Committee on Public Works reconvened at 10:12 a.m., in room 2617, Rayburn House Office Building, pursuant to recess, Hon. Robert E. Jones presiding.

Mr. JONES. The committee will come to order.

We have with us this morning Mr. Marc Messing, Staff Director of the Energy Policy of the Environmental Policy Center of Washington.

Mr. Messing, we are pleased to have you, and you may proceed.

STATEMENT OF MARC MESSING, STAFF DIRECTOR, ENERGY POLICY, ENVIRONMENTAL POLICY CENTER, WASHINGTON, D.C.

Mr. MESSING. Thank you.

My name is Marc Messing. I am here on behalf of the Environmental Policy Center.

I should mention that Mr. Hall and I were originally asked to testify jointly, and Mr. Hall had prepared an oral statement for this morning.

He is unable to be here this morning as a result of the fuel shortage in New York, and he apologizes to the committee for his absence.

I have submitted a written statement and, if you wish, or if it is acceptable to the committee, I would prefer to summarize that and include some of the remarks that Mr. Hall wished to make.

Mr. JONES. You may proceed.

[The full statement of Mr. Messing follows:]

STATEMENT OF MARC MESSING ON BEHALF OF THE ENVIRONMENTAL POLICY CENTER

My name is Marc Messing and I am testifying on behalf of the Environmental Policy Center. The Environmental Policy Center is a non-profit corporation working in the public interest to secure and ensure sound environmental policy decision making on all levels of the federal government.

H.R. 11929 would in effect, entitle the Tennessee Valley Authority to deduct, as a credit against the payment of an outstanding loan from the United States Department of the Treasury, the costs of its pollution control facilities. Without going into some of the internal particularities of this legislation which I believe deserve more careful scrutiny on the part of this Committee, such as the provisions for applying against future fiscal budgets the capital expenditures of previous years, and including the precise calculations of benefits which would accrue to both the TVA itself and to its rate-payers from legislation such as this, I believe that there are several points which are of more fundamental importance and which should be addressed here. These points include two elements of cost

advantage to TVA which would result from this legislation, and which I would infer were intended, although not perhaps with the implications that I believe exist, and the third point which pertains to the relation of this legislation to the energy conservation goals which have recently become a matter of urgent national attention. On this latter point, which I will address only briefly, as on other matters which may come before this Committee in the course of the next year and which may similarly bear no immediately apparent relation to energy conservation considerations, I would hope that the Energy Conservation Office of the Federal Energy Office be asked to testify on the potential implications of the considered legislation for energy conservation.

Firstly, by allowing TVA to deduct as a credit against the repayment of an outstanding Federal loan, in the amount of \$1.7 billion, expenditures for certified pollution control equipment, the TVA would enjoy a substantial capital advantage over other electric utility companies. Although it might be argued that such a credit serves to off-set a current advantage enjoyed by investor-owned utilities through tax deductions and accelerated depreciation allowances, this argument would not justify the process of legislative leap-frogging through which increasingly greater privileges are continuously petitioned and received. It has become clear that the high capital investment costs of modern electric utility companies present formidable capital obstacles to companies which must satisfy investor interests; but it should be equally clear that this problem will not be solved by allowing new cost-amelioration strategies at a time when the utility companies are going to be compelled by changing national goals, to adapt to completely new investment and capitalization strategies. I do not think that it is out of place here to emphasize that the electric utility industry has traditionally developed on the interlocking assumptions of low-cost fuels, its ability to ignore the economic externalities of massive pollution and its social costs, and on the economic justification of being able to attract investment capital through the projections for continued exponential growth rates in a capital intensive industry. Although the affected industries may have not been the first to realize or admit this, it is now becoming clear to even the most reluctant utility executive, that these tripartite assumptions are no longer valid.

We have passed the period of cheap fuel availability; we have been forced by our own excesses to include the costs of pollution control devices within the costs of our products; and we have now established that neither electric utilities, nor other industries bound by the physics of the universe, can grow exponentially forever. The growth rate of the electric utilities is going to have to be retarded, if not reversed, and with it the most fundamental principal of utility investment strategy is going to have to be reconstructed. In this context, it is probably fruitless and self-defeating to continue increasing the utility portfolio packaging by discounting the costs of pollution control devices.

However, if it is to be argued that the purpose of this legislation is to allow parity between TVA and investor owned utilities, then the amount of the pollution facility costs against which TVA should be allowed to receive a credit should be calculated and scaled to equal the cost privileges enjoyed by private utilities through the accelerated depreciation allowance.

The second point that I would like to make is that insofar as TVA would deduct the cost of this equipment expenditure against a direct loan from the U.S. Treasury, the burden of cost would fall on the U.S. taxpayer rather than the TVA ratepayer. This presents a fundamental inequity; not only privileging the TVA ratepayer at the expense of the U.S. taxpayer, but at the same time violating the fundamental principal of pricing electricity at its cost to consumers. The issue of cost-pricing in the electric utility field has itself been an area of historically questionable interpretation, and subsequently likely reform; but one does not have to move all the way to immediate reform in order to prevent further abuses. On this question it may be instructional to note the words of the President in his messages before Congress during the preceding year. On February 14th, 1973, as if speaking directly to this question, the President stated that: "the costs of pollution should be more fully met in the free marketplace, not in the federal budget. For example, the price of pollution control devices for automobiles should be borne by the owner and the user, not by the general taxpayer. People should not have to pay for pollution they do not cause."

As long as large bulk consumers of electric power continue to enjoy discount rate privileges, cost savings accrue to them thereby compounding their cost advantages over smaller unit consumers, and in this particular instance the cost saving would in fact by an external cost passed outside the immediate system to be absorbed by non-TVA consumers. This practice would mock both the concepts

of meeting costs in the free marketplace and of pricing the costs of pollution control devices so that they are borne by the user, as expressed in the President's message.

Thirdly, it is likely that this legislation would have an adverse effect on energy conservation measures, and again it is instructive to note the President's words. In his energy message to the Congress on April 18th, 1973, the President emphasized that "we should recognize that the single most effective means of encouraging energy conservation is to ensure that energy prices reflect their true costs."

Thus, not only should cost-pricing be viewed as an area of necessary reform within our utility rate structures, and not only as one which bears directly on the rate of utility growth and capital investments, but as a fundamental corollary of our national energy conservation programs. It is in this respect that I mentioned earlier that the Office of Energy Conservation within the Federal Energy Office should be consulted as a routine in all energy-related legislative hearings for the foreseeable future.

Finally, with respect to energy conservation and the subject of utility growth rates which I have mentioned in my testimony, I would like to quote from the Project Independence Background Paper presented before the Washington Energy Conference on February 11-12th, 1974, in which the White House explicitly presented its "highly ambitious program" for achieving U.S. energy independence by 1980.

"(This paper) establishes targets toward which the United States must aim if it is to fulfill the pledge made by the President to establish self-sufficiency through Project Independence. By stepping up the growth of production in the United States to 4.7 percent per year, and by cutting back the rate of growth in demand from a 3.6 to a 2 percent, U.S. energy supply and demand can be in balance by 1980."

In 1970, the average annual rate of growth of electrical energy on a per capital basis was 7.9% (U.S. Department of Interior, 1972). If the magnitude of the change that will be required in the structure and investment strategies of the electric utility companies is not obvious from the comparison of these figures, I believe that it can only be underestimated.

With pollution control expenditures of \$16,522,000 in 1973, and projected pollution control facility expenditures of \$48,124,000 in 1974, and \$72,807,000 in 1975, it is obvious why TVA would like to have these expenditures credited against the repayment of its outstanding notes payable to the U.S. Treasury in the amount of approximately \$1,875,000,000. It should be equally obvious that granting this credit would be unfair to the U.S. taxpayer, inequitable to electric utility rate payers throughout the country, contrary to the President's program for energy conservation, and incompatible with our national objectives of achieving maximum energy productivity within a clean and healthy environment.

Mr. MESSING. Thank you.

Our concern with H.R. 11929 to amend the TVA Act is principally that it would shift the burden of costs for pollution control facilities from the TVA ratepayers to the taxpayer.

I think it is clear from the structure of the bill that by crediting the cost of pollution control against the rate payment of the U.S. loan, it is the taxpayer who ultimately bears the cost for this rather than the TVA ratepayer.

This contrasts directly to the principle by which all private utilities operate and in which the ratepayer pays for all electric utility equipment, including pollution control equipment.

So there are two or three problems with this.

The first is that it provides a capital advantage to TVA over private utilities.

The second is it is inequitable to ratepayers throughout the country.

I think, additionally, it compounds the advantage already enjoyed by more electric consumers within the rate structure who enjoy reduced unit cost pricing.

We suspect that this may be implicitly promotional and, therefore, contrary to energy policies as outlined by the President in his energy messages to the Congress in the last 14 months.

We also believe that this is probably contrary to the necessary restructuring of the electric utility industries which would be accountable for the reduced electrical energy growth rate over the next decade or so on the project independents.

I believe, as concisely as possible, this would summarize our joint position.

Mr. JONES. You may proceed.

Mr. MESSING. I stated my summary as concisely as possible and I have concluded.

If there are questions, I will be glad to answer them.

Mr. JONES. Mr. Snyder, do you have any questions?

Mr. SNYDER. I appreciate your summary—I was trying to go through your statement and get the details.

You are opposed to this legislation?

Mr. MESSING. That is correct.

Mr. SNYDER. And the basis of that opposition, to clarify in my mind, is that these credits would or—there are several bases, one of which this would be an expense against all the taxpayers in this country as opposed to the TVA operation itself?

Mr. MESSING. That is correct.

Mr. SNYDER. And does private power have a similar tax credit?

Mr. MESSING. My understanding is that they can deduct the cost of pollution against their income tax, up to 48 percent, I believe. And, in addition, they have an accelerated depletion allowance.

So they do enjoy some benefits of this sort.

As TVA pays no income tax it would be inappropriate to allow them identical privileges.

Mr. SNYDER. In other words, you give TVA twice the advantage as private power?

Mr. MESSING. That is my understanding.

I have stated in the written testimony presented that one alternative to this legislation—if parity of costs between TVA and private utilities is the goal—would be a credit proportional to the tax advantage enjoyed by the private utilities to be written in.

Here we find a leap frogging effect where TVA and private utilities are trying to increase their advantage over each other. I think it is important, and I would like to emphasize a point made in written testimony that under Project Independence the national goal to achieve energy self-sufficiency by 1980, the Federal Energy Office has indicated that it will be necessary to cut our national energy growth rate from its current rate of approximately 3.6 or 4 percent to 2 percent, and electric energy growth rate has traditionally been highest in the energy sector. It has been approximately 7.9 percent.

The very fact that the electric energy has enjoyed such a marked growth over several decades has become integral to utility finance.

That is, it is necessary, to justify capital investments; that this is a capital-intensive industry which has enjoyed a marked growth rate.

I think it is important to emphasize that we are going to have to reduce that growth rate over the coming years. And it is going to be necessary to restructure utility financing and advancement patterns as a result of this.

Mr. JONES. Any further questions?

Mr. SNYDER. No. Thank you.

Mr. JONES. We thank you very much, Mr. Messing.

Are you in communication with Mr. Hall?

Mr. MESSING. Mr. Hall called me this morning and said he could not be here, and indicated that he would call again this afternoon.

Mr. JONES. Will you, in your next conversation, tell him that we will leave the record open for him to submit a statement?

Mr. MESSING. Thank you. I will. He has indicated that the written testimony has been mailed this morning.

[Statement received follows:]

STATEMENT OF RICHARD M. HALL

Mr. Chairman, my name is Richard Hall. I am an attorney in New York City and have had the opportunity over the last several years to work with conservation groups both nationally and in Tennessee concerned with some of the practices of the Tennessee Valley Authority. While I do not speak today on behalf of those organizations I have spoken with them about this and they have indicated their desire to express their own views to the Committee. I appreciate the opportunity of testifying here today.

H.R. 11929 essentially provides that the U.S. taxpayer will pay for the cost of installing air and water pollution devices on Tennessee Valley Authority power plants. This contrasts with all private utilities in which the ratepayer pays for all electric utility equipment, including pollution control equipment. If this bill passes, a resident of New York City, for example, will be paying for Con Edison's pollution control efforts to keep New York air and water clean, and for TVA's effort to keep Tennessee's air and water clean. The same can be said for the constituents of each member of this committee.

The bill's method of accomplishing this is indirect and somewhat complicated. It provides that any payments for air and water pollution control equipment by TVA is a credit against annual repayments by TVA to the United States Treasury.

These are repayments, mandated in 1959, of principal and interest on money supplied from the United States Treasury and invested in the capital assets of the TVA power system. The repayments are like payments on the average house mortgage. When a credit against an outstanding loan is given it amounts to the original lender paying for the particular item.

A brief description of TVA power system financing will give a better understanding.

Today, TVA's power program is capitalized from three sources—federal appropriations, private borrowing and retained earnings from sales of power. Prior to 1959 when the TVA Act was amended, TVA did not have the authority to borrow privately to provide capital for its power system and all the capital for its system derived from U.S. appropriations and retained earnings. In 1959, the "net power assets" (total plant investment less depreciation, plus various other assets such as fuel inventories) was \$1,718.6 million (1.7 billion) which was derived as follows:¹

U.S. Treasury funds, gross.....	\$1, 449. 1
Less Treasury funds, repaid.....	250. 1
Net U.S. Treasury funds.....	1, 199. 0
Long-term debt (to public).....	0
Short-term notes payable to U.S. Treasury.....	0
Short-term notes payable to public.....	0
Advances and contributions.....	. 4
Retained earnings.....	519. 2
Total.....	1, 718. 6

¹Power Annual Report, Tennessee Valley Authority, 1973, pp. 36-37. Figures in millions.

From 1959 federal appropriations for power assets increased only slightly, retained earnings grew slowly but steadily and—with the new power to borrow, principally from the private investor through the sale of long-term bonds or short-term notes—private capital grew dramatically until in 1973 the net power assets were \$4,214.4 million (4.2 billion) derived as follows:²

U.S. Treasury funds, gross-----	\$1,469.9
Less Treasury funds, repaid-----	435.1
Net U.S. Treasury funds-----	1,034.8
Long-term debt-----	1,775.0
Short-term notes payable to U.S. Treasury-----	100.0
Short-term notes payable to public-----	480.0
Advances and contributions-----	.9
Retained earnings-----	823.7
Total-----	4,214.4

At the same time that TVA was given the authority to borrow from the public, it was directed to make two annual payments to the U.S. Treasury on account of the more than one billion dollar federal appropriations in power assets. These two payments are: (1) a repayment of principal at the rate of \$10 million for the first five years, \$15 million for the next five and thereafter at the rate of \$20 million until \$1 billion dollars is repaid; and (2) interest on the unpaid balance at a rate equal to the average rate the U.S. government is paying on all its obligations.³

These payments will be very familiar to the homeowner with a mortgage. The principal payments are like principal payments on a house mortgage except that TVA was forgiven almost 200 million at the outset (approximately 18%) and has a 54 year mortgage. The interest rate is good too; for 1974 the rate is 6.129%.

That is, of course, as it should be. TVA's capital structure does give it a decided cost advantage over private utilities—and cost of capital is an increasingly large part of the cost of running any utility and therefore of the power any utility sells. *TVA and Strip-Mined Coal, A Report to the Natural Resources Defense Council, Inc.*, Kearney, Telson and Turnage (1971), concludes that TVA annually returns to investors 6.96% for every dollar invested as compared to 12.2% for a typical private utility.

This cheaper cost of capital, and the generation of some hydro-electric power, which is usually government-owned and the cheapest to generate, are two principal reasons that TVA electricity is as cheap as it is compared to other utilities.

We can see that the federal status of TVA amounts to a favored position among electric utilities. That is one of the results of the great social experiment of TVA.

The present attempt to have the U.S. taxpayer pay for TVA's pollution control equipment is not a part of that great social experiment David Lillenthal wrote about in "Democracy on the March", it is a raid on the U.S. Treasury for a benefit of a few—the consumers of TVA electricity, including such favored rate-payers as Alcoa Aluminum which consumed 1.9 billion kilowatt hours at an average cost per kWh of .521 cents, compared to the average homeowner who consumes 14,400 kilowatt hours at an average cost of 1.22 cents per kWh, according to TVA's 1971 Annual Report.

Not only is H.R. 11929 questionable from a fairness standpoint; it is inconsistent with the President's efforts at energy conservation. One of the important techniques for insuring that individuals use energy as sparingly as possible is to see that the price of a given energy form reflect cost.

As the President said in his energy message to Congress of April 18, 1973 at page 14:

"Finally, we should recognize that the single most effective means of encouraging energy conservation is to ensure that energy prices reflect their true costs. By eliminating regulations such as the current ceiling on natural gas prices and by ensuring that costs of adequate environmental controls are equitably allocated, we can move toward more efficient distribution of our resources."

² *Ibid.*

³ For a description of repayment practices see footnote 5 to statement, p. 32, *ibid.*

Most telling, in his energy message of February 14, 1973, the President stated: "Third, the costs of pollution should be more fully met in the free marketplace, not in the Federal budget. For example, the price of pollution control devices for automobiles should be borne by the owner and the user, not by the general taxpayer. People should not have to pay for pollution they do not cause."

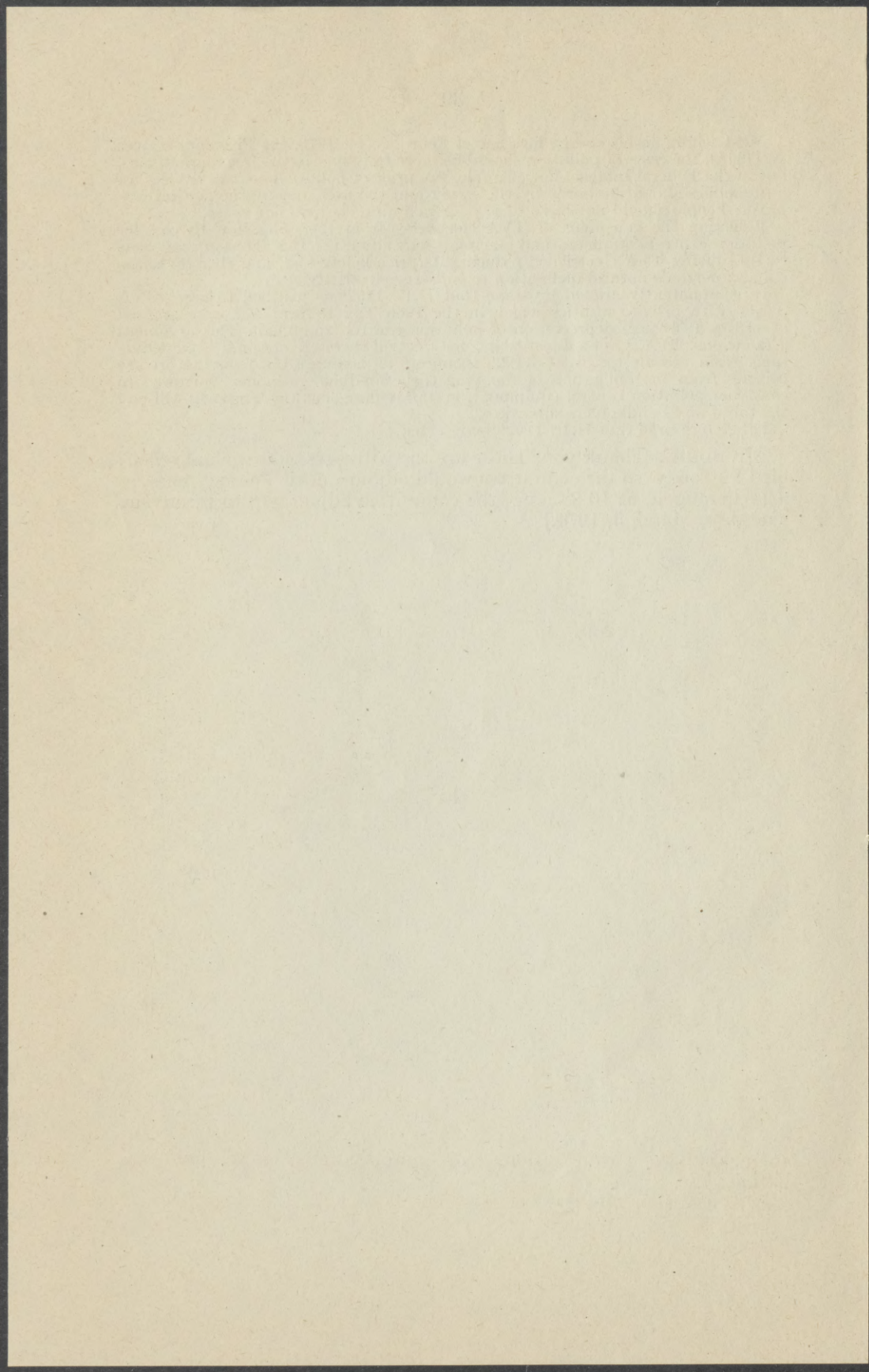
Relieving the consumer of TVA electricity from the obligation to pay for pollution control equipment and placing it instead on the U.S. Treasury amounts to subsidizing TVA electricity, reducing its price below cost, and thereby weakening a person's natural inclination to conserve electricity.

It is apparently argued by some that H.R. 11929 is justified to grant TVA parity with private utilities which in the 1969 Tax Reform Act were granted accelerated (5-year) depreciation of pollution control equipment. This argument is fallacious. TVA is not subject to income tax and therefore does not need deductions from income tax. H.R. 11929 is more like passing a bill relieving private utilities from the obligation of repaying their bondholders money borrowed to construct pollution control equipment, and providing that the Treasury will pay the tab if any bondholders squawk.

I therefore urge that H.R. 11929 be rejected.

Mr. JONES. Thank you. Those are the witnesses that we had scheduled for today, so the committee would adjourn until Tuesday next.

[Whereupon, at 10:23 a.m., the committee adjourned, to reconvene Tuesday, March 5, 1974.]



TVA POLLUTION CONTROL FACILITIES

TUESDAY, MARCH 5, 1974

HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC WORKS,
Washington, D.C.

The Committee on Public Works met, pursuant to call, at 10:03 a.m., in room 2167, Rayburn House Office Building, Hon. Robert E. Jones presiding.

Mr. JONES. The committee will come to order.

The purpose of the meeting today is in further consideration of H.R. 11929 before this committee.

Today has been set aside for Members to testify, since we have some 18 sponsors for this proposition from Members in the Tennessee Valley Authority area.

We are pleased this morning to receive our colleague from Tennessee with whom I came to the Congress in 1947, who has distinguished himself in a variety of legislative fashions.

He is now chairman of the Public Works Subcommittee, House Committee on Appropriations.

Of course, you know, Mr. Evins, we are in great debt to you because of the splendid position you occupy, and the things we do in this committee are the things that you must attend to subsequently in the way of providing the funds.

I would like to point out to the committee one of the most critical things that has been undertaken in recent years since Mr. Evins has been chairman of his subcommittee, is the fact that we are trying to draw the period of authorizations and the period of appropriations closer together in time, because mishaps and miscalculations occur and arise over a period of time. For instance, just prior to Mr. Evins taking his position as chairman, the average time lapse from the approval of a project in the Public Works Committee until it received its first appropriation was 10 years, 2 months.

Of course, we all realize that brings about an impossible situation. It thrusts upon the Appropriations Committee a burden of reexamining all of the facts and information which were made available at the time of the authorization, and these subsequent events, demographic studies, and all the other facts. The authorizations of the Public Works Committee should be taken to the Appropriations Committee promptly and understandingly.

Mr. Evins has worked very conscientiously and very dedicatedly to making the authorizations and appropriations show some executions.

Mr. Evins, it is a great honor for me and for the committee to receive you this morning.

**STATEMENT OF HON. JOE L. EVINS, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF TENNESSEE**

Mr. EVINS. Thank you, Mr. Chairman and gentlemen of the committee. Thank you all for the privilege of allowing me to come here to present my views.

I have been invited by the chairman to be one of the leadoff witnesses on a bill which some 19 Members from the Tennessee Valley area introduced, and I have served as a cosponsor.

I want to emphatically give my strong views in support of H.R. 11929. I believe there are 19 cosponsors of this bill, which would authorize the Tennessee Valley Authority to credit any expenditures for pollution control against its required repayments to the Treasury.

This bill is needed and necessary to provide some relief to the people of the Tennessee Valley who recently received the seventh electric power rate increase by TVA in 6 years. Power bills of \$100 and more for a single month are not uncommon for relatively modest homes. Homeowners were encouraged for years to utilize "low-cost electricity" for heating, cooking, and other uses—and now the owners of these all-electric homes are bearing the brunt of almost prohibitive electric bills.

Industries are also suffering in the TVA service area because of heavy increases in their electric power bills.

During TVA appropriations hearings held by our Subcommittee on Public Works Appropriations last year, representatives of several industries testified that electric power for their plants was costing more in Tennessee than in other States.

I was surprised to hear this testimony.

One industry spokesman said further that his plant would not have located in Tennessee if it had been aware of the planned escalating rate increases—and would locate no additional industry in the Tennessee Valley area, because of the rate increases.

To give you some idea of the amount of these repayments, one of the major TVA expenses is its repayments to the Treasury, and another is the cost of pollution control of its steamplants, which burn enormous quantities of coal.

This bill, H.R. 11929, would have the effect of eliminating environmental control costs by crediting such costs against repayment requirements into the Treasury.

By way of background, in 1959, this committee and the Congress gave TVA authority to issue bonds to assist in financing its power program—in an amount not to exceed \$5 billion at any one time.

Prior to 1959, funds required to finance TVA's power program were obtained from appropriations by the Congress.

However, the 1959 act required that TVA make payments into the Treasury of—first—a return on the net appropriation investment in power facilities and—second—annual repayments of such investment.

The return on the investment is based on the computed average interest rate payable by the Treasury upon its total marketable public obligations and the unrepaid appropriations investment at the beginning of the fiscal year.

To give you some idea of the amount of these repayments, prior to 1959 under various repayment sections, TVA had repaid \$250,131,000

to the U.S. Treasury. Subsequent to 1959—or 1961—when the amendment went into effect—TVA payments have totaled \$891 million.

Therefore, TVA repayments since its inception have totaled more than \$1,141 million.

I do not know of any agency of the Government that pays such enormous sums into the U.S. Treasury.

In fiscal 1974, TVA will make a \$20 million payment toward its appropriations investment and a \$63 million payment as a dividend—a total payment into the U.S. Treasury of \$83 million in 1 year.

Indications are that \$170 million will be spent on pollution control equipment in fiscal 1974.

Tell me, if you will, any agency that pays \$80 to \$90 million into the Treasury every year.

Furthermore, if the Environmental Protection Agency requires very stringent measures to remove pollution from steamplant stacks—as it has indicated it will—TVA will be forced into an outlay of \$1 billion during the next few years on this new and untried technology.

Under the bill before your committee, the cost of these pollution control facilities would be applied the next year to cover the required dividend payment to the Treasury. The remainder would be applied to reduce the \$20 million investment payment—further, if the costs of pollution facilities exceeded these payments, the remainder would be applied to a further reduction of the remaining investment.

It is estimated the bill would save TVA \$85 million in the first year with benefits increasing substantially each year.

I should like to point out that the Tax Reform Act of 1969 provided an amortization deduction for certified pollution control facilities built by private corporations—TVA has no such recourse for relief.

In other words, the Congress has provided private industry with tax credits for the costs of pollution control measures—but has not provided any similar relief for public utilities or their customers who, in many instances, ultimately pay the higher costs in higher power rates.

This bill would provide some relief not only to TVA, but to its customers and consumers in the Tennessee Valley.

As you all know, TVA has long enjoyed its traditional role as low-cost power rate yardstick, and in my view, is in danger of losing this image because of the sharp increase in power rates over the past 7 years.

TVA rates are rising more rapidly than the Nation as a whole, and TVA customers are paying a higher electric bill because 4 out of 10 homes in the service area are all-electric.

In the Tennessee Valley area today, residential customers are paying approximately 65 percent more for the same amount of electricity used 7 years ago—and industries are paying 90 percent more.

We need some relief, gentlemen, and I appeal to you—I urge you—to look with favor on this bill.

I urge you to report this bill to the full committee—recommending prompt and favorable action thereon.

Thank you very much, Mr. Chairman and gentlemen.

Mr. JONES. Mr. Evins, you just stated that TVA has been a successful Government corporate agency, and has paid back all of its obligations, all of its incumbencies, and its assets are now approximately \$4.5 billion.

Now, we have another corporation that was established with the same amount of leeway as a corporate entity—the St. Lawrence Seaway. The Federal investment was to be repaid by tolls. Those tolls were not sufficient to make the debt payment and payment on the interest, so it became the policy of the administration to eliminate the interest. A letter transmitted to the Congress by former Secretary of Transportation Volpe made the following statement, and I quote:

Some of the assumptions upon which the Seaway debt payment plans have not proven out are the long term.

We oppose any increase on the present tolls on the Seaway, as we believe an increase in tolls would tend to discourage use of the waterway and, in turn, be detrimental to the growth of the midwestern economy.

The Office of Management and Budget has advised that this proposed legislation is consistent with the administration's objective.

Now, giving the TVA similar benefits to those contained in the Revenue Acts in which private utilities are given the accelerated tax writeoffs, do you think that it would certainly be consistent with the statement of Mr. Volpe in September of 1970?

Mr. EVINS. Certainly it would be consistent, and the scope and purpose of this bill is to make it consistent.

We are now operating in an inconsistent position where they are asking for relief for the St. Lawrence Seaway. They have provided for the relief of private utilities.

Mr. JONES. We have already provided that relief on the St. Lawrence Seaway, and we acquiesced in it, and we broadened it. We thought it was necessary for the economy of the area, and we have full faith in the assumptions and statements made by Secretary Volpe, and so the Congress responded in that fashion.

Mr. EVINS. I agree with the gentleman.

Mr. JONES. So now we have in the TVA a Government corporation that is fulfilling all of its fiscal obligations under the 1959 act, and also providing an asset which all the people of the United States enjoy and have an interest in.

Mr. EVINS. Well, I think that even more of an analogous situation is the Tax Reform Act of 1969, in which they recognized expenditures for pollution control, and gave an amortization for private utilities to write off expenditures for pollution control. TVA does not have that writeoff authority.

Mr. JONES. And all of us supported that notion, because we thought it was necessary for the private utilities and all other sectors. We thought it necessary to give relief.

Mr. EVINS. Gentlemen, times change, and conditions change.

TVA has had an image of low-cost power for years, and now it is rapidly losing that image, and unless this committee acts, I predict it will lose that image because of the enormous pollution requirements which have been imposed by law, and the statutory provisions requiring payment to the Treasury.

As I said earlier, I do not know any agency of Government that pays \$90 million into the Treasury annually.

This is a great support for our Government. The people of the area and the agency should have some relief.

Again, I hope that the committee in its wisdom will report and enact this bill.

Mr. JONES. We not only, in the act you refer to, went into the proposition of pollution controls, but we also gave fast writeoff for rehabilitating low-income housing, railroad running stock, coal mine safety training, child care facilities, et cetera.

Mr. EVINS. I am aware of those things across the board.

Mr. JONES. These were across the board in recognition of the enormous requirements that would be upon both industry and in the public sector to make repairs, if necessary, to abate the problems of pollution.

Mr. EVINS. We are all interested in a proper balance between power production and pollution control, but the Environmental Protection Act has required enormous cost expenditures by TVA, and this agency is just unable to bear these costs and comply with other provisions of the law.

I thank you very much, Mr. Chairman.

Mr. JONES. Mr. Baker?

Mr. BAKER. Thank you, Mr. Chairman.

Mr. Chairman, may I express my appreciation to the distinguished gentlemen of the Tennessee delegation for coming and testifying?

Mr. Evins recognizes the great value in his assessment of the situation. Long years of familiarity with TVA, and all of this accounts for the benefits for the Tennessee Valley Authority and the Nation.

Just recently, in a hearing at Cleveland, Tenn., where power rates were being discussed, it was mentioned by one person present that with the completion of Browns Ferry and Sequoyah nuclear plants the TVA system would be able to provide a backup source of electricity for the Eastern and Northeastern States. This person, in this instance, was contending that the TVA should look after local needs and allow the other parts of the country to look after themselves. This gave me an occasion to remind her and those present that TVA operates in the national interest.

We provide much energy for the Nation. TVA is the big reason the Atomic Energy Commission selected Oak Ridge as a site for the nuclear facilities there. An abundance of water and sufficient electric power are necessities in the atomic energy facility at Oak Ridge.

Again, we appreciate your being here, very much.

Mr. EVINS. Thank you.

Mr. JONES. Mr. Clausen?

Mr. CLAUSEN. Thank you, Mr. Chairman.

I do not have any questions. I will have more than ample opportunity to discuss the matter with the gentleman from Tennessee. He is always readily available to the members that are interested in projects that do come before this committee, and I am very much interested in your testimony.

I may have something I would want to discuss with you.

Mr. EVINS. Thank you.

Mr. JONES. Mr. Cochran?

Mr. COCHRAN. Thank you very much, Mr. Chairman.

I have no questions of the witness, Mr. Chairman.

I would like to extend my compliments to my colleague from my sister State, Tennessee, for his fine and helpful statement to the committee.

Mr. EVINS. Thank you very kindly.

Mr. JONES. Again, we thank you.

Mr. EVINS. I am sure the bill is in good hands, Mr. Chairman. I know this committee well. It is nice to work with you.

Mr. JONES. The gentleman from Georgia, Mr. Ginn.

Mr. GINN. No questions.

Mr. EVINS. Thank you.

Mr. JONES. Our next witness is our colleague from Alabama, the Honorable Tom Bevill.

Since Mr. Bevill has been in Congress he has been recognized as one of the hard workers, and has been rewarded by being placed on the Committee on Appropriations, and we are delighted to have you.

We are proud of the distinguished record that you are making in the Congress, Mr. Bevill, not only do we think so, but the people of your district have certainly demonstrated that by the fact that you have neither Republican nor Democratic opposition.

STATEMENT OF HON. TOM BEVILL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA

Mr. BEVILL. Thank you very much, Mr. Chairman. I appreciate that very fine introduction, and I am honored to get to appear before this distinguished committee, and certainly, as you know, Mr. Chairman, we on the Appropriations Committee follow the leadership of this committee when it comes to appropriate funds for public works.

We appropriate what this committee authorizes, as the chairman knows, and we certainly, each of us, respect the chairman and members of this committee very much.

Mr. Chairman, it is a pleasure to have this opportunity to testify in favor of H.R. 11929, a measure that I and many of my colleagues enthusiastically support.

In brief, H.R. 11929 would allow the Tennessee Valley Authority to credit its investment in pollution control facilities against its annual payments to the U.S. Treasury. This legislation would enable TVA to continue its progress toward building environmental safeguards into power production operations, and at the same time maintain its competitive standard as a low-cost energy producer.

Pollution control investment costs have been increasing to meet stringent air and water quality standards, and these costs are posing an ever-greater burden on consumers of TVA electric power.

The average bill for a TVA residential customer in 1973 was \$196.07, or about \$16.34 a month. By allowing a tax credit for pollution costs—the purpose of H.R. 11929—this rate would be reduced in the first year, it is estimated, by \$1.80, or the savings realized through the tax credit proposal could be used in place of borrowed funds for improvements of the system.

The Congress has enacted various measures that provide financial assistance to both private and public enterprise in meeting pollution control expenditures. The basis for this Federal assistance is that all citizens benefit from environmental improvement and all, therefore, should share in the costs.

In the case of private industry, for example, the Federal tax code allows the rapid depreciation of investment in pollution control facilities.

In the public sector, billions of dollars in direct Federal aid are being allocated to local governments to assist in the financing of water waste treatment facilities. In addition, the Federal Government provides municipalities with low-cost loans for waste treatment financing.

Yet, because of its unique charter, no Federal assistance is provided TVA for its investment in pollution control facilities, investments that must be made in order to comply with the law.

This is particularly ironic, since TVA has characteristics of both a privately owned power system and a publicly owned system. But in contrast to the financial aid given private and public organizations which enables them to shift a portion of their pollution control burden to the Federal Government, the entire cost of TVA antipollution expenditures must be passed on to consumers of electric power in the TVA service area.

Mr. Chairman, the measure that your committee is considering seeks to obtain fair treatment in regard to pollution control expenditures for the millions of people who live in the Tennessee Valley region.

Specifically, the proposed legislation would provide that in fiscal year 1975 and following, the certified pollution control expenditures by the TVA for the preceding year would constitute a credit against the dividend requirement.

Should the certified pollution control expenditures in the previous year exceed these requirements, the sum in excess would be applied as a reduction in the Federal appropriation investment.

Since TVA's environmentally related expenditures now run about \$150 million a year, the effect of H.R. 11929 would be to relieve TVA of any payment to the Treasury, while reducing somewhat the outstanding Federal appropriation investment.

Under the proposal, the TVA Board would certify the environmental control investments to the Environmental Protection Agency, which would in turn certify them to the Treasury as being in compliance with Federal regulations.

Mr. Chairman, the Federal Government, through its various assistance programs has decided that all citizens should share in the cost of environmental control investments. But, evidently through an oversight, TVA has been forced to impose the full costs of antipollution expenditures on its own power consumers.

The measure before you today, by allowing TVA a tax credit on its pollution control costs, would result in a more equitable treatment of TVA power consumers compared to those of the Nation as a whole.

Citizens from all over the United States have benefited considerably, and continue to realize advantages from the TVA system. Electric bills throughout the Nation, for example, are lower thanks to the TVA.

Also, with serious energy problems being experienced across the country, it should be kept in mind that TVA has the capacity to transfer power to areas short of oil and other fuels necessary for the production of electricity.

Mr. Chairman, H.R. 11929 will help insure a continuing leadership role for TVA in the efficient production of power, a role vital to the Tennessee Valley region and to the Nation.

Thank you.

Mr. ANDERSON [presiding]. Thank you Tom.

Are there any questions?

Mr. BAKER. Mr. Chairman, I do want to express my appreciation to my distinguished colleague who joins me in the South, just across the border in Alabama, along with my colleague, Mr. Jones, and we enjoy a fine working relationship.

You refer to the measure here which we have recommended for giving relief on pollution control.

Do you recall any instance in the past where the TVA has sought any sort of relief so far as its operating burden is concerned in its normal expenses of producing power?

Mr. BEVILL. Insofar as I know, this is the first time we have ever asked for any type of credit like this.

As you know, the TVA is really one of the very few agencies of the Government that puts money into the Treasury.

I think the Export-Import Bank does, and of course, the Internal Revenue Service, and that is about it.

Mr. BAKER. And this comes in conjunction with relief which is recognized as being equitable for private enterprise on the fast write-offs for pollution investments, and every possible relief to provide the public with clean air, clean water on the general basis without burdening the small segments of the taxpaying public.

Mr. BEVILL. Yes; the entire public really benefits from this. It is not just those of us that are in the TVA area, because of the anti-pollution elimination of pollution, I should say, this in itself, but not only that it also helps to hold the rates in line of the private power companies.

This has proven true throughout the life of TVA.

Mr. BAKER. Thank you, Mr. Chairman.

Mr. JONES [presiding]. Mr. Cochran?

Mr. COCHRAN. Thank you, Mr. Chairman.

Mr. Chairman, I would like to extend my thanks to my able colleague across the border from Alabama for taking the time and giving us his views on the legislation.

I appreciate it very much.

Mr. JONES. The gentleman from Georgia.

Mr. GINN. Thank you, Mr. Chairman.

Mr. Chairman, I just want to say to our distinguished colleague that we appreciate his testimony, and will say he does his homework.

Mr. JONES. Again, we thank you, Mr. Bevill.

Is Mr. Fulton here?

Are there other members here?

The Chair will take a recess until 11 o'clock. I do that in order to await the members who are in attendance at the Republican caucus.

The Chair did not know that the caucus was scheduled until approximately 13 minutes before the committee went into session.

We will be in recess until 11 o'clock.

[Whereupon, at 10:35 a.m., the committee recessed, to reconvene at 11:01 a.m.]

Mr. JONES. The committee will come to order.

Our colleague, Hon. Richard H. Fulton, is not able to be with us this morning, and I want to direct the reporter to place his statement into the record at this point.

[The statement referred to follows:]

STATEMENT OF HON. RICHARD H. FULTON, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF TENNESSEE

Mr. Chairman and distinguished Members of the House Public Works Committee, I appreciate very much the opportunity to submit this statement in behalf of H.R. 11929 of which I am privileged to be a co-sponsor.

The cost of energy in America today is moving upward at a dizzying rate. But all of this pressure on price cannot be attributed to increased costs of energy fuels though. Environmental considerations necessary to the restoration and maintenance of quality to our environment, considerations which have been weighed by the Congress and which are now public policy in this Nation, also factor in to the upward pressure on cost.

What this H.R. 11929 legislation is designed to do is to establish a more equitable distribution of the impact of the cost of our environmental controls.

It has been noted that an unusual paradox exists under our present Federal law. Private companies can obtain write offs or credits for expenditures on pollution control equipment. This is available to these firms on the grounds that environmental control devices produce highly desirable benefits contributing to the general welfare. I have no argument with this form of relief.

The paradox is, however, that the Tennessee Valley Authority, a Federal corporation wholly owned by the United States government and the people of this Nation, gets no credit whatsoever for its huge expenditures for pollution control which right now total about \$150 million a year. Tennessee Valley Authority power consumers are currently paying directly for these costly outlays through their electric bills.

This legislation would give the Tennessee Valley Authority and its owners, the people of the United States through the Federal government, a more equitable consideration for these expenditures by giving them benefits similar to those enjoyed by private power consumers afforded by the tax deduction and credit.

This would be done by crediting the TVA's expenditures for pollution control against the required annual payment by the Authority to the Treasury.

Mr. Chairman, I believe this proposal is equitable to the taxpayers, it is fair to the people of the Tennessee Valley region, and I respectfully urge that it be considered favorably by the Members of this Committee.

Mr. JONES. We will proceed now to hear from our colleagues in Congress, commencing with Mr. Bowen, from the State of Mississippi.

STATEMENT OF HON. DAVID BOWEN, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF MISSISSIPPI

Mr. BOWEN. Mr. Chairman, my district is the second district located in north Mississippi and about one-half of it is within the Tennessee Valley. TVA power, I might add, is used by about one-quarter of the State of Mississippi.

TVA is many things: flood control, navigation, recreation, forestry; but a central benefit is electric power and the regional development which that power has encouraged. In 1972, 41 new industrial plants and 37 plant expansions utilizing TVA power, were announced in Mississippi. This development brought investment of nearly \$34 million and creation of close to 7,400 jobs. In 1973, 24 new industrial plants and 25 plant expansions utilizing TVA power, were announced in Mississippi. This development brought investment of nearly \$27 million and creation of close to 5,400 jobs. TVA and its inexpensive power have been vital elements in the development of northeastern Mississippi and the entire Tennessee Valley region.

The coming years are going to be tough for the electric power industry. Fuel costs are increasing and environmental regulations are tightening. If TVA is forced to raise its rates or slow down its service expansion too sharply, it could have truly disastrous effects on the economy of my region.

As a former coordinator of Federal-State relations for Mississippi, I would submit that TVA has been a model in local Federal cooperation and in citizen participation and has been in the vanguard in implementing innovative conservation and environmental programs. TVA was doing major work in flood plain management long before evident current interest. TVA has been strongly criticized for its strip mining activities, but it has also been one of the chief innovators in strip mine reclamation techniques.

TVA has made great strides in reducing air and water pollution from its generating plants but there is work remaining and this could prove a very heavy burden to the TVA power program which is so vital to the welfare of our region should it attempt to do so without passing on the work. Mr. Chairman, this bill involves a subsidy but one that is well justified by the admirable way in which TVA power continues to pay its own way. With this bill TVA could mount a truly all-out drive for environmental quality which would serve as a demonstration program to the Nation just as so much of TVA's work has.

I believe it equitable to allow TVA customers, public power users, the benefits of pollution control expenditure relief as a cost saving factor. I am pleased to say that power associations utilizing TVA energy service all or part of 8 of the 16 counties I am pleased to represent.

Mr. JONES. Thank you Mr. Bowen. Next, Representative Jamie L. Whitten.

STATEMENT OF HON. JAMIE L. WHITTEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSISSIPPI

Mr. WHITTEN. Mr. Chairman, I was pleased to join with the other members of Congress from the service area of the Tennessee Valley Authority in sponsoring H.R. 11929 to counteract some of the factors which are causing electric rates to spiral upward in the Tennessee Valley region.

About one-half of the people in the district from which I have been elected are served with TVA power and I have known first hand of the problems which are causing higher electric rates in the area.

Attempts to compare TVA to other types of systems and the corresponding failure to recognize the uniqueness of the TVA's concept, organization, direction, and operation has lead to many misconceptions.

It is said TVA does not pay taxes. What it does do is make payments in lieu of taxes. The TVA is required by law to return its profits to its customers, after paying its indebtedness, bonds, notes and interest. In addition, TVA has a limit on its geographic territory.

The TVA was established and is a wholly owned Government corporation created to achieve specific purposes:

That for the purpose of maintaining and operating the properties now owned by the United States in the vicinity of Muscle Shoals, Alabama, in the interest of the national defense and for agricultural and industrial development, and to im-

prove navigation in the Tennessee River and to control the destructive flood waters in the Tennessee River and Mississippi River Basins, there is hereby created a body corporate by the name of the "Tennessee Valley Authority".

The citizens of the entire country are the sole owners of the TVA and have realized vast benefits from the operation of the corporation.

As it is a part of the TVA, the power program and its facilities are also solely owned by the United States.

Speaking through the Congress, the United States has set the TVA policy in regard to power rates, the power rate structure, the service requirements, the territorial limits, labor costs, the dividend payments and, under conditions most regulatory agencies would reject, the terms for recovery of the capital investment.

These policies are subject to change and have been altered through the years. The original TVA Act in 1933 established the policy for operation of the power system as follows:

The net proceeds derived by the board from the sale of power and any of the products manufactured by the Corporation, after deducting the cost of operation, maintenance, depreciation, amortization, and an amount deemed by the board as necessary to withhold as operating capital, or devoted by the board to new construction, shall be paid into the Treasury of the United States at the end of each calendar year.

This was altered slightly in 1935 to provide:

Commencing July 1, 1936, the proceeds for each fiscal year derived by the board from the sale of power or any other products manufactured by the Corporation, and from any other activities of the Corporation including the disposition of any real or personal property, shall be paid into the Treasury of the United States at the end of each calendar year, save and except such part of such proceeds as in the opinion of the board shall be necessary for the Corporation in the operation of dams and reservoirs, in conducting its business in generating, transmitting, and distributing electric energy and in manufacturing, selling and distributing fertilizer and fertilizer ingredients. A continuing fund of \$1,000,000 is also excepted from the requirements of this section and may be withheld by the board to defray emergency expenses and to insure continuous operation: *Provided*, That nothing in this section shall be construed to prevent the use by the board, after June 30, 1936, of proceeds accruing prior to July 1, 1936, for the payment of obligations lawfully incurred prior to such latter date.

Another change in requirements of the TVA power program was made through title II of the Government Corporations Appropriation Act of 1948. This called for amortization over 40 years of the appropriated funds invested in power facilities. This provision I wrote.

The Congress, speaking for the owners of the TVA, and, up to that time, the major supplier of funds made still other changes in the management of the appropriated investment in 1959 through the self-financing amendments. This established an annual repayment sum and required a dividend on the outstanding balance.

Conditions had changed since the original 1933 legislation and the Congress was responsive to the situation of that time.

The TVA system, however, remains unique in our national experience.

Since 1959, conditions in the country have changed considerably. National requirements for control of pollution have increased. The treatment of corporate income and profits for tax purposes has been altered to reflect changes in national objectives. In 1959, for example, Federal taxes on corporate profits amounted to 10.6 percent of sales income from electric utilities. By 1971, before the full effect of all the recent tax changes, Federal taxes on profits amounted to only 4.3 percent of sales income.

In the same year, the TVA payments in lieu of taxes to the States and the distributor payments to States and local governments amounted to more than 6 percent of sales revenues. In addition, the TVA made payments to the U.S. Treasury of nearly 15 percent of sales income.

By providing credits against Treasury payments for expenditures for environmental facilities, our proposal will encourage a better environment and provide some relief for the ever increasing rates for electric power.

All this does not mention the beneficial effect TVA policies have had on private companies.

Mr. JONES. Thank you, Mr. Whitten. Next, Hon. Phil Landrum, from the State of Georgia.

STATEMENT OF HON. PHIL M. LANDRUM, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. LANDRUM. Mr. Chairman, thank you for this opportunity to testify before the committee.

In this time of concern over energy shortages and rising prices, the Tennessee Valley Authority is most often referred to as a model organizational structure for energy development and distribution. We should not forget, however, that this uniquely successful demonstration of Federal and local cooperation is an all-round conservation agency that seeks wise management of all resources. Maintaining a quality environment while fostering economic development has always been TVA's primary objective.

TVA's water resource development work has had a tremendous impact on the region by controlling floods and making commercial navigation possible in many areas. And this was not done with disregard for environmental considerations. Flood plain management, which has only become important nationally in the past few years, has long been a part of TVA's flood control efforts. Recreation has been a basic consideration in all TVA projects: The nationally known Land-Between-the-Lakes recreation area is an example.

One of the earliest and most beneficial accomplishments of the TVA was cooperation with individual farmers in fostering good soil conservation practices. Prior to TVA, soil erosion was one of the area's severest problems.

Thus we see that TVA works through two paths to improve the quality of life in the region. One of these—the provision of abundant, inexpensive power—has been a self-supporting operation; it is perhaps the Nation's best example of a successful public enterprise.

The other path—wise cooperative management of natural resources to produce and maintain a quality environment—has always enjoyed, as it should, the support of the Federal Government. We must be realistic and recognize that the profusion of inexpensive power has been a very important factor in the development of the region. It would be a serious setback to current plans if rising fuel costs and the high cost of pollution control equipment nullified this ability to furnish low-cost electricity to consumers. Since pollution control equipment is in keeping with federally supported efforts at conservation and environmental protection, allowing credit for such expenditures to TVA would not be at all inappropriate. With this credit, TVA could serve as a model for the Nation in pollution control technology, just as it has in so many other areas.

Thank you.

Mr. JONES. Next, Representative James H. Quillen.

**STATEMENT OF HON. JAMES H. QUILLEN, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF TENNESSEE**

Mr. QUILLEN. Thank you, Mr. Chairman and members of the House Public Works Committee, for providing me this opportunity to appear before you in support of H.R. 11929, a bill to counteract some of the factors forcing increases in the Tennessee Valley Authority electric power rates.

I have cosponsored this measure along with 17 other Members of Congress, including 2 members of this committee, Congressman Robert Jones and Congressman LaMar Baker.

The proposed legislation deals with a common problem—the continuing rate increases by the Tennessee Valley Authority. I have received hundreds and hundreds of letters recently from my constituents in the first district who are greatly concerned about their monthly electric bills, and they certainly have a right to be upset about these increases.

The increase in TVA electric power rates is exorbitant. Electric bills, in many cases, have more than doubled in 1 month's time, according to my mail. One constituent in my district writes, "My bill jumped from \$42 up to \$90 and, as my social security disability check is for only \$101.54, I'm either going to freeze to death or starve."

We must, by all means, ease the burdens of TVA consumers, particularly those living on fixed incomes, and the 7-percent cost of living increase in social security benefits won't even take care of the increase in their electric bills, much less the increase in the cost of other necessities, such as food and clothing.

The bill would lessen the requirement for increases in rates due to environmental expenditures by placing the costs of pollution control equipment against the payment that TVA is required to make to the Federal Government. This measure, therefore, would eliminate an inequity within the TVA system and would pass the benefit along to the consumer.

This inequity exists because private corporations are allowed tax credits for their adoption of pollution-control devices, while TVA, which is owned by the Government, passes the cost of the equipment on to the consumer.

This bill provides for the cost of air and water pollution equipment to be certified as a credit and payment in lieu of that required as dividends and repayment of appropriations to the Federal Government. So, in the same manner that private industry is allowed tax credits for the addition of environmental equipment, TVA will be allowed to credit its pollution-control expenditures against the interest of payments and the amount of repayments of appropriated funds that TVA makes annually to the Government. In this way, this measure will counteract some of the factors responsible for this astronomical hike in TVA electric rates.

I urge this committee to give favorable consideration to this measure, as it would mean so much to those people depending on TVA for their electric power.

Thank you.

Mr. JONES. Thank you. Next, the Honorable Walter Flowers.

**STATEMENT OF HON. WALTER FLOWERS, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF ALABAMA**

Mr. FLOWERS. Mr. Chairman, although the Tennessee Valley Authority serves only a small percentage of the district I represent with electric power, I am pleased to join in the sponsorship of H.R. 11929 because of the great value of the TVA system to all citizens.

The people in 10,800 homes and businesses in the Bessemer, Ala., area receive electric power from the TVA, and they have been concerned with the constantly increasing cost of power. This legislation could counteract some of the factors which are causing these increases.

Other people in the district have gained from other aspects of TVA activities. The fertilizer technology developed by TVA has been of great value to all farmers. The University of Alabama in Tuscaloosa has, from time to time, participated in research activities sponsored by the TVA.

Because the electric power system is interconnected with surrounding electric power systems through a number of high-capability transmission lines, all residents have received advantage from the TVA power operations. TVA has entered into contractual arrangements with a number of privately owned utility companies and cooperatives whereby various services are provided the respective parties through these interconnections.

One of the important services included is the provision for diversity capacity exchange which allows TVA and other systems to exchange power on a seasonal basis thereby eliminating the need for an equivalent amount of additional generating capacity on each system. These contractual arrangements also include such services as the concurrent exchange of power and provisions for furnishing maintenance energy and emergency assistance.

Emergency assistance between interconnected systems is quite important since power can flow back and forth when needed to help relieve emergency situations that sometimes threaten the reliability of electric power service. Practically all power systems east of the western United States, with the exception of those systems in Texas, and systems covering much of Canada are linked together by a large network of interconnections. Since TVA constitutes a sizeable portion of this network, the TVA power system adds substantially to the reliability of the Nation's power supply.

TVA participates in most electric power utility industry activities, such as the National Electric Reliability Council (NERC), North American Power Systems Interconnection Committee (NAPSIC), Electric Power Research Institute (EPRI), Atomic Industrial Forum (AIF), The Liquid Metal Fast Breeder Reactor Demonstration Plant project, and many other such activities that influence the country's power industry and electric power service to the Nation's citizens and industries.

I urge your approval of this proposal to provide the TVA with credits for environmental expenditures.

Mr. JONES. Next, Representative Robin Beard from Tennessee.

**STATEMENT OF HON. ROBIN BEARD, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF TENNESSEE**

Mr. BEARD. Mr. Chairman, I welcome this opportunity to testify in favor of H.R. 11929, which I was pleased to be able to cosponsor with a number of my Tennessee Valley colleagues. I will be very brief.

The benefits to the average residential customer of allowing TVA to credit its investments in pollution control equipment against its annual payments to the U.S. Treasury will be tremendous. The first year reduction in the TVA's cash requirements under H.R. 11929 has been estimated at \$83.4 million, which works out to approximately 11 percent of the average electric bill. Further, the value of the proposal to TVA power users could increase each year as the TVA's cost requirements were reduced through the credit, and a lesser need to borrow money.

Mr. Chairman, rates for the average TVA-region household have skyrocketed in recent weeks, in some cases increasing as much as 200 percent in 1 month. I feel that any proposal which can help reduce this awesome burden must be favorably acted on as quickly as possible.

This legislation will put the TVA on an equal plane with private industry, in allowing it to receive some financial benefits from its effort to combat air and water pollution. We all agree that anti-pollution devices are good; they help to restore and preserve our environment. But, they are also expensive. Attempts to fulfill the requirements of the various EPA standards have sometimes resulted in ruin for the small businessman. Now, I am surely not suggesting that TVA is being forced into bankruptcy because of its pollution abatement and control measures. But the fact of the matter is that these efforts to comply with the mandates of the Federal Government have proven to be very costly, and I feel that the TVA and the people of TVA region deserve a break. This legislation, Mr. Chairman, will give them this badly needed break, and it is my hope that this committee and the full House will act very soon to pass H.R. 11929.

Thank you very much.

Mr. JONES. Our next witness is Mr. Donham Crawford, president of Edison Electric Institute of New York.

We are pleased to have you.

STATEMENT OF W. DONHAM CRAWFORD, PRESIDENT, EDISON ELECTRIC INSTITUTE OF NEW YORK; ACCOMPANIED BY EDWARD FRYE, ASSOCIATE FROM THE EDISON ELECTRIC INSTITUTE

Mr. CRAWFORD. Thank you, Mr. Chairman.

Mr. JONES. Identify your associate.

Mr. CRAWFORD. This is Mr. Edward Frye, my associate from the Edison Electric Institute.

My name is W. Donham Crawford, president of the institute, which is the principal national association of the investor-owned electric utilities companies.

Mr. Chairman, I would like to preface my remarks by paying tribute to the high degree of cooperation and coordination that exists between the Edison Electric Institute, its member companies throughout the country, and TVA.

We work together very constructively in many ways, such as in the building of the first breeder demonstration project, the Electric Research Council and its successor, the Electric Power Research Institute, the Electric Power Council on the Environment, a study on providing adequate enrichment facilities for the Nation's utilities, electric reliability, exchanges of power, and exchanges of information on many subjects.

We have a very high regard for Mr. Wagner and his associates.

Mr. Chairman, I appreciate this opportunity to testify here today.

H.R. 11929, if enacted, would make certain changes in the Tennessee Valley Authority's obligation to the U.S. Treasury by offsetting against payments that would otherwise be due, TVA's expenditures for certified pollution control facilities under the Federal Water Pollution Control Act and the Clean Air Act. Such expenditures are being required of all electric utilities throughout the United States, and will amount to billions of dollars.

The Environmental Protection Agency, in its 1972 annual report, estimated that \$10.7 billion will be required to meet electric generation pollution requirements from 1972 to 1976.

In the electric utility industry expenses for pollution control are a cost of doing business and, as such, are included in the customer's bill.

However, H.R. 11929 would reverse that process for some of the Nation's electric customers, namely those served directly or indirectly by the TVA. They would be relieved of the cost of paying for pollution control, and those costs would be absorbed by the Treasury Department. Because H.R. 11929 would promote inequity among users of electricity the institute recommends the bill not be enacted.

The institute believes that the customers of one electric system should not enjoy advantages in their electric rates that are not available to all customers of electric service. To promote this type of inequity is, we believe, regressive legislation in that it favors one citizen over another.

H.R. 11929 would do just that. It would remove from the bills of the customers served either directly or indirectly by the TVA, 100 percent of the cost of certified pollution control facilities.

No such advantages would be made available to customers served by other electric utilities whether they are investor-owned, municipally owned, or cooperatively owned, if they are outside the TVA service area.

The Congress has recognized in certain instances, that costs of some programs are, or can be, burdensome. Pollution control is one specific area where the Congress, in the Tax Reform Act of 1969, provided for a 5-year amortization for investments in some pollution control equipment if certain conditions are met.

Other enactments by the Congress have provided some tax abatement through reduction or deferral of Federal income tax payments to promote national objectives. These abatements have, in most cases, been made available in the same manner to business across the board. (One notable exception is the investment tax credit that Congress established at 7 percent for most businesses, but at 4 percent for electric utilities.)

The point should be made that these tax abatements and deferrals are available to businesses that are obligated to pay Federal income taxes, and none of them comprise a complete exemption from Federal income tax.

A basic principle involved in H.R. 11929 is that of treating taxpayers under similar circumstances in an unequal manner, and we believe that should be the overriding consideration for this committee to reject the bill.

We wish to point out, also, that its passage would no doubt result in a substantial loss to the U.S. Treasury. We hope the committee will receive and consider a report from the Treasury Department in this regard.

The institute does not believe the customers of the TVA should be subject to charges that are not included in the bills of the customers of other electric systems.

It is our understanding that the State of Tennessee is among those States that authorize tax-free financing of pollution control facilities through municipally issued bonds.

Thus, the option is presently open to the TVA to use municipally issued tax-free bonds to finance pollution control equipment, just as electric companies are doing in those States that authorize this practice.

If there is some doubt about the authority of the TVA to engage in this type of financing, the Congress could give the TVA that authority. If this course were followed there would be no discrimination against the customers served, directly or indirectly, by the TVA by virtue of the financing of pollution control facilities.

That completes my statement, Mr. Chairman, and I would be pleased to answer any questions.

Thank you.

Mr. JONES. How do you differentiate between the benefits that would accrue to TVA, as distinguished from the benefits you receive under the present law?

Mr. CRAWFORD. The way I would differentiate it, Mr. Chairman, is that the benefits that would accrue by virtue of the bill would be paid for in effect entirely out of the Treasury.

Mr. JONES. Yes, sir.

Mr. CRAWFORD. Whereas the benefits to the companies are a reduction of the taxes they otherwise would pay.

Mr. JONES. Well, that is the same thing, is it not?

Mr. CRAWFORD. No, sir, I do not think so, because the Treasury pays 100 percent for it, for TVA, but not 100 percent for the company.

Mr. JONES. Yes; and you have another tax writeoff. You started with what, three acts are available, none of which are available to TVA, and the proposal is confined only to that category of projects not anticipated in the 1959 act—that is, new pollution control investments.

Under the Internal Revenue Code you would get the total amount of writeoff and you combine it with the other two schemes of tax benefits that TVA presently does not get.

Mr. CRAWFORD. Yes, sir, we take whatever advantage of the tax advantages that are available, but still pay a very large tax bill.

Mr. JONES; I understand you do, but 10 years ago private utilities were paying around 12 percent of the operating revenues and last year you paid just a little in excess of 3 percent.

Mr. CRAWFORD. I think it would be somewhat larger than that. I think we paid \$1.2 billion, on the basis of our most recent figures, out of a revenue of \$24 billion.

Mr. JONES. In 1972 you paid 3.5 percent.

Those, I might add, are Federal Power Commission reports.

Mr. CRAWFORD. Well, I would not quarrel with the Federal Power Commission. It sounds low to me.

Mr. JONES. In 1970 you paid 5.6 percent.

Mr. CRAWFORD. Yes, sir.

Mr. JONES. In 1971, you paid 4.3 percent. Now, the last year, you paid 3.5 percent, so you have a tax advantage that is going down, down, down, and the benefits that accrue are going to the consumers, I suppose.

Mr. CRAWFORD. Yes, sir.

Mr. JONES. Now, why should not the consumers of TVA have the same, or just one of the many benefits that you presently enjoy?

Mr. CRAWFORD. Well, TVA has a very substantial benefit which we do not enjoy, namely, that they do not pay any income tax.

Mr. JONES. Yes, but that is comparing apples and oranges. This is a Government corporation, so you are beneficiary of the equities developed and the capital improvements that are gained as a taxpayer, so you get the better end of the bargain, because you do not live down there, and you do not consume electricity, so we who consume down there are paying for a giant, valuable operation of certain national significance, both in defense and the economic growth and development and prosperity on which that area depends.

It has had a low income. We have gone up now to approximately 73 percent of the national average in income because of the fact that we are developing from an agriculture economy into a manufacturing area.

We also have better schools. I am quite sure that that is a great joy to you and to the private utilities, to see that TVA flourishes and prospers.

Mr. CRAWFORD. It certainly is.

Mr. JONES. And to the people who are paying for the great benefits of that great investment for you.

I would hope it would not flounder down the road.

Ms. Abzug?

Ms. ABZUG. I would like to get your opinion as to what you think would be equitable terms in balancing out some of the tax advantages presently enjoyed by the electric utility industry which are not enjoyed by TVA, and how you would handle this situation.

We have been talking around it in your testimony and in your responses to the Chairman.

Mr. CRAWFORD. It seems to me that the first way to deal with this question of financing pollution control facilities would be to have the TVA finance them in the same way that private companies do.

Not all companies do this, but some do, depending on the State that they operate in. They use tax-free bonds, thereby reducing the cost of the financing, so instead of perhaps having to sell an 8-percent bond, you can sell a 6-percent bond.

Now, it is my understanding that the State of Tennessee also provides the ability to finance in this way, and the TVA could finance their pollution control facilities accordingly, by using the credit of the municipalities of Tennessee. That would be completely similar.

Ms. ABZUG. I take it that one of the things that was being discussed between yourself and the Chairman was that investor-owned utilities enjoy greater privileges in terms of tax deductions and certain accelerated depreciation lines than does the TVA when it seeks to finance new capital investment.

Mr. CRAWFORD. I do not think I could agree with that.

Ms. ABZUG. You do not agree?

Mr. CRAWFORD. No; we do have some tax benefits, as other taxpayers do, but these are a reduction in the Federal taxes that we pay, which are still running well over \$1 billion, and TVA does not pay any Federal taxes, so it is hard for me to rationalize that we are in a much better position than TVA is in.

Mr. JONES. Will the gentlelady yield?

Ms. ABZUG. Yes.

Mr. JONES. You say they do not pay any taxes. What do you call the \$20 million TVA has to pay into the Treasury each year?

What about their accrued assets? What do you call that?

Mr. CRAWFORD. A repayment of appropriated funds.

Mr. JONES. Yes; but we capitalize those appropriated funds and we pay them back.

Mr. CRAWFORD. Yes.

Mr. JONES. The TVA pays \$20 million a year plus approximately three times that as a return on the investment, which is a substantial payment.

I do not see how you can make the distinction of you paying taxes and TVA paying a high percentage of their revenues.

Mr. CRAWFORD. I understand TVA's payments are twofold; one is the payment on the unamortized investment and the other is repayment of the appropriated funds.

Mr. JONES. I thank the gentlelady for yielding.

However, let me ask this.

One of the replies you made to Mrs. Abzug suggested that TVA go to tax-exempt bonds, and I presume you mean they would issue the bonds and made a pro rata contribution to the bonds. Next, you raise the legal question as to whether or not TVA had that authority, and so if there is any doubt in your mind, it would be better to proceed here without putting off to the future the question as to the tax-exempt municipal or State bonds.

Mr. CRAWFORD. Well, it does seem to me, Mr. Chairman, that would be the most equitable way to deal with these expenditures, and I do not know whether Tennessee has this authority or not.

It is my understanding, however, that they do, Mr. Chairman.

Mr. JONES. The private utilities have been using that device.

Mr. CRAWFORD. Yes, sir.

Mr. JONES. So TVA does not use that device. We are without once again a liberty that you have.

Mr. CRAWFORD. Again, it is a reduction in the amount of Federal income taxes we pay, though.

Mr. JONES. Are you aware of the schedule in the bond market, how much interest that TVA has had to pay?

Mr. CRAWFORD. Yes, I am more than aware of it. Private companies do, too.

Mr. JONES. Well, we do not take that off as taxes, though.

Mr. CRAWFORD. No, not if you do not pay any.

Ms. ABZUG. The question that concerns me about this is do you regard the TVA as sort of a pilot, or an example, of what the other electric utilities should be doing?

Mr. CRAWFORD. No, I do not regard it as a pilot.

Ms. ABZUG. Yes.

Mr. CRAWFORD. No, madam, I do not.

Ms. ABZUG. Or as a measure with which to judge the private utilities. That was the original intention of the legislation, as I recall it.

Mr. CRAWFORD. I do not regard it as a yardstick, because they do not pay taxes. If they did, it would be a yardstick.

Ms. ABZUG. In other words, if this legislation were passed, where the TVA is permitted to write off in 1 year the cost of pollution control devices, you would not regard that as a yardstick, whereby other utilities should ask for the same.

Mr. CRAWFORD. I think it would exacerbate the differences in financing between TVA and the private companies.

Ms. ABZUG. Because that is one of the things that would concern me.

Let me ask you another question.

Do you finance your pollution control techniques through municipal bonds?

Mr. CRAWFORD. Some of the companies do, depending on whether their State has a sanction for that type of financing.

Ms. ABZUG. And those that do not, what do they do?

Mr. CRAWFORD. They just expense them against income, finance them in the regular money markets without tax-exempt benefits.

Ms. ABZUG. Do you not depreciate over a period of 5 years?

Mr. CRAWFORD. Yes.

Ms. ABZUG. So you testified that under the statute of 1969 we have a 5-year amortization for investment for pollution control, right?

Mr. CRAWFORD. Yes.

Ms. ABZUG. So either you find it more profitable to use the 5-year depreciation, or you use the municipal tax-free bonds, right?

Mr. CRAWFORD. Yes.

Ms. ABZUG. So that you would actually do better than what is provided under the Tax Reform Act by the use of municipal bonds.

Mr. CRAWFORD. Yes, you would benefit from that.

Ms. ABZUG. What effect does that have upon the rate for electricity charged?

Mr. CRAWFORD. It would tend to hold down the rates to the extent that you could make savings on your financial charges, and it would tend to hold down the rates.

Ms. ABZUG. Well, has it held down the rates?

Mr. CRAWFORD. It has served, I would say, to keep them from going up more.

Ms. ABZUG. I come from New York, with which I think you are familiar. We just had a terrific increase in Consolidated Edison rates, so I just wonder what the relationship of all this is. What are the relationships of all these tax advantages to rates, for example, to Consolidated Edison rates?

Mr. CRAWFORD. There is a very direct relationship. Con Ed pays an enormous amount of State and local taxes, I suspect about \$300 million a year, far more than any other company in the country, and that is one of the ingredients as to why their power rates are so high.

Ms. ABZUG. It is interesting that we have given all these opportunities to some of the utilities to write off some investments which would lower the taxes, and at the same time we have an increase in power rates.

Some of the people are concerned, and make the point that if we write off the pollution control equipment in 1 year that it will lower the rates, and that would be good for the consumer.

I am talking about the general consumer, and some people feel that is a bad thing to do now, because it might encourage energy consumption.

It is an interesting social conflict we are discussing in this little bill. We started out TVA to get low-cost power for people. Now, there is a question of whether lower rates of power creates an unnecessary increase in the use of power, which then impinges upon our need to conserve energy.

It is interesting that in your company nothing causes the rates to be lower. They are always going higher.

Mr. CRAWFORD. I do not believe that is quite true.

Ms. ABZUG. I do not know why that is, and I am not convinced that the legislation is desirable that is before us. What concerns me about this legislation is if we give TVA a writeoff in 1 year, you power companies will come to the FPC and say "me too," claiming that it will give consumers lower rates, but all we get is higher rates.

I want to know why we give you any of these tax advantages when in New York we are paying more for electricity than we have ever paid before in the history of this country. Where are the effects of all of these tax advantages you have had?

Mr. CRAWFORD. The history of electric power rates is almost unique in this country having been decreased over a long period of time.

It was only in the last 3 or 4 years the rates went upward. The reason for this is that everything the power companies use to produce power has gone upward as well. The answer to your comment about why power rates keep going up despite the tax advantages is that if we did not have the tax advantages that Congress has seen fit to give to all industry, the rates would go up more.

Ms. ABZUG. Is that your theory?

Mr. CRAWFORD. Yes, madam.

Ms. ABZUG. Well, I am not convinced of that, and I would like to see more TVA's, because I think that you really are exploiting the majority of the people in this country with your rates.

The problem I have with this is, if we pass this legislation, you are going to be the first one to say we want the same 1-year writeoff advantage.

Mr. CRAWFORD. We want equal treatment.

Ms. ABZUG. And that is what concerns me about this legislation. Will you make me a promise that you will not?

Mr. CRAWFORD. No, madam, we want equal treatment.

Ms. ABZUG. You see, you are going to come in and ask for equal treatment. This is our problem, Mr. Chairman.

Mr. CRAWFORD. All we want is equal treatment.

Ms. ABZUG. You see, they want equality under the law. They control everything, but they want more. That is what it means.

Thank you, Mr. Chairman.

Mr. JONES. Mr. Snyder?

Mr. SNYDER. I am sure what the gentlewoman says is accurate, the companies want a total writeoff, rather than the 50 percent they now get.

What would be your attitude if the committee in its wisdom reported the bill with TVA getting a 50-percent writeoff in their obligations to the Federal Government, rather than 100 percent?

Mr. CRAWFORD. It is a little difficult for me to correlate the Treasury's bearing the cost of pollution control in the case of TVA and a reduction of Federal income taxes for private power companies.

Mr. SNYDER. It is complicated because you take what, a 4- or 7-percent tax investment credit?

Mr. CRAWFORD. Four percent.

Mr. SNYDER. And then you depreciate the cost of the equipment over a period of years.

Mr. CRAWFORD. Yes, sir.

Mr. SNYDER. I understand that is roughly a 50-percent tax benefit for you, is that right?

Mr. CRAWFORD. If you start out with the fact that the corporate tax rate is 48 percent, and you put the investment tax credit in, I would not quarrel with the 50-percent aspect of it.

Mr. SNYDER. How would you feel about this legislation if, in fact, it referred to 50 percent instead of 100 percent?

Mr. CRAWFORD. I think the answer to that is the one I originally gave.

It seems to me it is like mixing apples and oranges, and if we want to treat the two kinds of systems exactly alike, TVA's pollution control expenditures can be financed through the municipal bonds.

Mr. SNYDER. If you want to treat them alike, and TVA is not paying anything off against their obligations, how about you not writing anything off?

Mr. CRAWFORD. We would expect to use whatever advantages there are available in the tax system.

Mr. SNYDER. I understand that, and I am inclined to feel like Ms. Abzug, that equality is what we ought to be looking at in the treatment of what we are talking about in this bill.

On the other hand, I am not sure that is what you are looking for, if you will not buy a 50-percent proposition.

Mr. CRAWFORD. You are talking about 50 percent of the payments that were called for in the 1959 revenue bond action?

Mr. SNYDER. The TVA is paying back their stockholders. You only pay a return on the investment, and so there is something to be said for the obligation that they have there, too.

Do not misunderstand me. I am not from TVA country, and my offhand opinion is that I probably will not vote for this bill, but on the other hand, I am not convinced that as you speak of equal treatment and fairness, that you are entirely consistent, if you will not agree with measures in the bill if we are talking about 50 percent instead of 100 percent.

Mr. CRAWFORD. If you construe the payments under the 1959 act, namely, the return on the unamortized investment and the repayment of appropriated funds, if you consider those payments as a dividend to the Government, then I can agree with the analogy that a reduction in that would be somewhat equivalent to ours.

I have never regarded those as a dividend.

Mr. SNYDER. They are not regarded as dividends, because you reduce the amount due when you make those payments based on their original purchase of stock.

What you are saying is that you are opposed to this bill—period. And if it becomes law, you want 100 percent writeoff.

Mr. CRAWFORD. Well, I do not want to go quite as far as the latter statement.

We really have not thought in those terms, but it does seem to me that the various kinds of utility organizations should be treated alike from the tax point of view.

Mr. SNYDER. And it is further your belief that if TVA was allowed 50 percent, that that would not be treating you alike?

Mr. CRAWFORD. I do not think so.

Mr. SNYDER. Thank you.

Mr. JONES. Any further questions?

The gentleman from Georgia.

Mr. GINN. Thank you, Mr. Chairman.

Mr. Crawford, what would be your educated guess as to what the loss to the Treasury would be if this legislation passes?

Mr. CRAWFORD. I really do not have any good way to estimate that, because I do not know what TVA's pollution control expenditures would be.

Chairman Jones had some figures in his statement, and we do not have any such estimates.

I think the Treasury would be in the better position to judge that than we are.

Mr. GINN. How would this legislation affect the rural electric cooperatives that might be in the generation and transmission business?

Mr. CRAWFORD. I do not see that it would affect the generation and transmission cooperatives.

If the TVA were to have this benefit then its cooperative distributors would benefit by paying less for the power purchased to TVA.

Mr. GINN. Thank you very much.

Mr. JONES. Further questions?

Mr. Crawford, are you familiar with Mr. Gordon Cory?

Mr. CRAWFORD. Yes, sir.

Mr. JONES. Is he a member of your organization?

Mr. CRAWFORD. Yes, sir, his company is.

Mr. JONES. Are you familiar with testimony he gave before the Ways and Means Committee in March of 1973?

Mr. CRAWFORD. I believe so. Could you refresh my memory on the subject?

Mr. JONES. In the Ways and Means review of the Revenue Acts.

Mr. CRAWFORD. Yes, this was on accelerated amortization.

Mr. JONES. Yes. Let me just give you a couple of paragraphs of his testimony.

He stated that it is essential that the tax depreciation system and depreciation methods be retained, and the 7-percent job development investment credit be made available to electric power companies, in order that these companies can meet the Nation's power needs, and remain solvent.

You are already a petitioner for tax benefits, are you not?

Mr. CRAWFORD. We believe that we should be treated like all other industry.

We only have 4 percent for the investment tax credit, and the other industry has 7 percent.

Yes, Mr. Jones, that is our point.

Mr. JONES. So you are agreeable to an increase in the tax rates of tax reduction from 4 to 7 percent?

Mr. CRAWFORD. Yes, sir.

Mr. JONES. Any further questions?

Well, we thank you gentlemen for your presentation. You have been quite helpful.

Without objection, at this point in the record I would like to insert statements received from Joseph S. Ives, environmental counsel for the National Rural Electric Cooperative Association; Alex Radin, general manager, American Public Power Association; John Edd Walker, manager, West Kentucky Rural Electric Cooperative Corp., Mayfield, Ky., and president, Tennessee Valley Public Power Association; and Laurence I. Moss, president, Sierra Club.

[The statements referred to follow:]

STATEMENT OF JOSEPH S. IVES, ENVIRONMENTAL COUNSEL, THE NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION

My name is Joseph S. Ives. I am Environmental Counsel for the National Rural Electric Cooperative Association (NRECA). NRECA is the national organization which represents nearly 1,000 REA-financed, non-profit cooperative electric systems which deliver power to approximately 25 million people in 2,600 out of 3,100 counties in the U.S. These consumer-owned electric systems serve nearly 75 percent of the total area of the U.S. which, for the most part, is sparsely populated, containing only about 10 percent of the total population. I appreciate the opportunity to express the views of NRECA on this important legislation.

The National Rural Electric Cooperative Association (NRECA) strongly supports H.R. 11929 introduced by Congressman Robert Jones of Alabama which amends Section 15-d of the TVA act of 1933 to provide that the expenditures for pollution control equipment will be credited against power investment return payments and repayments. This bill essentially provides a credit for the installation of pollution control equipment which is mandated by the Water Pollution Control Act, the Clean Air Act, the Solid Waste Disposal Act, the National Environmental Policy Act, and other amendments, executive orders and regulations which implement these acts. In 1933, when the Tennessee Valley Authority Act was passed by the Congress and signed into law by the President, the present burdens of environmental protection, energy shortages, and inflation on the shoulder of the tax payer and consumer were not foreseen. The exponential increases in population, gross national product, energy consumption, pollution, and inflation require that a further look be taken at some of the excellent legislation which was passed in prior years.

The American people who originally invested \$1.2 billion in the TVA, now own an investment worth \$4.4 billion. The consumers and users of the TVA system have repaid to the American people a total of \$990 million, and the American people now have an asset worth approximately \$4.4 billion which has cost them less than \$300 million. This increase in value of the TVA system has been largely financed by the consumers and users in the TVA service area. If the present regulations for sulfur dioxide control are completely implemented by the TVA, an additional \$1.2 billion of capital will be needed. This vast sum is about 25% of the total value of the TVA system. TVA estimates that the annualized capital cost and operating cost for this equipment will require over \$225 million per year of additional revenues. At the present time the total revenues of the TVA system is approximately \$640 million per year. This means that the rates charged by the consumers in the TVA area for bulk power would have to be increased by approximately 30 percent. The average cost of fuel consumed in TVA plants has nearly doubled during the past four years and is continuing to increase. Last year TVA fuel costs were approximately \$267 million and are expected to increase by \$125 million to \$392 million in 1974. Recent studies by

Electrical World indicate that the majority of these fuel cost increases are indirectly attributable to environmental control regulations.

Over 50 rural electric cooperatives in the TVA service area purchase bulk power from the TVA and retail this power to their consumer owners. The consumer owners have already paid substantial increases in their power costs due indirectly to environmental regulations, and unless some reasonable restraints are imposed on requirements for installations of non-operable sulfur dioxide control equipment these increases will only be the beginning. Every dollar of new revenue that is required to operate the TVA system is passed through directly to the consumers in the TVA service area. Last year, the direct cost of pollution control programs at TVA was nearly \$66 million, and this year the total is expected to increase to \$170 million, or over \$3 million per week not considering the inflated cost of fuel supplies.

EPA regulations are requiring that TVA spend approximately \$161 million on environmental protection devices during this current fiscal year. Of this sum, \$102 million will be spent for cooling systems to control heated water discharges, \$38 million to improve air pollution control, \$3.7 million for operating and maintenance cost of the pollution control facilities, \$23.4 million for research, development and demonstration projects, and \$2.6 million for monitoring and surveillance of pollution sources. Dr. Frank L. Parker, Professor of Environmental and Water Resources Engineering, Vanderbilt University, recently testified that the TVA cooling system which EPA requires to treat the heated water discharges will save many fish in the Tennessee River. The only problem is that each fish so saved is calculated to cost the consumers in the TVA system \$83,500 per fish.

The burden imposed on the consumer by environmental protection regulations is becoming more severe each year. In recognition of this burden, Congress has enacted legislation which provides relief to the consumer served by investor owned utilities. H.R. 11929 will provide some relief for the consumer in the TVA service area and partially make up for EPA's \$83,500 fish.

TVA Chairman, A. J. Wagner, announced that TVA was planning to spend \$270 million during the next five years on reasonable and sensible air pollution control programs which will meet the National Ambient Air Quality Standards. However, if programs mandated by EPA for controlling sulfur dioxide are installed by TVA, this sum could increase to nearly \$1.2 billion. Chairman Wagner estimates that the \$270 million program will cost each consumer \$120. If the program recommended by EPA is implemented the cost per consumer will be approximately \$600. This vast expenditure of money does not even provide for the welfare of the \$83,500 fish, because TVA is forced to spend additional money on water pollution control. It can be safely concluded that the cost of pollution control equipment to the consumers in the TVA service area will amount to a vast sum of money and, unless some standard of reason is imposed, much of this money will be spent on ineffective and environmentally unsound programs which will have dubious benefits to consumers.

The benefits of a protected and enhanced environment will be enjoyed by all citizens in the United States, and likewise, the cost of protecting and enhancing the environment should be shared by all citizens on an equitable basis. The consumers of electric energy which are served by investor owned utilities, will enjoy a substantial rate reduction due to the tax advantages which may only be utilized by private industry. Through these tax devices and incentives, the total cost of protecting and enhancing the environment is being distributed to all tax payers throughout the United States. An investor owned utility can recapture through these various tax provisions approximately 58% of its investment in new pollution control facilities. Investor owned utilities may also use tax exempt state and local revenue bonds for pollution control, and investment tax credits may be taken for new plants. In the case of regulated investor owned utilities, these tax devices will also result in lower rates to the consumers served by these utilities. Unfortunately, the consumers served by TVA will not enjoy these advantages unless relief is granted by the H.R. 11929 offered by Congressman Jones. This bill will essentially provide that the consumers in the TVA service area enjoy similar rate benefits as are enjoyed by consumers served by investor owned utilities. Section 15-d of the TVA Act of 1933 would be amended to provide relief for expenditures on air and water pollution control equipment, which would be credited to the account of TVA toward the payment of dividends and the repayment of appropriations. The Act would provide that beginning in fiscal year 1975, an annual credit of 20 million dollars would be applied to the dividend requirement and annual repayment sum. The procedure appears to be an imminently satisfactory and reasonable approach to equitably distributing the cost of environmental protection and enhancement.

In conclusion, the citizens of the United States have in TVA acquired a valuable resource; an electric generating system worth over \$4.4 billion. Since 1959 the improvement and increased value of the system has been made possible by the sale of bonds and the investment of retained earnings from the sale of electricity to residents and consumers of the TVA service area. NRECA believes that the consumers of electric power in the TVA service area, should not be denied the same kind of tax benefits available to the consumers of electricity in other sections of the country. We urge that the Congress pass H.R. 11929 which provides rate relief to consumers in the TVA service area for pollution control equipment needed to protect and enhance the nation's environment.

STATEMENT OF ALEX RADIN, GENERAL MANAGER, AMERICAN PUBLIC POWER ASSOCIATION

My name is Alex Radin. I am General Manager of the American Public Power Association, a national trade organization representing more than 1,400 local publicly owned electric utilities, primarily municipally-owned systems, in 47 States, Puerto Rico, Guam and the Virgin Islands. Our offices are located at 2600 Virginia Ave., N.W., Washington, D.C. 20037.

I am submitting this statement in support of H.R. 11929, by Rep. Jones of Alabama and seventeen other members of the House of Representatives. The American Public Power Association's Legislative and Resolutions Committee, meeting in Washington, D.C. on January 29, 1974, approved a resolution in favor of bills such as H.R. 11929. I am attaching a copy of this resolution.

This bill would credit Tennessee Valley Authority expenditures for pollution control facilities against the presently required payments to the U.S. Treasury by TVA as a dividend or return on the outstanding appropriation investment and as an annual reduction of that appropriation investment.

Since 1959—when Congress amended the TVA Act of 1933 to authorize TVA to finance needed power facilities through issuance of Federally taxable electric revenue bonds—TVA has been required to make these annual payments to the U.S. Treasury:

(a) An annual "dividend" to the U.S. Treasury on the outstanding amount of appropriated Federal funds invested in TVA power facilities. The remaining Federal appropriation investment is now about \$1.035 billion; and TVA's annual "dividend" payment in the current fiscal year will be \$63.4 million, making a total of dividend payments by TVA to the U.S. Treasury since 1960 of \$686 million. The amount of this dividend is computed each year on the basis of the Federal Treasury's average cost of borrowing during the previous fiscal year, applied to the outstanding appropriation investment.

(b) In addition, an annual \$20 million payment to the U.S. Treasury as a reduction in the Federal appropriation investment. These payments have totalled \$205 million since 1960. Add to this the \$185 million paid into the U.S. Treasury prior to 1960 by TVA, and the annual "dividend" payments, and you have total TVA cash payments to the Treasury of well over \$1 billion.

TVA is an agency of the Federal Government. As TVA's power program gets larger, the agency becomes a more valuable asset of the Federal Government. More than \$800 million of TVA's capital funds as of June 30, 1973 had resulted from reinvestment of net revenues from the sale of electricity. This total will grow in the future. In addition, nearly \$2.5 billion more represented funds borrowed in the private money market. TVA's revenue bond interest is Federally taxable. These funds—eventually financed by the ratepayers in the Tennessee Valley—help to purchase additional facilities—assets for the Federal Government—without further investment by the Government.

The Federal Government, then, owns in TVA a growing asset, whose future financing will be essentially by the ratepayers in the Tennessee Valley, not by Federal appropriations or grants.

The proposal in H.R. 11929 to credit TVA's environmental protection investments against its presently required payments to the U.S. Treasury simply suggests that the owner (the Federal Government) has decided temporarily, to emphasize pollution control investments—instead of cash payments—as an alternate way of operating this public agency in the public interest.

TVA, then, will continue to grow as an asset of its owner, the Federal Government. Further, temporary reduction of TVA's payments to the Treasury will permit TVA, simultaneously, to reduce its borrowing in the private money market. By 1984, under H.R. 11929, it is estimated that the savings to this Federal agency, TVA, in interest costs on funds borrowed in the private money market will exceed the reduction in payments to the U.S. Treasury.

TVA sells electric power at wholesale to 110 municipal electric systems and 50 rural electric cooperatives in the Tennessee Valley, and these 160 non-profit, consumer-owned utility systems in turn retail that electricity to more than 5 million people. It is these electric power consumers who are paying for TVA's huge pollution control investments through their electric bills. A customer of a private power company need not pay in such a manner for the company's pollution control investments, due to Federal tax laws that provide quick writeoffs and tax-exempt financing avenues for private companies.

The Nation's private power companies enjoy a variety of depreciation-related tax benefits. These include the investment tax credit; accelerated depreciation; revised and liberalized Treasury Department depreciation guidelines; five-year writeoff of pollution control investments; and others. Because the electric utility industry is highly capital-intensive, any tax benefits based on depreciation provide potentially huge dollar benefits to private power companies.

How effectively the private power companies have taken advantage of these tax benefits in recent years is illustrated by the fact that private power company Federal income tax payments have plummeted from 13.6% of their operating revenues in 1955, to 10.1% in 1965, to 5.6% in 1970—and to a new low of 3.5% in 1972. Thus, private power companies paid less than one-third as much, percentage-wise, in Federal income taxes in 1972 as in 1955. This sharp decline is due primarily to the variety of tax writeoffs available to the private power companies, including the five-year writeoff of pollution control expenditures. Some large private companies, such as Consolidated Edison Co. of New York, have in recent years paid no Federal income taxes.

Meanwhile, private power companies have been making rapidly increasing use of tax-exempt financing of pollution control equipment. There have been tax-exempt bond issues totalling well over \$1 billion for private power company pollution control equipment, with most of this amount issued in the past year.

However, direct comparisons between TVA and private power companies may be misleading. For example, TVA is a wholesaler of power; virtually all private power companies handle both the generation and distribution of power, but in the Tennessee Valley, TVA leaves local distribution of TVA-generated electricity to the 160 municipal and rural cooperative electric systems.

TVA, as a Federal corporation, has purposes different from those of the private power companies. TVA was established by the Congress in 1933 as a multipurpose resource development and conservation agency. President Franklin Roosevelt's April 10, 1933 message to the Congress urging creation of a Tennessee Valley Authority said the new agency "should be charged with the broadest duty of planning for the proper use, conservation, and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general social and economic welfare of the Nation." TVA, then, has been much more than an electric power generation and transmission system, although its electric power program has contributed substantially to the Tennessee Valley's economic development. TVA has been a multipurpose resource agency, working at reforestation, watershed development, better land use, and other conservation-related programs.

This bill, H.R. 11929, follows logically in that pattern. TVA, as a federally owned resource development agency, has a concern with air and water pollution control that goes beyond meeting the requirements of the air and water quality laws of the land. The private power companies must comply with these laws. But TVA was taking environmental protection actions of considerable importance two decades ago, because it had a Congressional mandate for resource development and conservation.

Today, then, it is desirable public policy for the Congress to re-emphasize TVA's broad multipurpose conservation goals by modifying the requirements for TVA payments to the Federal Treasury in order to emphasize TVA's concern with pollution control as a part of its broader conservation mandate. Further, TVA's power revenues, it is important to keep in mind, come primarily from the users of electric power in the Tennessee Valley, not from Federal appropriations or grants.

In addition, one of the major users of TVA power is the Federal Government. Federal agencies in 1973 paid TVA \$110 million for electricity, an increase of about 27% over the 1972 total of \$86 million. Indications are that purchase of TVA electricity by Federal agencies will increase. Thus the Federal Government, as a consumer of TVA power, will benefit substantially from the bill.

H.R. 11929, then, will permit TVA to credit its pollution control investments against its presently required payments to the U.S. Treasury. It will enable the electric ratepayer in the Tennessee Valley to share some of the cost of added power facilities with the general taxpayer, as do consumers of private power companies—rather than continuing to pay for all of TVA's pollution control costs. The TVA power system will continue to grow, thus providing the Federal Government with a growing asset without additional appropriations or grants from the Federal Government.

TVA CREDITS FOR ENVIRONMENTAL PROTECTION INVESTMENT¹

Whereas, the Tennessee Valley Authority (TVA) each year is making major investments in pollution control facilities; and

Whereas, at present TVA and its power consumers bear the entire cost of these investments; and

Whereas, national policy provides for financial incentives to private firms to install pollution control equipment in order to encourage rapid improvement in the quality of the nation's air and water; and

Whereas, the Federal government, as owner of TVA, is now receiving substantial amounts of income from the TVA power system as a return on, and reduction of the government's appropriation investment in TVA power; and

Whereas, a policy of establishing credits against these TVA payments to the U.S. Treasury for the Authority's environmental protection investments would provide for a sharing of pollution control costs between TVA and its power users; and

Whereas, Rep. Robert E. Jones and 17 other members of the House have introduced H.R. 11929 to authorize TVA to credit its certified pollution control expenditures against its required payments to the Federal Treasury: now, therefore, be it

Resolved, That the American Public Power Association supports bills such as H.R. 11929 that authorize TVA to credit its certified environmental control expenditures against its required payments to the U.S. Treasury.

STATEMENT OF JOHN EDD WALKER, MANAGER, WEST KENTUCKY RURAL ELECTRIC COOPERATIVE CORP., MAYFIELD, KY., AND PRESIDENT, TENNESSEE VALLEY PUBLIC POWER ASSOCIATION

As President of the Tennessee Valley Public Power Association, I am pleased to present this statement to the House Committee on Public Works in support of H.R. 11929, a bill to amend section 15d of the Tennessee Valley Authority Act of 1933 to provide that expenditures for pollution control facilities will be credited against required power investment return payments and repayments.

I am manager of the West Kentucky Rural Electric Cooperative Corporation, headquartered in Mayfield, Kentucky. The Tennessee Valley Public Power Association, headquartered in Chattanooga, Tennessee, is a regional association representing the 110 municipal power systems and 50 rural electric cooperatives in the Tennessee Valley that purchase electric power at wholesale from the Tennessee Valley Authority (TVA).

These 160 municipal and rural cooperative electric systems—providing electric power at retail to more than six million people—are located in parts of seven Tennessee Valley States, including Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee and Virginia.

These locally owned electric utility systems in the past fiscal year purchased nearly 64 billion kilowatt-hours of electricity from TVA, more than 61% of TVA's total sales of electricity. And in calendar year 1973, these 160 municipal and rural cooperative electric systems paid TVA more than half a billion dollars (about \$509 million) for wholesale power supply—nearly two thirds of TVA's total income from this sale of power.

These locally owned distributors of TVA-produced power, then, represent by far the major user of TVA electricity—nearly two-thirds of the market. These local utilities have a total investment in equipment and facilities of about \$1.7 billion; had combined operating revenues in the past fiscal year of more than \$750 million; operated nearly 160,000 miles of power lines; and delivered electricity to more than 2,300,000 electric meters in parts of seven states.

¹ Approved on January 29, 1974, at a meeting in Washington, D.C., by the legislative and resolutions committee of the American Public Power Association.

Thus, when you Committee considers legislation affecting a Federal corporation, the TVA, your actions directly affect the millions of electric consumers served by these 160 municipal and rural cooperative electric systems that purchase their entire wholesale power supply from TVA. It is our consumers who supply nearly two-thirds of the revenue that TVA receives, and who thus play a major role in underwriting TVA's revenue bonds and TVA's cash payments to the Federal Treasury, TVA's operating costs, TVA's pollution control investments, and TVA's expenditures on utility research and development.

So our Association's concern with legislation affecting the TVA stems primarily from the fact that these 160 consumer-owned electric utilities purchase all of their wholesale power supply from TVA. Thus, any factor that affects the wholesale cost of electric power supplied by TVA, or the conditions under which that power is furnished, has a direct and immediate impact on the ability of these consumer-owned electric distribution systems to supply modern electric service at reasonable rates to our retail consumers. When TVA is forced to pay rapidly escalating prices for coal, as it has in recent years, the cost is reflected in the wholesale rates that our rural cooperative and municipal electric systems pay to TVA for power.

Under terms of the 1959 amendment to the TVA Act, TVA is required to set rates that cover all of its operating expenses, plus the cost of borrowed capital, and annual payments to the U.S. Treasury as both a dividend or return on the Federal Government's appropriation investment and a reduction in the appropriation investment. The wholesale electric rates that TVA establishes for our locally owned, locally managed distribution utilities, then, must take into account all of the costs that TVA incurs.

The 1959 amendment to the Act, as approved by this Committee and adopted by the Congress and signed by President Eisenhower, put TVA power on a self-financing basis. Electric power facilities, and related pollution control equipment, are financed through federally taxable electric revenue bonds issued by TVA, and by re-investment of TVA's power system net revenues. In brief, the financing is paid for by the electric power users in the Tennessee Valley, with no Federal appropriations except for occasional funds for power facilities at multipurpose TVA dams.

Thus, the Federal Government is building an increasingly valuable asset with virtually no additional investment on its part; and with sizeable annual income from the TVA's payments to the U.S. Treasury. This year TVA's total payments to the Treasury will pass the \$1-billion mark.

This bill represents a move toward fairness. It is a paradox that under present Federal law, private companies can obtain huge writeoffs or credits for expenditures on pollution control equipment, on the grounds that environmental control devices produce highly desirable benefits to the general public; while the TVA, a Federal corporation wholly owned by the U.S. Government, gets absolutely no credit for its large expenditures for pollution control—expenditures that are passed directly on to the Tennessee Valley power user in his or her monthly electric bill. The members of the Tennessee Valley Public Power Association—the 160 consumer-owned electric utilities that retail TVA-produced power to more than 5 million people—pay for these pollution control expenditures in our wholesale power bills to TVA, costs that we eventually pass on to our retail consumers.

The Tennessee Valley Public Power Association strongly favors this bill, H.R. 11929. It will represent a move toward fairness for our power consumers. But frankly, we do not view this measure as a panacea. We have been hit in recent years by a series of wholesale power rate increases. The factors leading to those rate increases by TVA have been many—rising interest rates, soaring prices for coal, general inflation, skyrocketing cost of equipment, increased personnel cost. The cost of environmental protection has been a growing part of TVA's total costs, but it has been only one of several factors. Therefore, while we vigorously support this bill as an equitable approach to the sharing of pollution control costs, we do not expect it to have a major long-range impact on the level of electric rates in the Tennessee Valley.

This bill would simply credit TVA's certified pollution control expenditures against TVA's presently required payments to the U.S. Treasury. Thus TVA would obtain a credit for its publicly beneficial environmental investments, without Federal appropriations or grants. The power consumers in the Tennessee Valley would, for a limited number of years, be spared the obligation to pay via their electric bills the total cost of environmental protection investments by TVA. After an initial period during which such TVA investments would reduce the appropriation investment and the annual dividend payment to the Treasury, TVA would in the future receive only partial credit for its environmental investments.

This latter point is significant. Estimates are that—because of the heavy investments TVA will be making in pollution control equipment—this bill will result in a reduction in the outstanding appropriation investment to a continuing level of \$200 million within six or seven years. After that time, TVA would receive only a minimal credit for its sizeable investment in pollution control equipment, so that by the early 1980's, the power consumers in the Tennessee Valley would again be bearing virtually all of the financial burden of pollution control equipment, unless the Congress took action at that time to remedy that problem.

In addition, of course, this bill does not affect the large operating costs of TVA pollution control equipment.

We commend the sponsors of H.R. 11929, including Rep. Robert R. Jones of Alabama, and his colleagues, Reps. Beville and Flowers of Alabama; Davis and Landrum of Georgia; Carter and Stubblefield of Kentucky; Bowen and Whitten of Mississippi; Wampler of Virginia; and LaMar Baker, Beard, Duncan, Evins, Fulton, Ed Jones, Kuykendall and Quillen of Tennessee.

On behalf of the electric power users in the Tennessee Valley, we urge your Committee to adopt this bill without amendment.

STATEMENT OF LAURENCE I. MOSS, PRESIDENT, SIERRA CLUB

The Sierra Club, a national conservation organization of 143,000 members, many thousands of whom live in the TVA system, welcomes the opportunity to present our views on H.R. 11929.

Mr. Chairman, the intention of H.R. 11929 is commendable, but the specific approach is one with which we cannot agree. The legislation is designed to encourage adoption by the TVA of pollution control equipment. The Sierra Club strongly endorses this goal and commends the sponsors of the bill for their justified concern with environmental quality.

This legislation, however, violates the principle that the user of a good or service should pay for the pollution damage it causes or the cost of controlling that pollution. This concept was enunciated in President Nixon's 1973 Environmental Message and is a cornerstone of sound environmental policy making.

H.R. 11929 shifts the cost of pollution abatement away from the consumer and on to the shoulders of the general taxpayer. In effect, it proposes a federal subsidy of energy consumption by TVA's customers. This shift of cost is incompatible with the present high national priority on energy conservation. Conservation is essential if the nation is to achieve energy self-sufficiency. It is equally important in the preservation of environmental quality. Thus, as a general principle, subsidization of energy consumption is undesirable.

In particular, increased subsidy of energy consumption in the TVA region seem questionable. This area already enjoys above-average rates of electricity consumption (two to three times the national average) at below-average prices. Further federal subsidy, at a time when all Americans are being asked to reduce energy use, seems inappropriate.

In addition to this very fundamental problem, there are other serious weaknesses to H.R. 11929. These difficulties arise from the approach of subsidizing capital investment rather than successful pollution abatement. Some of the most effective approaches to pollution control are based on changing processes or material inputs rather than on capital investment for equipment which is solely for pollution control.

Sulfur pollution provides an illustration of this point. It is a major pollution problem, probably the major pollution problem associated with electricity generation. For some plants the most effective sulfur control strategy does not involve new capital facilities. Rather it is based on purchase of naturally low sulfur content fuel or fuel which has been desulfurized. The increased fuel costs implied by this are not eligible for subsidies under H.R. 11929.

Over the longer term, the use of advanced combustion technology in which pollutants are removed at an early stage, perhaps as an integral part of the combustion process, is highly promising. Yet it is doubtful that investment in such processes, because they are not uniquely for pollution abatement, would be subsidized as would be less effective add-on devices.

The legislation would, therefore, create a bias in favor of inefficient capital-intensive abatement strategies. The result will be less pollution control and more revenue loss than could be achieved by other policy mechanisms.

Additionally, those who support the view that TVA should serve as a yardstick against which to measure the performance of privately owned utilities will be dismayed by this legislation. Only if TVA is subject to equal or equivalent government policies as other utilities will the yardstick concept have any validity.

In conclusion, we feel that H.R. 11929, however commendable the intentions of its authors, is the wrong approach toward encouraging pollution control. This use of public subsidies is incompatible with the goal of energy conservation. It would result in inequities and economic inefficiency. Thus, the Sierra Club opposes enactment of this bill.

Mr. JONES. The committee stands in recess.

[Whereupon, at 11:32 a.m., the committee recessed.]



