ELECTRIC POWER POLICIES

5 March 1954

1597

CONTENTS

	Page
INTRODUCTION--Colonel Charles W. Van Way, Jr. USA, Chief of the Manpower Branch, ICAF	1
SPEAKER--Honorable Ralph A. Tudor, Under Secretary of the Interior	1
GENERAL DISCUSSION	14

NOTICE: This is a copy of material presented to the resident students at the Industrial College of the Armed Forces. It is furnished for official use only in connection with studies now being performed by the user. It is not for general publication. It may not be released to other persons, quoted or extracted for publication or otherwise copied or distributed without specific permission from the author and the Commandant, ICAF, in each case.

Publication No. L54-107

INDUSTRIAL COLLEGE OF THE ARMED FORCES

Washington, D. C.

Honorable Ralph Arnold Tudor, Under Secretary of the Interior, was born in Colorado Springs, Colorado, 19 March 1902, and was graduated from the U. S. Military Academy in 1923. He took post graduate work at Cornell, specializing in hydraulics and was awarded a degree in civil engineering in 1925. In 1923 he was commissioned a second lieutenant in the Coast Artillery Corps, later transferring to the Corps of Engineers. In 1929 he resigned his commission to accept employment with the Division of Highways of California, performing various bridge engineering and designing jobs on the west coast until 1941. He returned to the Army in 1941 and was commissioned a lieutenant colonel on the general staff of the 40th Division. In 1942 he was transferred to the Corps of Engineers as chief of the engineering division and later became district engineer of the Portland (Oregon) District. In 1946 Mr. Tudor returned to civilian life as vice president of the Morrison-Knudsen International Company. Since 1947 he has been president of the Tudor Engineering Company with its principal office in San Francisco. He has been chief engineer on studies and plans for two additional highway crossings of San Francisco Bay and has done engineering design work for the Army in Alaska and Idaho. He has been consultant for the State of Washington on a highway crossing of Puget Sound; consultant on planning, financing, design, and supervision on Columbia River bridges at the Dallas and Umatilla, Oregon; and consultant to the State of California on San Francisco Bay Bridge between San Rafael and Richmond. Mr. Tudor also has been on a committee sponsored by the Engineers Joint Council to study and prepare recommendations for a national water policy. He was nominated to be Under Secretary of the Interior by President Eisenhower on 4 February and confirmed by the Senate on 10 February 1953. This is his first lecture at the Industrial College.

ELECTRIC POWER POLICIES

5 March 1954

COLONEL VAN WAY: General Greeley and gentlemen of the Industrial College: This is the second of our lectures on power, and the last of our series of lectures on public service. The period this morning will be devoted to a lecture and discussion on the effect of policies with regard to power, as established by the Federal, State, and local governments; and the effect that they will have on the development of a strong power industry, capable of giving us adequate support in economic mobilization. We consider ourselves very fortunate in having secured the services of the Under Secretary of the Interior, Honorable Ralph A. Tudor, to talk to us on this important and complex subject.

As a member of the Regular Army of about 10 years, as a Reserve Officer, and as an engineer, Mr. Tudor is known to many of you. As a senior member of one of our more important Departments, his words will come to you with authority and full knowledge. It is with great pride and pleasure that I introduce to this audience Mr. Ralph A. Tudor.

MR. TUDOR: General Greeley, Colonel Van Way, and gentlemen: In discussing with Colonel Van Way the manner in which I should approach this problem I said that I ordinarily find it necessary to read from a text because, as many of you know, it is one of the politically hot ones. Any time I say anything about it, where the press can quote me, I have to be very careful, since sometimes they quote out of text or use half of what I say. However, I understand that this morning I am free, of restraint and I welcome that opportunity. I would much prefer not to read from text. Therefore I am going to talk simply from an outline.

Colonel Van Way also told me that it would probably be best if I first discussed some of the problems that we are facing nationally on this subject, both economically and from an engineering viewpoint and from a political viewpoint, because they cannot be separated. Thereafter you may have some questions that you want to ask, and I will endeavor to answer them.

This question of the power policy of the Nation is an unusually important one. We recognize that our industries are important to national defense--the fabrication of steel, the fabrication of aluminum, the making of steel, the making of aluminum, and many other things. But bear in mind that none of these industries can operate unless we have adequate electric power. This Nation has come to be dependent on electric power in the last four decades, more than ever before.

I have often speculated, as I have traveled around, what would happen if we suddenly lost all the kilowatts that this country depends upon today. You couldn't maintain your apartment. You couldn't maintain your plant. You couldn't maintain even your farm. The refrigeration of food depends almost entirely on electricity. We have very little in the way of natural ice. It is all electrical. You couldn't even burn the gas in your home, because, after all, the pumps that pump that gas out of the gas field are generally operated by electricity. All your heat for cooking would be gone. Transportation would be largely eliminated. This Nation simply could not survive as we know it today if we didn't have electricity. We are really in an electrical age.

Now, it is inconceivable that we are going to lose all our electricity; but we might lose some portion of it through some disaster or through attack. What would happen then would have serious consequences.

True enough, we could do away with a great deal of illumination if we had to; with advertising, neon signs, and that kind of thing. We could cut back on our consumption of electricity. But it wouldn't be long until we would have brownouts and perhaps blackouts. We have even experienced brownouts in some sections of this country in the last few years. In fact, the year before last we had one in the Pacific Northwest. Those people had what they called a brownout. It was necessary to curtail some of the advertising. They were able to do that on a voluntary basis. But it would be a matter of extremely serious consequences if a considerable portion of our generating capacity and our transmission and distribution capacity in this country were seriously harmed.

At the present time, along with those very serious production and expansion matters which I am sure most of you are familiar with, we have a political problem. There is a strong discussion in this country today as to whether we should have public power or private power.

As far as this Administration is concerned, we are not taking any sides on that issue. We think that if the local community wants public power, all well and good. We do not believe that the Federal Government--and I think this is important to you--should socialize the electric power industry. We believe it should continue to be a part of the free enterprise system in this country and should not be socialized. We will build plants where it is necessary, that is, where they can't be built by the local public or local private industry. However, we do not believe the Federal Government should deliberately expand in this power field.

Power has grown in this country. I have some figures that may be of interest to you. I have prepared some tables, which I believe will be made available to you. For example, they show that in 1920 there were only 12,714 megawatts of generating capacity in this country. That figure itself doesn't mean very much; but in 10 years it had increased to 32,000--almost tripled. Then in the next 10 years, from 1930 to 1940, it increased only from 32,000 to 40,000. That increase was in the period of the depression. There wasn't much new construction going on. From 1940 to 1950, during the period of the war, when there was some restraint on construction and many other things, it increased from 40,000 to 69,000. But from 1950 to 1953, only three years, it has jumped from 69,000 to 92,000. The growth in the last three years has been 7,000 megawatts a year. The largest growth prior to that was 2,900 a year in the 10-year period of the war.

But still we aren't doing too well. Today we have only a 6 percent surplus in this country. That is a very narrow margin. But we are 6 percent better off than we were two or three years ago. Still it ought to be a little bit larger than that.

We are building very rapidly for the future. I think perhaps the annual growth will be of interest to you. At the present time we are growing at the rate of about 7,600 megawatts per year. In the year just past, 1953, however, we did grow at the rate of 9,500 megawatts. That was the increase in the capacity of the United States last year.

Our goal for 1953 had been 10,000 megawatts. The Defense Electric Power Administration (DEPA) set that goal. We missed it by 500 megawatts. The goal for next year is 12,000. We anticipate that we will exceed that by 1,500; that we will install 13,500. When I say "we" I mean the Nation.

The goal for 1955 is another 12,000. We anticipate that we will make 11,500. We are going to have to jump next year. There is good reason to believe that we will do it. After all, these plants that are going to be installed next year are all under construction now. The generating facilities, the generators and turbines, are all on the order board. All are being processed now. So we have pretty good reason to believe that we will meet these goals.

We are a little bit behind, because we had some labor troubles in various parts of the country. They have caused delays in the past few years. But we think that in the next two years we will be in very good shape.

That is a tremendous growth; 13,500 megawatts in one year is just about twice anything that has ever been accomplished except in the past year, 1953.

I have already told you something about the reserve. It is now 6 percent. I think we should have nearer 10 percent. In the past 15 percent has generally been the safe target. But, in view of the fact that we have better interconnections throughout the country today, we do not need quite such a high margin.

We have been running along on no margin at all and as of today there are important areas in the country where there is no surplus. Our transmission and distribution of those reserves are not in all cases good. Thus is some areas we have to be particularly careful to build up our capacity, while in others we have a somewhat better margin.

One of the biggest things that has happened in this country in the last two decades is the improved interconnections. We have interconnected plants all over the country so that they balance one another. We have interconnected steam plants with hydro. We have interconnected hydro plants that have a big summer capacity with others that have a big winter capacity. Consequently, we have been able to level off the production of power a great deal.

In the Pacific Northwest, which I think is the most successful in that respect, there is a complete interconnection, both public and private. When I say "public" I mean both Federal public and local public. All of these producers are interconnected and pool their power on a voluntary basis.

That interconnected pool of power is so effective that it has produced the equivalent of between 500,000 and 600,000 kilowatts of prime capacity. If it were not for that complete interconnection, we would have lost the equivalent of the power from a dam bigger than the Bonneville Dam. I think that is extremely important. It demonstrates what can be done, and what must be done, throughout the country.

Of course it is not practical to interconnect the whole country. The cost of the transmission lines would be too great. But there can be connections from one area to another for small transfers.

In this country we had as of 1 November 1953--the figure will be a little bit larger at the end of the year--88,617 megawatts of generating capacity. That had grown from 37,492 in 1938. Thus you can see how fast and how big this industry has grown.

It is interesting to note that of the 88,617 megawatts capacity on 1 November 1953, 28,832 megawatts were from investor-owned plants; from plants in private industry, free enterprise. That is about 77.7 percent. In the 15 years immediately preceding 1953 the proportion owned by investors, by private industry, has decreased from 88.7 percent to 77.7 percent. That doesn't mean a decrease of ownership. It is simply a decrease of proportion. The amount owned by private industry has more than doubled.

Bear in mind that there are two kinds of public ownership. One is local public ownership and the other is Federal public ownership. Local public ownership amounts to 8,785 megawatts of capacity, or 9.9 percent of the total generating capacity of the country. Federal ownership amounts to 11,000 megawatts, or 12.4 percent of the capacity. There has been a big jump in Federal ownership. In the last 15 years the proportion owned by the Federal Government has increased from 3.1 percent of the total to 12.4 percent.

A question we frequently have asked is, "How did the Federal Government get into the power-generating business?" The Federal Government first came into the generation of power by virtue of a change in the Reclamation Act of 1906. The original Reclamation Act of 1902 provided for the reclamation of arid and semiarid land in the West. In 1906 the Congress amended that law to permit the Bureau of Reclamation to generate power as a part of, and as a byproduct of, the reclamation projects.

All of the reclamation laws that have been passed since that date have said that the generation of power was a byproduct of the primary purpose of reclamation of the land.

The Federal Government also got into the generation of power through the several flood control and the navigation acts which have been passed by Congress in recent years. Those are projects that were built by the Army engineers. Again, flood control and navigation are the primary purpose, and the generation of power is a secondary purpose. The power was intended to be a byproduct of this other and primary purpose.

Incidentally, the Bureau of Reclamation of the Department of the Interior was made the marketing agent for this power. So, while the Army engineers build some of the plants that generate power, that power is turned over to the Department of the Interior to sell. We are thus the marketing agents for all power generated by the Federal Government except at the Tennessee Valley Authority (TVA) plants.

TVA is the one exception to the rule I have just enunciated. TVA was initiated primarily as a flood control and navigation project. However, by virtue of the legislation which has been passed, the TVA has become the sole supplier of energy for a particular area. It is an exception to the other rule. Its financial and other responsibilities are quite different from the operations conducted by the Army engineers and the Bureau of Reclamation.

Now, a moment for the political complications. Please understand that I am a "displaced engineer." I did not anticipate finding myself in this position of public office a little over a year ago. I know nothing about politics. But, nonetheless, I must recognize these political complications, since this is a very hot subject.

Without doubt the private industry did in the past create some circumstances which encouraged public power. There were bad practices in private industry in the years gone by. For a good many years it was a monopoly, unrestrained; and that privilege was sometimes abused. Perhaps all of you have heard of instances of that sort. There was the great Insull empire, where they built one controlling corporation on top of another, and made large profits that were not justifiable.

Furthermore, private industry neglected certain areas, particularly the rural areas. It did not see fit to go into those rural areas to any extent. It was considered too expensive to supply the rural areas with power. So those areas were neglected for reasons which seemed proper at that time; but later, looking back now, perhaps private industry should have entered this field more vigorously. Those things created a situation which served to encourage public ownership power.

Public power did come in. First it came in in the local communities. In my home town of Palo Alto, California, power is publicly owned. We have a nice situation there. We buy our power from private industry and distribute it within our community. The community is doing an excellent job. It makes profits and builds various things with these profits, such as swimming pools and so forth. The taxes are a bit lower than in other places and profit on our power sales accounts for much of this. That is public power on a local basis.

But as time has gone on, I think public power has also been responsible for some practices which are not too good. For one thing, we often find that unrealistic allocations of cost have been made to power, in an effort to push the cost of the power down and thereby widen the benefit between public and private power.

Examples of this are to be found in several power dams in the Southwest, built by the Army engineers. The total cost of these was about 700 million dollars. The Army engineers, when they made their presentation before Congress in the justification of these projects, allocated about 400 million dollars of the total cost to power. When the Department of the Interior became the marketing agent for the power, it reduced that allocation and allocated to power about 200 million dollars.

I think both the Army engineers and the Department of the Interior were wrong. I think the Army allocated more of the cost than could be collected for that power. Its allocation was based upon the benefits that that power did to the country. It was not an amount of money that could be collected by sale of the kilowatts. If they had had to price their kilowatts to recover that amount of money, they would have priced it out of the market and no kilowatts would have been sold. On the other hand, the Department of the Interior was equally guilty in that it put too low a price on the power, simply to make it a nice commodity for sale and use it for purposes other than the generation of power. The actual allocation of the cost should have been in between the two.

Another case was the Grand Coulee Dam. The Department of the Interior allocated some 41 million dollars of the cost of that dam to downstream benefits. The theory of those downstream benefits was perfectly proper. This theory was that the dam would store some 5 million acre-feet of water; and during the low water season it would be released where it would go through the downstream power plants. That would have been all right if there had been dams and power plants down there. But many of those downstream dams have not been built. Most of them were just on-paper dams. They do not exist.

Then there has been a 13-million-dollar-interest change on this 41 million dollars which has been transferred to the general taxpayers of the country. We believe, insofar as power is concerned, that is not right.

Another thing that I think is a bad practice as far as public power is concerned is that none of these public power projects contribute their fair share of taxes to the country. Last year the privately owned industry paid 1.23 billion dollars in taxes. State, local, and federally owned power projects paid 184 million dollars in taxes. TVA pays 5 percent of its earnings for local taxes or the equivalent of it. But if this country owned all the public power, we would have to make up the more than 1 billion dollars of taxes from some other source.

Another thing--public power is nonregulated and noncompetitive. It is not responsible in all instances as to rates to the Federal Power Commission. Only in certain instances does the Federal Power Commission review the rates. I do believe there should be regulation of rates on public power, the same as there is on private power.

Thus there are arguments both ways. There have been instances of bad practices on the part of both public power and private power. Whether we can straighten them out or not I don't know.

As a result of all these things, this is a very controversial subject.

In August of 1953--I think it was the 18th--the Department of the Interior, with the approval of the President and his Cabinet, issued a power policy statement. This policy was put out in order to clarify this matter. A Federal power policy statement had been issued by the

previous administration some five or six years ago, but the statement was not clear. There were many provisions in it that were not being carried out, and practices were in existence that were not in keeping with that policy. Also we proposed to do certain things that were not in full keeping with that former policy. The new policy was issued in August of last year.

The important features of the new policy, insofar as it differs from the past policy, were, I think, three things. We believe the responsibility for supplying the energy, the power, for an area rests with the people locally. We do not believe--and there is nothing in any of the laws except the TVA law--that would point to a responsibility on the part of the Federal Government for supplying the needs of an area insofar as power is concerned.

We do not believe that the Federal Government should promote public ownership. The past policy was in direct opposition to that. In fact, in Secretary Ickes' statement on power, he directed his power agents to go out and promote local ownership. Although we have no objection to local ownership if the local people want it, we do not think that the sale of and the availability of public power should be used as a club to force communities to go into public ownership. If they want it, fine and dandy. If they don't want it, we should not use the tool of the availability of power to force them to do it.

We also believe that the price of public power should be realistic, that is, that the allocation of cost should be realistic. We do not believe that any area should get the benefit of uneconomical power at the expense of the general taxpayers throughout the country. We do not believe that in some areas the general taxpayers of the country can afford to give the particular area an unusual benefit by supporting the sale of power at prices which do not return on the investment. We are not going to be able to raise the price of existing federally produced power in some areas, because, if we did, we would upset the economy of various regions. We might put our REA's out of business. But we do propose that in the future, when we build a dam, we will allocate the cost on a realistic basis; and we shall charge for the power a price that will return on the investment.

This power policy which we put out has several basic provisions. In the first place, we propose to comply strictly with the laws that Congress has passed. If we don't like the laws, we will tell Congress so;

but nonetheless, we will comply with those laws. Actually, many of the laws conflict in certain respects. We hope that Congress may straighten out some of those conflicts.

I have already said that we feel the Government does not have local responsibility for power. We do not believe the Federal Government should assume the responsibility for providing power for an area. I would like to point out now that in case of a national emergency, of course, the Federal Government will step in and supply power that might be necessary.

We believe the generation of power is an incident to the primary purposes of reclamation, flood control, and navigation. We do not believe the Federal Government should build a steam power plant or a single-purpose generating plant except in exceptional instances. I had one hit my desk this morning. It was a power plant up in Alaska. It is impossible for the local interests to undertake it. It is the only power there. Under the peculiar circumstances I believe the Federal Government could properly go in in such a situation.

We believe that the preference customer clause should be adhered to. The legislation as it was passed originally--the 1906 amendment to the Reclamation Act--and applicable laws that have been passed since say that there should be preference as to certain customers in the sale of Federal power. We propose to abide by that law.

These laws say we shall first take care of the domestic and the rural customers. There is only one law that makes reference to industrial customers, and that is the TVA Act. Even that puts the industrial customers at the bottom of the totem pole. Actually the laws with the exception of Bonneville, do not say that we shall take power away from the private customers and give it to the public customer after we have originally contracted to sell it to the private customers. We are not obligated to withdraw power from private and give to public customers.

In spite of any statements that might be made about what has been the historical practice, and that the withdrawal clause in the contracts with private industry is to accomplish that, such is not the case. Even as late as 1952, a 40-year contract was written with an industrial customer without any withdrawal clause in it. So there isn't anything in

the laws, except the Bonneville Act, or in the history or the history books, that supports the premise that we should take power away from private customers and give it to public customers whenever the latter wants it.

I would like to show you how unjust such a practice might be. Say that there is a small community served by a private utility, like one in Wyoming that I am thinking of, where the Government wanted to build a certain dam. This utility was the only customer that could take the power. The department went there and asked this utility if it would undertake to purchase the power and thereby help to make the project feasible. The utility did so. It built up important private industries in that community. That community has now come to be entirely dependent upon that source of power. If we withdrew the power from that utility and community, which has been using it for a couple of decades, we would force them to go either to public ownership or out for some new type of generation, perhaps steam, which would cost quite a bit more. I believe in a case like this there is justice in continuing the service.

There are several cases of that kind. One is Kingman, Arizona. Another is Needles, California. Those are communities where they have come to depend over a long period on this source of power. Needles is only a very few miles from Hoover Dam. There is a proposal to force the community to give up that power so it can be transmitted to Los Angeles. I am a northern California man myself, but I love Los Angeles. The power involved is only 5,000 kilowatts. It seems to me it would not be just to force Needles to give up that power and go into a steam-generating plant at two to three times the cost per kilowatt to give Los Angeles an extra 5,000 kilowatts. What Los Angeles needs is an extra 500,000, not 5,000.

Those are problems that we face.

On the transmission of power, we don't believe the Federal Government should do more than build the interconnecting lines between these primary generating plants, so that we can get the benefit of interconnection in handling the loads. We don't believe the Federal Government should build feeder lines at the load centers. We think that the local interests, either private or public, should do that.

We believe these projects should pay for themselves, with interest, as far as power is concerned, within 50 years.

We will not oppose local developments. That, I think, is a very important thing. I think it is very important to you gentlemen. If we were to oppose local developments, by implication we would certainly mean the Federal Government must undertake to provide the net deficit.

And the deficit is great. In the last several years private enterprise invested almost 3 billion dollars a year in power facilities. If the Federal Government should undertake to supply power instead of private enterprise doing so in one area, it would mean that ultimately the Government would have to provide it for every area. The Federal Government would have to pick up the load and the cost. We would dislike to see an investment of 3 billion dollars added to our debt each year as of today.

The only way that the power can be provided that is necessary for this country and for its industrial load is by using all of the resources which are available to produce that power. We have to have all of the private and all of the public power that we can get locally, along with such as the Federal Government can provide, if we are to continue to meet the needs of this country.

Therefore we have a very active program of encouraging local developments. You probably all know about the Hells Canyon case. We have withdrawn our opposition to the development of that site by local enterprise. We are not endorsing that local enterprise; but we believe that if the local enterprise will develop that section of the Snake River so that the resource is not wasted, we should permit them to do so. That is one of the reasons we withdrew our opposition before the Federal Power Commission. We think the Federal Power Commission (FPC) should decide whether the local body should make the development. We believe the FPC should decide who should build that power plant so it will develop that resource without waste.

I made a talk yesterday in New York before a group of investors. I encouraged them to go out and assist in both public and private investments throughout the country, rather than trying to buy plants that the Federal Government now has. The latter will not give us any more kilowatts. We would like to direct investor capital into these new power plants around the country.

One thing in which I think you men are interested is the DEPA. I will touch on it briefly.

That was a defense organization which was set up several years ago in order to expedite the building of plants to produce power. It has been discontinued, although we have the nucleus of the organization still alive within the Department of the Interior. That, together with three other defense administrations--Solid Fuels, Petroleum, and Minerals--were assigned to the Department of the Interior by the Office of Defense Mobilization (ODM).

As far as we are concerned, we first, of course, had to help figure out what the proper goals are in this country--how many megawatts of capacity should be brought into production each year for several years. Those goals were huge. They were finally established and were turned over to us to be accomplished. ODM certified these goals. We thereafter went out and did everything we could to expedite the building of the plants.

It was no small job, because it called for particularly big generators and big turbines. The capacity for producing those big ones in this country is limited. I think there are only two or three companies that can actually manufacture them. These companies have expanded their facilities and done a magnificent job in order to get this production on the line. It has dragged a little bit, not because of their capacity so much, but because of incidental labor troubles. But on the whole it has been pretty close to schedule.

We have kept a running list of the status of these various new generating plants--where they are, what may be holding them up, and so forth. If we receive a report that a certain plant can't get its turbines, can't get its structural steel, or whatever it is, we use our best efforts to get them. We have some authority insofar as expediting materials is concerned. We use that every day.

A report goes across my desk every week showing the status of these various orders. We seem to be completely out of the woods as far as the present situation is concerned. We lost a little ground the past three years. We think we will pick it up this year. We have sound reason for believing so, because all these items are now on the order boards. If what we did this year continues through the next year, we

will have a pretty good generating capacity in this country. By 1955 we will have considerably over 100,000 megawatts of capacity. That should take care of all our present difficulties.

It is important too, that we continue to interconnect our systems throughout the country, so that when one plant goes out, or one area is in difficulty, we can throw some power into it from another area. There has been a great deal accomplished in this field. Here in the East it is excellent. In the Southeast it is getting better all the time. In the Southwest it is improving. In Southern California it is excellent. In Central California it is excellent. In the Pacific Northwest the interconnection is excellent; but, as long as we keep putting aluminum plants in there, we will have the problem of supply. Incidentally, the aluminum plants in the Pacific Northwest are using approximately 50 percent of the power that is generated in the Federal plants.

General, I have covered everything on the principal subject. If there are any questions, I will be very happy to try to answer them.

COLONEL NORMAN: Gentlemen, Secretary Tudor is ready for your questions.

QUESTION: I understand, Mr. Secretary, that there are still large blocks of power that are not interconnected between systems. I have in mind an instance of a lack of tie-in between great industrial areas in the South and on the east coast. My question is, Would it not be in the national interest to encourage and assist industry in doing this job by modifying certain regulatory restrictions or by granting certificates of necessity so that they could amortize these costs?

MR. TUDOR: I am not familiar with the particular instances you cite; but I would say that it would be in the national interest to facilitate these interconnections, because without them there are going to be isolated areas. I am not familiar with what laws or practices may be restrictive in any instance; but, insofar as our department is concerned, we certainly would encourage it. I wasn't conscious that there were such. I am conscious of it now, and I will watch for them.

COMMENT: Under the Federal Power Act, once they cross a State border, they have to drop the Federal benefits. I think that is one of the contributing causes.

MR. TUDOR: I would agree that it would be in the national interest to get as much interconnection as possible.

QUESTION: Mr. Secretary, you told us that ODM decides on the goals for expansion and they are handed to your department for implementation. Would you tell us a little more about how you go about selling the idea that someone should have a facility expansion?

MR. TUDOR: We had in each of these Defense Mobilization Administrations in our department representatives from industry. I happened to be more familiar with petroleum than I was with the others, although I knew something about the others. Mr. Davenport, from Los Angeles Edison Company, was the last industrial man heading DEPA.

The industry sent in these top-flight people. They were familiar with the conditions throughout the country. Each industry supported its own staff in Washington, in our office. We supplied them with clerical help. We made a running inventory of the situation. Then we decided, upon their advice, as to where help was needed in order to supply these deficiencies.

We were able to give tax amortization and to expedite materials. We were able to give preference ratings. We are still able to do a few things in order to get these materials worked out. But primarily the determination of where this help was needed was based upon this group, consisting of the top men in the industry, working with our staff in the Department of the Interior.

QUESTION: That suggests that industry is ready to do it, that you have no trouble helping it. But suppose you can't find any takers. Suppose industry is reluctant to go ahead and build the plant. Then what?

MR. TUDOR: We haven't found that situation yet. Industry seems to be quite willing to go ahead. But I would say this: that in the event of a national emergency, a national need, if industry was not willing to go ahead, then it would probably be necessary for the Federal Government to step in. That is what our power policy says. There is one sentence in it, which was placed in there by the President himself, and which excepts national emergencies.

QUESTION: What is your view on the use of electricity for heating, such as in the heat pump? I am primarily interested in the economics of using electricity for heating, as opposed to other things that might be more required.

MR. TUDOR: There are two methods of heating by electricity. One is by direct radiation. That is rather expensive in the use of energy. That method was tried in experiments in the housing at Bonneville Dam, in the Northwest. They found that it is pretty darned expensive, and not even justified when they took the power right off the line at the dam. You could hardly justify that kind of space heating in a cold climate.

The heat pump is something quite different. There you only operate the pump by electricity, but you take the heat from some medium like water, the earth, or something of that kind. It is quite economical in the use of electricity. I don't think that that would be a great use of power. We are a little discouraged about the use of electricity for radiation heating in some of our areas where we are short of power; but I wouldn't be inclined to discourage the use of the heat pump.

COMMENT: I am very much interested in the power reserves that you have to hold, for instance, for one day in winter when it is 40 below.

MR. TUDOR: That is a question, too. Your area has to be concerned about whether heating with electricity is the proper means of doing it. You must have a high-peaking capacity to use electricity for heating. Therefore I don't think it is too good to use electricity, particularly when you need it for more important things.

QUESTION: Up to 15 years ago the State of Maine prohibited the export of power. I don't know whether that is still the situation or not. But if it is, assuming that it still does prohibit it, there would be no interconnection between the State of Maine and the rest of the New England power system. What is the thinking politically in a State that would make them do that?

MR. TUDOR: I think that probably is a question that Maine itself has to answer. Personally I think that it has led to an ultimate economic loss. That same question, however, comes up all over the country. We have it, for instance, in the Columbia Basin and in the Colorado River Basin, and the Missouri Basin.

The matter of upstream versus downstream benefits is involved. In fact, it is an international question. For instance, on the Columbia River some of the favorite power and storage sites on the river are in Canada. There is one that straddles the international boundary. We have the International Boundary Commission. They perhaps will have to settle that question.

I am afraid that we have been trying to settle with Canada on the basis of just buying the real estate which the reservoir will occupy; whereas, as a matter of fact, I think the Canadians are entitled to some benefits, either in kilowatts or in money, for the benefits that they generate downstream. That is a question we are going to have to face up to all over the country; and more so as we go into more complete development of our river systems.

It may be accomplished by interstate contract agreements. That has been in two or three instances very successful. But it is awfully hard on the people downstream to say that they are going to pay in cash for some storage upstream. By the same token, it is awfully hard on the people upstream to say that they must permit the use of their land for a reservoir without getting some benefits from downstream.

Maine is in somewhat the same position as far as both upstream and downstream are concerned. There are no power sites in Maine where other States benefit by upstream storage. There should be some adequate return to Maine for transporting outside the State. It is a fundamental resource. The development of that resource at the local site is of some value. However, I would not attempt to settle the dispute in particular instances. I am only pointing out what the problem is.

QUESTION: There has been some information put out about the proposed Hells Canyon power site saying that if the Government developed it, it would develop 100 percent of the power, would build dams sufficient to develop the whole capacity of that area; whereas, if the Idaho Power Company developed it, it would be something less than that--a series of small dams, which would develop something like 80 percent of the potential power. If that is true, what is the shutoff point in the utilization of our resources with a minimum of waste?

MR. TUDOR: There are two or three points to be covered on that. In the first place, I think that if it was finally decided that it was to be developed by the Bureau of Reclamation, they would come up with somewhat less development than has been proposed. That plan was developed on an estimated generation of 1.2 million kilowatts firm capacity, provided all the dams downstream are completed, which they are not, and provided that there is no further depletion of the water upstream in the years ahead.

It is further estimated that in some future years, when this development was completed downstream and upstream, that these plants will develop only 685,000 kilowatts of firm capacity, which is quite a drop off. So I think we are proposing to put up a large amount of money for a small block of extra power for a limited period of time. You get into a question of economics.

Insofar as our official position is concerned in the Department of the Interior, we are endeavoring to stay completely neutral in this situation. But for the moment I am not going to stay neutral. I feel as an engineer that the Government's plans for Hells Canyon were overdesigned, in that they were uneconomical for the last 200,000 or 300,000 kilowatts for that limited period of time. It would cost so much--in the vicinity of 1,000 dollars a kilowatt of installed capacity--that it is not economically justified.

QUESTION: Does this depletion that you speak of, where there would be a limitation of water, come about by the utilization of water somewhere else?

MR. TUDOR: Yes. That water will be used for further irrigation upstream. Idaho has a huge development for irrigation, and there is going to be further irrigation depletion up there.

Of course you might say that when you use water for irrigation, a very large part of it returns to the stream. But also there is a large quantity of it that transpires through the vegetation. The time will come when there will not be enough available to fill that storage reservoir, of 2.88 million acre-feet capacity, I believe. They will simply have to reduce their storage down to about a million, which is what the Idaho Power Company plans on doing.

Therefore I think the Idaho Power Company's planned development, of those dams with a million acre-feet storage, would be the better plan. Or you could do it the other way around--reduce the Federal plan to two dams and 1 million feet.

Bear in mind that the plan for Hells Canyon has no irrigation facilities directly connected with it. It proposes to use profits from the power sale to help build irrigation facilities elsewhere, not connected with Hells Canyon.

QUESTION: The Hoover Commission in 1948 and 1949 recommended that certain of the civil works functions of the Army Corps of Engineers be turned over to the Department of the Interior. I don't presume to ask your personal opinion on that. But would you care to comment on what the second Hoover Commission is doing about it, and its current status?

MR. TUDOR: I don't know what the second Hoover Commission is doing on that. I think Mr. Hoover is going to talk Saturday on that, and we are watching to see what he says, because we are intensely interested.

We are interested because we think the Army Engineers and the Bureau of Reclamation and, incidentally, the Department of Agriculture are interested because each of us is operating under separate laws and under separate regulations. I think that one thing we need badly is a national water policy. If we had that, and a set of common ground rules under which to operate, many of these difficulties that are apparent now, I think, would be wiped out.

Therefore we are devoting our efforts to the creation and implementation of a national water policy. It is a huge job. It is going to require the issuance of a water policy, which we cannot do under existing law. In the end it is going to require a change in some of our laws.

The Army Engineers have some laws that are in conflict with ours. There are more in the mill. So we have a chaotic condition, created by law rather than by, let us say, service rivalry. Surely you have some service rivalry; but, as far as we are concerned, we are not taking any position in the matter. We are litigants in the case, but we do not feel that we are umpires.

QUESTION: Mr. Secretary, this is getting a long way from California, but I have heard that the Passamaquoddy project is being reconsidered. Do you have any thoughts as to the practicability of the Passamaquoddy project?

MR. TUDOR: No. I am not familiar with the Passamaquoddy project. I believe there is some legislation in the mill authorizing some new study. But that was an Army Engineers project. I have read about it, but I am not familiar with the details. So I would not presume to pass upon the propriety of having further study.

QUESTION: Mr. Secretary, in the summer of 1947 the Navy Department was directed to send a destroyer escort to Portland, Maine. It tied up at the dock and supplied the city with power for five months. Could that be permitted under the present power policy?

MR. TUDOR: I think they also sent one to Tacoma and Seattle when they were short of power there. Let us say that that is in the nature of exceptions to the policy or rule. I don't think that is an economical way of generating power, but it may be necessary in case of a serious water shortage or a disaster or something like that, but not as a standard operating procedure.

QUESTION: With this further increase of power consumption, and the increase in fuel consumption, we are given to understand that our oil and gas reserves are running fairly low; that in about 50 years there will be a declining supply of those natural resources, but that we have enough coal to last a couple of hundred years. Do you anticipate that we are going to turn more to coal? If so, is anything being done to encourage an increase in mining capacity?

MR. TUDOR: Of course, the coal mining industry is in extremely poor shape. We are all conscious of that. I don't know what can be done to improve it. The President has appointed a National Minerals Committee to investigate minerals. I don't think they are going to cover coal at this time. Nonetheless we are conscious of it.

We do have huge coal reserves. We do have considerable oil reserves. Our shale oil in the Middle West is of great promise. The experiments of the Department of the Interior up to date have indicated that the price of oil won't have to go much higher until we can economically reduce those shales.

I do know that some of the steam plants are now burning oil. I know of some in California that are designed so that they can be converted to coal when the time arrives when oil is short. But I think that the fuel is here. Whether it is coal or oil is not important at the moment.

Here is another interesting thing. I think some people believe that we have great amounts of hydro. Here are some figures that may interest you on that score. In 1953 there was a total of 4 billion dollars invested in electric generation, transmission, and distribution facilities

in this country. Of that amount 1.65 billion dollars went into fuel generators--oil and coal; only 440 million into hydro; and 1.78 billion dollars went into transmission. So we are continuing to build almost four times as much fuel plants as hydro; and I think the proportion of fuel to hydro may increase in the future rather than decrease. We are running out of good hydro sites.

QUESTION: From time to time we hear reports about these reservoirs that we have for electric power production silting up at a much greater rate than was anticipated. Is there anything to that on an overall basis?

MR. TUDOR: Generally they are silting up slower than was anticipated in the initial estimates. We do anticipate some silting. That is not harmful unless you are depending upon the storage capacity. For just building up hydraulic head, it is not harmful. You are still going to have the same head, but you lose storage.

It is true that in a hundred or two hundred years, for example, the silting up of the storage reservoirs will be important, particularly on the Colorado River, which is a bad silting stream. But it is not happening any faster than was anticipated, generally speaking--some, yes; but in general it is not any faster. It is a little bit slower than was originally calculated.

COLONEL NORMAN: Mr. Tudor, you have done an excellent job of discussing this subject with us. We appreciate your coming away from your very busy duties and coming down here to discuss this problem with us. Thank you very much.

(20 April 1954--250)S/gw

E59705