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that absolutely no scientist so far has been able to tell their Parliament or our Congress why they are taking place.

Mr. DIENELT. As I say, I think the American people deserve to have a full and open disclosure of the kind of discussions taking place between this Congress and the Parliamentary group in Canada with respect to the Trans-Alaskan pipeline and, indeed, if those discussions indicates the claims we believe are without foundation for delay or other problems with the Canadian pipeline, reasons which indicate it is not feasible, I would certainly think the people of this country would seriously look at that and reconsider their view on the respective pipelines.

But they can't do it, if they don't know the information. And to my knowledge, the information has not been made public in a candid and full way.

Mr. SAYLOR. Now, Mr. Stoel, on page 7 of your statement, you are going to start using the Elk Hills Naval petroleum reserves. On what basis for public consumption are you going to use that, plus PET-4? Because it naturally follows, if you are going to use Elk Hills, you are going to use PET-4. They are both Naval reserves.

Mr. STOEL. I don't say we were going to use it. I said we could use it in an emergency. That is what it is for.

I am glad you brought up the point about Naval PET-4, which is on the Alaskan North Slope. The effect of an Alaskan pipeline would be to make, at least until a second oil pipeline is built, to make Naval petroleum 4 useless, because the Alaska pipeline, plus Elk Hills, could easily meet any emergency needs of the west coast all of the way up to 1985. The only place where the Naval PET reserve is important is the east coast and Midwest, and without a pipeline along the Canadian route, there is no way of getting the oil there. It would sit in the ground and be useless for the very emergency for which it was set aside.

Mr. SAYLOR. We can't pump it east?

Mr. STOEL. We could if we had a Canadian pipe to pump it along.

Mr. SAYLOR. You haven't looked very recently at some of the maps which show where all of the pipelines are right now. I admit we don't have all 48 pipelines, but we have some going across from the west coast, and we could build them through the United States. We might have some of them.

Mr. STOEL. I am talking about the billions of barrels of oil on the Alaska North Slope in Naval PET-4. There will be no use for the oil on the west coast if the Alaska pipeline is built and there will be no way of getting it east of the Rockies.

Mr. SAYLOR. You aren't going to be able to get any out of PET-4, unless we have a pipeline.

Mr. STOEL. That is right, and the pipeline would have to go along the Canadian route, which I think is a substantial advantage of testing out the Canadian route and considering building a standby pipeline, if we are really afraid of an oil emergency. The only use that oil is going to serve in the near future, in the immediate future, next 15 or 20 years, is to get it to the eastern part of the United States. The Alaska pipeline is going to prevent that by channeling the oil to the west coast.

Mr. SAYLOR. What are we going to do with all of the oil coming out and being processed right now on the west coast?

Mr. STOEL. Coming out of where?

Mr. SAYLOR. Well, the whole area of the west coast right now. Some is coming out of the Gulf of Mexico, some coming out of the coast of California.

Mr. STOEL. I am saying we would continue to use that oil on the west coast.

Mr. SAYLOR. Not that we are going to have an extra supply. We are going to use it where the market is.

Mr. STOEL. That is what I am saying. For example, oil offshore California, plus the amount that is known to be in Elk Hills to completely supply the west coast during an oil emergency up until 1985. Therefore, for national security purposes, we do not need the Trans-Alaska pipeline. We need a pipeline to the area east of the Rockies, which would have to go through Canada. That is the real thrust of my prepared statement and my testimony today.

Mr. SAYLOR. Dr. Cicchetti, is that the import of your statement on page 2? In other words, you say, beginning the second paragraph, the Trans-Alaska pipeline would oversupply the west coast for a considerable length of time.

Dr. CICCHETTI. I think that is right, Mr. Saylor. At the time I did my analysis, there was a good deal of evidence to indicate that under the quota system that was operating, it was a very different import quota system on the west coast and east of the Rockies. That by assuming Canada would still be allowed an overland exemption which it only had on the west coast at that time, assuming the Canadian oil continued to go into the west coast, assuming the southern Alaska continued to produce as much oil as they had been producing, assuming the west coast continued to produce as much oil as they had been producing, whenever you made that set of assumptions and added on 2 million barrels of oil coming out of the Alaskan pipeline, the growth and demand would not reach that supply until about 1990.

But in the Midwest, on the other hand, that 2 million barrels would not even be enough by 1976. Because demand is growing so much more rapidly, and it starts out with a base that is about 1.5 times the larger. The demand right now in the Midwest is between 5 and 6 million barrels a day. On the east coast, it is between 5 and 6 million barrels a day. On the west coast, the demand for oil is only about 2 million barrels a day. The amount of oil that could come at the time I did my study showed there would be this oversupply.

Now, we have changed the quota system and that has changed things a little bit. But, in addition to that, we have the President proposing to speed up offshore oil development in California and southern Alaska and the Gulf of Alaska. If we add in the fact the recent study that was produced by the Natural Resources Commission, if they could go offshore and not be concerned about environmental factors, or not be concerned about opposition of any kind, that they could produce 2 million barrels in California each day by 1985. If we take that additional supply in, as well as add in the Gulf of Alaska as well as the Alaska pipeline, I concede we have 6 million barrels a day by the middle of the 1980's on the west coast, when the demand would only be about half that.

That means 3 million, or 2 to 3 million barrels of extra oil could be marketed internally or sold to Japan. Perhaps we would have a new pipeline across the northern part of the United States, cutting across Montana and North Dakota, bringing it into the Midwest where the market is. We would extend the very small pipelines that cut across the Southwest. But that would bring oil to the gulf coast and it would have to be piped around to the east coast or new pipelines again in the Midwest. Each of these operations would involve loading and unloading oil in tankers in various parts of the Nation where this is not a necessity, and it would ultimately bring the oil at a much higher cost economically and environmentally into the Midwest.

The position is that if there isn't any opposition in Canada, and if, in fact, Canada wants an oil and natural gas pipeline system now, and if those statements that have been made by Canadian officials publicly saying that is what they want, if that is true, doesn't it make more sense to go ahead with the oil and natural gas pipelines through Canada now, rather than have these roundabout schemes?

That is the position I think most of us have taken.

Mr. SAYLOR. Let me ask you this. On page 3, what do you think the effect of your last sentence, "The State of Alaska responded by imposing a minimum well head price of $2.65 per barrel"?

Dr. CICCHETTI. I think that was a good thing for the State of Alaska to do. In my list of proposals, you notice one of the proposals, I say, if the Alaska pipeline is ultimately decided by Congress, I think an amendment should be added by this Congress, saying it is perfectly legal for the State of Alaska to impose that oil head price of $2.65 to protect itself from any international marketing schemes the oil companies might come up with. That is, if in fact the oil companies sell the oil from Alaska to Japan and sell it at only a price of about $2.50 a barrel instead of the higher price they could get on the Midwest or east coast, they ought to be protected against such schemes by the oil companies, and therefore, the State law that was passed, which the oil companies are opposing in the courts, ought to be made legal by this Congress.

So I support the State of Alaska's position on that.

Mr. SAYLOR. I am interested, because one of the reasons that has been given that we have our gas shortage right now is that sometimes the Federal Power Commission fixed a price of gas at the wellhead.

Dr. CICCHETTI. This is a minimum price.

Mr. SAYLOR. No, it is a minimum price. That is what this is.

Dr. CICCHETTI. No, the State of Alaska price is a minimum price they would use for taxes. In other words, the State of Alaska oil, the oil would be brought to midcontinent and would cost, say, $1.50 to get it to midcontinent, and let's say the price in midcontinent was $4.15. The difference in cost in price would be $2.65. The basis for royalty and severance taxes would then be $2.65.

On the other hand, if the oil came out of Alaska and was brought to Japan, and, say, it cost a dollar to get it to Japan. When it was sold to Japan, it was sold at a price of $2.50. Then the difference back at the well would be $1.50. The State's basis for taxes would be only 60 percent of what it would be if it went to the Midwest.

The State has said, by passing this law, whatever you do, we are going to protect ourselves. We will take whatever is the highest figure for calculating taxes. At $2.55 as our posted price, or whatever it turns out to be, whichever is higher. So, we will protect ourselves from marketing the oil in Japan or the Virgin Islands, and paying the world price under various schemes involved.

I think the State of Alaska, looking at statements made by oil company officials for import-export plans about having oil being shipped to Japan, about there being 500,000 barrels of oil each day, called Panamanian oil by the President in an interview at one point by making the statements. I think the State of Alaska had to be concerned about the international marketing of its oil and it reflected that concern by passing that law.

I am saying I support them in passing that law, and I think they have to protect themselves, because I would think there will be international marketing of this.

Mr. SAYLOR. What would you think if the Congress passed a bill forbidding the foreign exportation or sale of any of the oil or gas?

Dr. CICCHETTI. I think that is also a good point, which is one of the proposals I made in my testimony. I think another proposal would be to forbid the transportation of the oil out of Alaska in tankers that are not under United States control, at least as far as safety requirements, at least as far as having the right kind of equipment built into it.

Mr. SAYLOR. As far as any transportation by tankers, you know we are still protected by the Jones Act, despite all of the efforts of some people in this country, not just as far as Alaska oil is concerned, but any other reasons.

Dr. CICCHETTI. I believe the Jones Act only applies if the oil goes from one U.S. port to another.

Mr. SAYLOR. That is right.

Dr. CICCHETTI. If it goes to Japan or Central America for transshipment in a new pipeline across Central America, I am not sure the Jones Act will protect us.

Mr. SAYLOR. If we provide it is only to be used in the United States or our territories, then I think we are protected.

Dr. CICCHETTI. I guess that would be right.

Mr. SAYLOR. Dr. Curry, you have done a great deal of work on this and I for one want to congratulate you on the background of the work you have provided for this committee.

On page 8, you have something which I think is of extreme importance to this committee and to the Members of the Congress on this issue. That is based on the one item which exists in the northern part of Alaska and in sections of Canada, and that is permafrost. And the second sentence that you have,

> Depending upon the actual route chosen from Prudhoe Bay to the Mackenzie Corridor, permafrost hazard may be equal or less with the Canadian route. This is because the flanks of the Brooks Range are under underlain by "drier" permafrost than the Arctic Coastal Plain or interior Alaska permafrost areas.

What evidence can you give to this committee or provide for this committee to substantiate that statement? Based on what evidence you have?

Dr. CURRY. I have helped to compile permafrost maps for Alaska and have worked with the same data as supplied by the National Research Council of Canada to assess their permafrost maps of Canada. The maps prepared by the Mackenzie Valley pipeline group of permafrost in Canada are those maps prepared by the National Research Council of Canada. They are not maps prepared under their own auspices. They are generalized maps based upon drilled holes and have, in my opinion, very inadequate drill record and data. The Canadian record is less accurate even than the Alaska record. The Alaska record is admittedly inaccurate, too, particularly along the pipeline route.

I have gone around the drill records and have worked with various models, noting where each drill area is. And in laying out the drilling program for the Alaskan pipeline route, and the spotty drilling program for the Canadian route, we can see that the factor of abilities of vehicles to operate, drilling vehicles to operate, along the routes to supply these records is determined by the wetness of the site. There is built-in bias within the program. This has been recognized by the Department of the Interior and they have admitted that as progress proceeds on the Alaskan, you must go back and drill intermediate points to determine the actual permafrost based upon existing maps, and we can conclude this is the kind of thing we are looking at.

We look at the geologic side, the low land areas of flat permafrost, not where it is continuous, discontinuous, or sporadic, but the actual geologic site situations, the kind of rocks and sediment we find under various kinds of permafrost regime. We count up those area, and that is the basis for my analysis.

The statement in the second sentence that it could be equal or less, is based because I have given numbers, it is indeed longer along the existing——

Mr. SAYLOR. Has there been any drilling along the northern coast of Alaska from Prudhoe Bay to the Canadian line?

Dr. CURRY. Not to the best of my knowledge.

Mr. SAYLOR. This is the reason I asked this question. In other words, I am as concerned about it and I think the Congress is as concerned about it as you are, but there you have a distance of several hundred miles, and nobody has done, as far as I know, any research at all in that area.

Dr. CURRY. Right. Based upon our geologic understanding and available data along the North Slopes of Brooks Range, we conclude that to be a highly permafrost rich area. However, I am talking about an offshore route. This is based upon our geologic understanding of permafrost on the sea floor, which has just come up since the Impact Statement was prepared. We find there is not permafrost continuously offshore.

Mr. SAYLOR. What would be the effect of the ice pack in the Arctic Ocean, within a reasonable distance offshore or below mean high tide?

Dr. CURRY. The ice grounds against the sea floor in the winter, and you get tremendous pushing and shoving, very severe disturbance at the sea floor and shoreline facilities. It depends upon the gradient of the sea floor, how far from shore this particular effect goes. But we have found the naval submarine crews and present off-

shore drilling and we are now interested in the offshore area for PET production so you can be sure we are learning a great deal about it. We now learn the sea-ice effect does not affect, does not extend to the sea bottom offshore several miles. There is a zone, once you get out far enough, you do find an area that does not freeze solidly to the bottom. You still have the problem, however, as you no doubt are aware, of getting that pipe offshore, and that is a serious and severe problem.

Mr. SAYLOR. If you would place a pipeline on the ocean floor from Prudhoe Bay to Canada at such points as you determine to turn south into the Mackenzie Delta, what are the chances of rupture that would exhaust probably even as much permanent damage in the ice area as it would in the permafrost area?

Dr. CURRY. I can only speak from my own analyses on that and they are not adequate. But it seems to me there would be very severe hazards. The Arctic Ocean is one of the most sensitive oceans, the least diverse, and therefore one that should be protected more severly. I am not proposing that is a favorable alternative. I am merely proposing that is one of the alternatives that should be considered.

Mr. SAYLOR. Doctor, the reason I have asked you these questions is because of my knowledge of your studies having been retained by the Interior Department to do some of this work in the first instance. I think you are respected throughout the length and breadth of the land as one of the experts on this business of permafrost. I was concerned because many of the people I talked to still tell me they don't think anybody knows how to build a pipeline that will survive with hot oil in this permafrost area, in any of the known methods we have, unless it is cradling it the entire way, through the entire permafrost area.

I am worried about the affect that you have on all of these slopes up there, when you get your summer sun 24 hours a day on certain of the slopes in the north. The flux area is tremendous. Once it is disturbed and once that tundra is broken, I don't think anybody can tell you, as well intentioned as they are, be they from Alaska or from down at the Equator, they can't tell you the total effect of any of those slides of the tundra on top of the pure rock.

Dr. CURRY. In my opinion, you are absolutely correct.

Mr. SAYLOR. One other question. Dr. Freeman, page 14—since all five of you are going to ask Congress to make the decision—the last sentence you have, "In the spirit of NEPA, Congress can require that it be presented with adequate information on the relevant alternatives, and that this information be presented in a framework which facilitates comparison, and identifies the crucial tradeoffs." I think your statement indicates that there is no easy answer to this entire situation, and that whenever a route is determined, whether it be through Alaska, whether it be through Canada, there are certain tradeoffs. And the question is when Congress makes that decision, who are we going to please and who are we going to satisfy and who are we going to leave unhappy.

Now, you put out a good question for Congress. I would like to give you that question and answer.

Dr. FREEMAN. Mr. Saylor, I, in my lengthy analysis last year, did outline or sketch out the bare skeleton of the kind of framework I had in mind, in which for using the date in the impact statement, and for the TAPS pipeline and the single oil pipeline alternative through Canada, which were the only alternatives for which there was data in the impact statement, I gathered the information on various forms of environmental risk and on the various economic aspects, including the national security balance of payments considerations and not economic benefits and cost of delay, and showed several ways in which this information can be looked at in a systematic way, which identified what were crucial areas in which we had the least amount of information but which seemed most important in making a decision. It is possible, conceptually, as we look at the two alternatives, one might be favored in all respects, in which case clearly the preferred, there are no important tradeoffs involved. What my analysis showed, while the Canadian alternative was favored in most respects, there were a couple of respects where the Alaskan alternative was favored, but this showed one would have to place an inordinate amount or importance on those few factors favoring the Alaska route in order to make an overall judgment the Alaskan route was preferred overall. But if one placed reasonable weight, and I experimented with different kinds of weights to see how sensitive this was, but if one placed weights which fell within reasonable bounds on these different factors, the answer always came up the Canadian route.

I am suggesting this kind of framework be applied so we see what the areas of most uncertainty are and, in effect, ask Congress how important do you think marine transport or seismic risk is in comparison with net economic benefits. If you chose the Alaska route, my information suggests you are placing almost no value on the marine environment.

Mr. SAYLOR. I think your answer has indicated one of the things that is troubling every member of Congress I have talked to. This is going to be a judgment by the members of Congress, the members of this committee first, then the members of Congress. It depends entirely on what values you want to place on these various items.

This committee isn't going to please everybody. In all probability, I won't be satisfied with what comes out of the committee. My friend from Alaska may like it, my friend from Montana, and my friend from Guam may like it. I have been overruled before, but, I have a great deal of faith in the combined judgment of Congress. All I am saying is if there is certain other information we should have, I am saying to you who are in the scientific field, get us the best that you can, so that we can make a decision and give our decision to the 435 Members of the House based on the best scientific information we can get to make their judgment.

I think the testimony you five men have given has been, I think, very helpful in that regard. I want to thank each and every one of you for doing it.

Thank you, Mr. Chairman.

I am sorry I took so much time.

Mr. MELCHER. I think the time was well spent.

The gentleman from Alaska.

Mr. YOUNG. Thank you, Mr. Chairman.

The testimony given by these fine gentlemen was very well done, very concise, definitely leaning one way.

I was very interested in Dr. Curry's statement about Secretary Morton's assuming assumptions. I have been counting the words used, "could, if, I assume, I think, perhaps, my opinion," by all five witnesses here, and I have come up with 250 times you said this.

So there is a great deal of assumption in your testimony. I think you must admit, you assume cost, you assume environmental studies that have been made supposedly, the effects upon the economy of the United States, and in all due fairness, I hope you realize that assumption is not only the private feeling of the Secretary of the Interior, but apparently of part of your background.

Along this line, Mr. Chairman, I believe that we have the renowned environmentalist in the State of Alaska, Dr. Max Brewer has lived in Alaska for many, many years, and he has a small feasibility study on the Mackenzie Valley pipeline research, supposedly this great study that was made. And in that study, it refutes many of the statements made here today concerning the effect upon permafrost that has been brought out many times.

Dr. Curry, you mentioned the fact that the Canadian pipeline route proposal had not been studied very well as far as permafrost. Do you have any idea how many holes or test samples have been made—forget the maps, just test samples.

Dr. CURRY. Test samples for permafrost?

Mr. YOUNG. Right.

Dr. CURRY. Drill holes for permafrost?

Mr. YOUNG. Right.

Dr. CURRY. Well, only portions of the route have been drilled.

Mr. YOUNG. But in your statement, you stated it is a safer route because of permafrost dangers. Do you have any idea how many test samples? You said you were going to give us facts. What facts do you have? What core samples?

Dr. CURRY. Extensive core sampling program has begun. It has not been completed. It is underway at the present time.

Mr. YOUNG. Then your report assumes again that you found a safer route.

Dr. CURRY. I am basing my opinion upon published maps of the Mackenzie Valley, and based on approximately 250 core samples in critical areas.

Mr. YOUNG. And based upon aerial survey?

Dr. CURRY. Correct

Mr. YOUNG. Which is not very true or very factual when you get right down to it.

Dr. CURRY. It is good in areas of continuous permafrost. It is important in areas of sporadic permafrost.

Mr. YOUNG. How many core samples——

Dr. CURRY. About 6 times as many in permafrost.

Mr. YOUNG. That is right. About 4,000, exactly.

That is quite a few core samples: 200 samples in 1,400 miles.

Dr. CURRY. Correct. No, the 1,400 miles is not continuous permafrost.

Mr. YOUNG. But there are only 200 taken on the Canadian route.

Dr. CURRY. Taken in areas of continuous and in discontinuous permafrost.

Mr. YOUNG. How many miles of permafrost in Canada?

Dr. CURRY. Total permafrost?

Mr. YOUNG. Total.

Dr. CURRY. Dry and wet permafrost?

Mr. YOUNG. Dry and wet.

Dr. CURRY. We have probably 800 miles.

Mr. YOUNG. How much land has to be suspended because of permafrost?

Dr. CURRY. Well, according to the current engineering stipulation. or according to reasonable stipulations?

Mr. YOUNG. According to the environmental impact statement.

Dr. CURRY. According to the environmental impact statement, they would need to suspend about 350 miles.

Mr. YOUNG. And you base this on 200 holes drilled?

Dr. CURRY. No. I base it on geologic reconnaissance data upon which we determine——

Mr. YOUNG. How old was the data?

Dr. CURRY. It is an accumulation of data which begins as early as the 1880's.

Mr. YOUNG. When was the last report made on the data?

Dr. CURRY. 1971.

Mr. YOUNG. Another question. Did you bring up the fact—Mr. Saylor did—there is an application for a gasline through Alaska by—which gentleman was that?

Mr. DIENELT. I think it was me. I am not aware of that. I don't know they formally submitted it to the FPC. If they have, I would look into it.

Mr. YOUNG. Another thing. too, the gas can be permanently pumped back in the ground. It is a great expense, but it can be. It is not something they like to do. and the State has passed a law we can't flare gas and this is what they do.

Mr. DIENELT. The initial gas environmental impact statement and the depositions we took, they were uncertain. That is one of the areas we have to look into and propose a feasibility study to support it.

Mr. YOUNG. Along that line, you recommended there be a nonpartial group to make a study of two alternative routes and the findings be placed before Congress and Congress make their decision and if the decision is favorable for the Alaska route, then your group will accept this?

Mr. DIENELT. We are talking about whether the group would be successful in court. I think my testimony indicates we don't believe there would be basis for further litigation.

Mr. YOUNG. Do I have your assurance if we make the study and the study approves the Alaska route. you won't go to court?

Mr. DIENELT. I don't think I could give that assurance. I could indicate, as I have in the testimony, that there would be no basis for challenging the decision made by Congress, and that we believe the objectives of NEPA would have been satisfied.

Mr. YOUNG. Two times the Interior study has been before court. Once a court ruled in our favor, and once they chose to ignore it. Yet, you have told us here, if we act this year, that you will guarantee this will be back in court. You said it would be years of litigation if we chose to grant the right-of-way——

Mr. DIENELT. Yes.

Mr. YOUNG. Yes; there would be. So, if we make that study and 6 months from now the court said, or the group said the Trans-Alaskan line is the best line for supplying the energy and getting our fuel to the United States, then your group would bow to the wishes of the study group?

Mr. DIENELT. We can't say.

Mr. YOUNG. I am trying to get a time frame.

Mr. DIENELT. I understand. I think it is important. Because, as a factual matter, the quickest way, as I have indicated, is to go the route of having Congress make the decision. We can't in advance of seeing the study give any kind of absolute assurance as to what we would do. But I can say two things.

First of all, as Congressman Saylor indicated, we have faith in the Congress and we think the Congress would assure there would be an adequate study and we think that study would satisfy the objectives of NEPA.

Second, we think, as a practical matter, there would be no reason for and any basis for further litigation. That would be the end of the matter if Congress satisfied NEPA.

That is our objective in this lawsuit and the whole thing is to have a fair, impartial study, and have an unbiased decision. We don't believe we have gotten that or we can get that.

Mr. YOUNG. Along this line, you say we will accept the study—you represent the environmentalist group—it is a strange coalition I see here. But along that line, if the Trans-Canadian line was the best route by the study group's standards, isn't it true, there is no way we could keep an environmental suit of court along that line?

Mr. DIENELT. I think if the objectives of NEPA are satisfied by study——

Mr. YOUNG. I am talking about the Canadian route through Canada. You have environmentalist groups, you have excellent lawyers in Canada, you have groups that oppose the Canadian line. I am talking about the time frame. The time frame we have before us now of the Trans-Alaska pipeline, even with litigation, we know won't go any longer than 3 years. And if we were to pass the bill I introduced, if wouldn't be longer than 6 months.

Mr. MELCHER. Would the gentleman yield?

Mr. YOUNG. Yes.

Mr. MELCHER. I would like to clarify the record. I don't think Mr. Dienelt has tried to indicate that Congress makes a finding that must satisfy NEPA. Congress simply would make a finding that the environmental aspects have been weighed and considered and a decision was rendered. It wouldn't be Congress satisfying NEPA.

Mr. DIENELT. That is correct. Our testimony, prepared statements, and certainly what I intend to say, we believe in the objectives of

NEPA, the spirit of the act: our objectives in this controversy would be met by Congressional action, as we suggest. Not that Congress would formally prepare an impact statement or be the subject of the court suit itself. That is not what we are talking about. We are talking about satisfying the spirit of the act.

Mr. MELCHER. I read your statement to mean the spirit of the act. Your are using that phrase to mean as you described it now.

Does counsel have a question on this?

Mr. SIGLER. I have a question when Mr. Young is finished.

Mr. YOUNG. I am not finished, but if you want to go ahead and ask a question——

Mr. MELCHER. If it is appropriate. I think it would help.

Mr. SIGLER. My question is not on this subject.

Mr. MELCHER. All right.

Mr. YOUNG. May I go on?

Mr. MELCHER. Please.

Mr. YOUNG. What I am trying to get across, we are faced with a time problem. Your suits have created some of this time problem. I know you believe in them. You are making the statement in your statements, all of you, we must study the alternative routes, and you are assuming if we find the Trans-Canadian line the best route to go, that the public will think in 6 months or 8 months after the finding, the pipeline can be constructed, or within 2 years. But, again, I say we are looking at possibly through litigation, environmentally oriented litigation, many, many more years, because you have been able to, with your suits, been able to hold up for 4 years.

I am not arguing the merits of this suit, right or wrong. Let's disperse this assumption we are talking about, an 18-month construction of a Canadian line. We are not. We are talking about 5, 10, or 15 years.

Mr. DIENELT. With all due respect, Congressman Young, that is unbased assumption on your part.

Mr. YOUNG. Wait a minute. How can it be unbased, when you have been able to hold it up for 5 years already?

Mr. MELCHER. Would the gentleman yield again? I think Mr. Dienelt has made it clear, that under objective consideration by Congress, and the finding by Congress, that he would find no basis for a suit. I think Mr. Dienelt would agree with one more observation, if Congress made that decision the whole opportunity for suit on the basis of NEPA would not be available anyway. Because Congress would have acted and made a finding.

Mr. YOUNG. Mr. Chairman, what I am trying to get across in the Canadian route versus Alaska, we have no control over foreign nations. We are talking about time frame. We do know we can be granted the right-of-way, we can grant the right-of-way within 1 year, even if we followed the Interior's role, or lead and say, no, we don't want the exemptions to the NEPA Act.

Another thing——

Mr. DIENELT. Could I comment? Your statement, Congressman Melcher, was correct. When Congress acts, that as I understand the law, is the end of the litigation. NEPA has been satisfied. It is the

same situation if Congress acts here as you find in Canada where you have a parliamentary system and don't have NEPA and the kind of court process you will have here, and I think that is responsive to Mr. Young's inquiry regarding possible litigation of delay in Canada. It is not possible with that parliamentary system of government.

Mr. YOUNG. Mr. Chairman, am I granted more time?

Mr. MELCHER. It is your time. Thank you for yielding.

Mr. YOUNG. Dr. Cicchetti, could you give us some more precise detail on your technical qualifications to do oil supply and price economic analyses on such a vast scale? You mentioned you were a teacher of economics at the University of Wisconsin, and you wrote your book through Resources for the Future. And let me remind you I taught school for 10 years, and if I used a text as outdated as yours, I am sure I would be reprimanded by my students because they would be using the wrong information.

On what projects have you related to as far as oil and energy, and were you associated with before you went to Resources for the Future and wrote your book?

Dr. CICCHETTI. Well, I received my high school education in Bayonne, N.J.——

Mr. YOUNG. According to what projects concerning oil and supply?

Dr. CICCHETTI. I guess I would have to admit that the analysis I have done on oil supply and demand was my first effort in that field. I think anybody who has taken the time to look at the material I have put forward, indicates that it was based upon data that was prepared by oil companies, by Government agencies. I think that if anybody takes the time to look at what I did in that analysis, I used a computerized approach to analyze these questions, and in that computerized approach, I looked at hundreds of possible cases——

Mr. YOUNG. What I am trying to say——

Dr. CICCHETTI. Of demand and supply.

Mr. YOUNG. Isn't this the first time you ever dealt in anything concerning oil?

Dr. CICCHETTI. I am an economist. I have a Ph. D. in economics.

Mr. YOUNG. Do you know Dr. Levy, the renowned oil consultant for the world, disagrees with you very heartily? And he has done many, many studies.

Dr. CICCHETTI. I think there are additional people who have reviewed my manuscript. Resources for the Future, I think, is a first-rate research organization. They had the manuscript reviewed by officials of the Interior Department. They had the manuscript reviewed by officials of oil companies. Even members of the Congress got into the review.

Mr. YOUNG. The reason I ask——

Dr. CICCHETTI. Let me finish my point.

Mr. YOUNG. Don't make it too long.

Dr. CICCHETTI. I think the manuscript was thoroughly reviewed, and I think it is also reviewed in academic journals, and anybody who takes the time to look at what I said will see my conclusions were based upon facts, which I supported in the manuscript. And

the important thing to keep in mind is an economist is somebody who brings together different pieces of information for purposes of analysis. I think I am thoroughly qualified in doing analyses. If my data is wrong, my analysis is wrong. But the data came from government sources, oil company sources, and I documented it. I didn't pull a number out of the air the price of the Canadian pipeline is 60 cents a barrel, or the price of the Alaska pipeline, as Dr. Egan did 2 weeks before the Senate committee. I documented the source of all of my numbers.

Mr. YOUNG. You say oil from the North Slope would be 65 cents greater in Chicago and 90 cents greater in New York than Los Angeles?

Dr. CICCHETTI. Thas is from the Platt's Oilgram Price Service. I have the recent issue that came out last week, and that is still the price difference, because they haven't recorded the recent price increases yet. Yes, that is true, and I documented the sources of those numbers.

In addition, the methodology I used in my analysis was adopted by the Interior Department in their economic statement.

Mr. YOUNG. It goes back to my original statement. I think you are outdated. Your original analysis was made 6, 8, or 10 months ago. I have your book, by the way. I think you haven't updated your presentation.

Dr. CICCHETTI. Which part would I update?

Mr. YOUNG. I would say right now if they delivered to Chicago from the fulf coast it is 3.95 at the refinery. In California, 80 per barrel. That is recently.

Dr. CICCHETTI. That is not true.

Mr. YOUNG. This is the report we just got.

Dr. CICCHETTI. From whom?

Mr. YOUNG. From the oil sources that know.

Dr. CICCHETTI. I can show you the Platt's Oilgram prices.

Mr. YOUNG. The recent prices?

Dr. CICCHETTI. I can show you the recent prices, and I can show you another factor. When Resources for the Future, sent my book out to be reviewed they sent it to the Interior Department and the oil companies. The president of Alyeska Co. reviewed those relative price differences and said I was wrong. He said I was wrong because the price of a barrel of oil in Chicago was all right, but the price I used for barrel of oil on the west coast was much too low. When they sent it to the Interior Department, they said my relative prices were wrong as well. They said I had the right price for the west coast, but much too high for the price in the Midwest.

So they both chipped away at 60 cents difference and got it down to the 25 or 30 cents difference. But when I went out and tried to replicate, using the sources I was directed to by both groups, I came to the conclusion my relative prices were just the same as they were. I think that if people don't believe my qualifications in the pricing and cost area, somebody, perhaps directed by this committee should undertake an objective study. I think that is what we are asking for. If you don't like my numbers, then you should change or have somebody else do the analysis who doesn't have a vested interest in this matter.

Mr. YOUNG. We will have it done before the committee acts on the bill.

On page 40, this earthquake you are speaking about—the danger has been emphasized by referring to the Good Friday earthquake of 1964, which occurred at the former site of Valdez.

The Good Friday earthquake did not occur at the former site of Valdez.

Dr. CICCHETTI. The upper percent didn't.

Mr. YOUNG. In your book, it occurs, it states, at Valdez.

> The effects were felt at the old Valdez townsite, but these effects were largely due to the unstable mud-silt soil from which the old town was built.

The town was built for accessibility to water that was necessary and to tidal waves. The pipeline terminal will be a good distance from the old townsite, high enough to avoid tidal waves and built on solid, core-sample bedrock.

In the next sentence you refer to the new site of the terminal city of Valdez as based on bedrock and the storage facilities some 200 feet above sea level. You are obviously confusing the pipeline terminal area and the new Valdez townsite. The new Valdez townsite is at Mineral Creek, clear across Valdez from the location of the terminal. I know you think I am nit-picking and I am to some degree, but because of this kind of information in your book, easily available from literature and you claim you assimilated this literature. I would like to see where you got the information. It is published and widely circulated, common knowledge to anyone from Alaska who should be interested in the field as you are, especially your counsel. I think you ignored many facts, assumed many facts. You assumed facts for lack of research or distorted the facts, and in this case it fits your argument, an outdated argument. Frankly, it makes me suspect your whole testimony. I would like you to have updated testimony. That is what I am asking.

Dr. CICCHETTI. I think if you look at my prepared testimony today, I updated some of my numbers, especially those numbers on prices. I think, furthermore, if you read that passage in the book, the whole point of that passage is that environmentalists being concerned about Valdez because of the Good Friday earthquake damage done in 1964, there is no basis for it. There is no longer any basis to be concerned about Valdez being destroyed by an earthquake. So I am making a position that is against environmentalists in that statement, in full support of the position that you would take. I think anybody who looked into the matter is no longer concerned about Valdez being destroyed. At least the oil tank storage facilities being swamped by a tidal wave. I think that is the whole purpose of the statement I made.

Again, I should point out, I think the most significant part of my book and my analysis has been the economic aspect. I made no claim an environmental engineer or geologist or anything else, but merely to have reported what the conditions were when I started my economic analysis, and I started them on the basis of testimony and evidence prepared that came to the conclusion that environmentally, the Canadian route was superior.

Mr. YOUNG. There has been a statement by most of you that Canada is willing to negotiate and figures of national prominance say they are willing to work with Canadian pipeline, and you stated in your testimony that we heard contrary testimony from the Interior Department. from my good colleague, Lloyd Meeds, and I respect him very highly.

I have a statement here from one of the leading and large oil companies, not with the trans-Alaskan pipeline, starting if the crude line—before the Canadian group—if the crude line is to move, Prudhoe Bay oil is rerouted from Alaska via Mackenzie Valley, then the gas pipeline will probably be delayed. This is a Canadian. Which to my mind is not in the best interest of the Canadian future energy requirements.

I have statements from Mr. MacDonald, a leading environmentalist of Canada, stating the fact they are not interested in having that pipeline through Canada.

I like the chairman's suggestion. although if they don't respond, I don't know what we can do, because we can't demand they come down here, but I do think there has to be some clarification from leading Canadians involved in government from Ontario, Toronto, and the Provinces, because it has been stated the Canadian land claims won't be a big problem, and it will be a problem, maybe more than what you think.

What I am trying to get across, environmentally, I think we are on good grounds, the Department thinks we are on good grounds, economically. I know we are on good grounds, and timewise, and the need for energy, is of paramount importance to this Nation. All of you represent basically environmental groups. I have stated this to other environmental groups that beware, you win the battle and lose the war, because this summer when they stop getting gas for their cars, when they want to go fishing and hunting on the weekends, you say they can supply it, and this winter when the schools get cold and, they will, and farmer starts not being able to produce what they want, then you are going to lose the war and this is what will happen.

I stated this to you before. You made great inroads and I respect what you have done. I think Alaska has the best engineering pipeline ever built in the world, and it will be safe and largely it is due because of your insistence. But if you continue your pursuit, if there are other environmental suits filed in Canada, which there will be because we have no control over—and you can't shake your head, because you aren't legal over there either. Then you will have problems, and I say if you lose the war, God help us all.

Mr. Chairman, I am through.

Mr. MELCHER. Counsel has a question or two.

Mr. SIGLER. Mr. Chairman. I just want to pursue one line very briefly. I have listened carefully to the testimony, and I scanned the written statements as best I could during the time here. I have the strong impression that all five members of the panel feel that on the basis of the technical information they have offered the Canadian line is the preferred line, not only from an environmental standpoint, but from economic and security standpoints as well.

I would like to ask any one of the panel if my impression is correct. Does anyone disagree with my impression?

Dr. CICCHETTI. I have one statement to make, and that is, I think that when you talk of the Canadian line, there are two possible Canadian lines. Most people think of the Mackenzie Valley line. There is an alternative Canadian line which I think also has to be weighed in reaching a decision.

Mr. SIGLER. Then, may I know whether you have weighed both and come to a conclusion?

Dr. CICCHETTI. In my economic analysis, I looked at the cost of constructing a line that would follow the Alaska line to Fairbanks and from Fairbanks to Edmonton would follow the system of roads——

Mr. SIGLER. If you allow me to interrupt, I d n't want to go through the reasoning, I want to know whether you have reached a conclusion.

Dr. CICCHETTI. My conclusion is it probably will cost more money, but environmentally, if the permafrost is an unsolvable problem, as Mr. Saylor said earlier, then it is probably the best route to go.

Mr. DIENELT. Apart from that, counsel, I would respond to your question by saying your impression is absolutely correct.

Mr. SIGLER. Then the question I want to ask is, if you have satisfied yourselves on this subject, you have offered a wealth of technical information here and a conclusion, if you have reached that conclusion, why do you think we should have another study? We have your study, we have the Interior Department's study, they reach opposite conclusions, but why have another one, if you have satisfied yourselves?

Mr. DIENELT. If I may respond, our testimony is based upon the information that has been available.

We believe that the Congress doesn't have a basis for fully informed choice and that the short period of study, of pulling together the information for the first time providing an unbiased view of the respective alternatives, particularly with respect to the attitude of the Canadian government, which is obviously on the minds of Senators and Congressmen, is the most expeditious way of pursuing this rather than having a long fight on the merits of Alaskan versus Canadian alternative on the basis of what we have now.

Mr. SIGLER. But I prefaced by question with the statement that you had already considered these factors and had come to a conclusion, because throughout the testimony, both oral and written, repeated statements have been made to the effect that a Canadian route is better than the Alaskan route. You have reached that judgment and if you believe that your judgment is sound, I don't see why there is a need for any further study. Why do you not ask this committee to consider your material along with the Interior material and reach its judgment?

Mr. DIENELT. Because we believe that the full material ought to be compiled to comply with the objectives and the spirit of NEPA and an unbiased study should be made. From all appearances, from everything we have said, we believe the Canadian route will prove out to be superior.

Mr. SIGLER. But you already satisfied yourselves, as I understand it.

Mr. DIENELT. We satisfied ourselves on the basis of the information that exists. We are unfortunately not in the position of voting on a proposal. We believe Members of the Congress have expressed the feeling and the Senate has expressed the feeling there isn't enough information on the Canadian route, and that is the position we take.

Mr. SIGLER. Let me phrase the question very bluntly. If you were a dictator and had the authority to make a decision, would you decide it now or would you want more information?

Mr. DIENELT. At the very minimum, I would want some discussions with the Canadian group and I would want some more information, and I think it can be done in a very brief time.

Mr. SIGLER. That means you are not prepared to make a decision now, if you were authorized to make the decision.

Mr. DIENELT. Speaking for the three plaintiffs in this case, their position is they want to support the bill which will provide a short, unbiased study after which time Congress would make a decision. I personally do not.

Mr. SIGLER. I realize that is your recommendation, but what I was after, in support of that recommendation, I was asking whether you feel, if you were making the decision, that you have the data necessary to decide?

Dr. FREEMAN. Sir, if I could respond as not representing plaintiffs, but as a social scientist, I have examined the economic data that are available, and I interpret that as providing an advantage for the Canadian route, but also seeing there are gaps and inadequacies in the available data, especially with respect to considering economics of the joint corridor. My reasoned professional judgment is if that information was gathered and documented it would further the case for the Canadian alternative. But that is a professional judgment, and it should be removed from the realm of judgment and made a matter of fact and record by gathering that information. That is why I favor further studies.

Mr. SIGLER. I understand you to say you are not fully convinced. You believe something would happen, but you would like to see it demonstrated by further study.

Dr. FREEMAN. That would be my position, yes, sir.

Mr. STOEL. I would like to speak for a second. My subject today was national security. My analysis indicates a Canadian pipeline would be superior from the point of view of national security. First, I am not sure I have all of the information on national security, and, second, I don't really expect the Congress of the United States to accept my judgment on national security against that of government agencies who have reached a different conclusion.

But I think ignoring some of the factors I have set forth, I think as a realistic practical matter, what is needed is someone with more weight than I have to take another look at it and take another look and see if my conclusions are correct. I think I raised doubts about previous analysis, but I am not going to say people are going to accept my beliefs as authoritative on the subject.

Mr. SIGLER. I think I understand your answer.

Dr. CICCHETTI. I would like to respond as well. Mr. Young pointed out that there are a lot of "ifs" in our statement. I think we are saying we are making comparisons of two routes only holding everything else constant and just comparing. If we looked at the cost, we might make an estimate. We looked at national security defined a different way. We had all of the ifs and qualifications because we were holding everything else constant. If I had to make a decision today, based upon the public record, I would advise this Congress to vote for the Canadian pipeline. But I am also openminded enough and also believe that the private record might be different than the public record, or additional information might be pulled together. It might be integrated in a certain way. If that is going to take us 6 months to do for a decision as important as this and not only the people in the State of Alaska and the west coast and oil companies, but people in the Midwest and on the east coast and the schools that are going to be cold and without gasoline in those parts of the country, I think for those people we have to get the information.

Mr. SIGLER. I don't want to pursue this any further.

All I am trying to find out is whether the panel is satisfied on the basis of your present information that your conclusion is a correct one. That is all I was trying to pin down.

Thank you, Mr. Chairman.

Mr. MELCHER. Thank you.

I want to thank again all of the members of the panel. I think you have been very helpful for the committee. Your prepared testimony and your summary has been excellent, and your answers to questions have been pertinent. Thank you very much.

The committee is adjourned. We meet again on Monday.

[Whereupon, the committee adjourned at 12:50 p.m., to reconvene on Monday, May 21, 1973.]

OIL AND NATURAL GAS PIPELINE RIGHTS-OF-WAY

PART II

MONDAY, MAY 21, 1973

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC LANDS
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room B-374, Rayburn House Office Building. Hon. John Melcher presiding.

Mr. MELCHER. The subcommittee will come to order.

Today, we will continue our hearings on the Alaska pipeline right-of-way bills, including all of them that are related to it.

Our first scheduled witness today is Mr. Stewart Brandborg, executive director of the Wilderness Society.

Unfortunately, he can't be with us today, and he will be scheduled at a later time.

This makes our leadoff witness Mr. Alexander C. Tomlinson, Morgan Stanley & Co., New York, N.Y.

STATEMENT OF ALEXANDER C. TOMLINSON, MORGAN STANLEY & CO., NEW YORK, N.Y.

Mr. TOMLINSON. Thank you.

Mr. Chairman, gentlemen:

My name is Alexander C. Tomlinson. I am a general partner of the investment company of Morgan Stanley, and I am president of Morgan Stanley Canada, Ltd.

As I hope you are aware, Morgan Stanley is known particularly for its management of very large financial functions, public utilities, and the largest corporate bond offer ever made and the largest private placement ever done.

Our firm also managed the financing for the Churchill Falls hydroelectric power project and laboratory, which is the largest new construction project ever privately financed.

Now, Morgan Stanley has been acting for several years as financial advisor for the trans-Alaska pipelines system and to certain of its other companies.

In addition, our firm is financial advisor to Canadian Consortium, shippers and consumers of Mackenzie, Delta, and Prudhoe Bay gas.

Accordingly, I speak as director of a leader underwriting firm whose principal business is the raising of capital directly or through affiliates in the United States and Canada and abroad.

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We have experience in raising very large sums of money, such as will be involved in the financing of transportation facilities to bring oil and gas out of the Prudhoe Bay area and familiarity with the particular financial problems this project poses.

Since the proposal that an oil pipeline through Canada be substituted for the trans-Alaska line has financing implications, that bears importantly on delivery dates for both oil and gas, I asked for an opportunity to address this committee and I am very grateful for the privilege of doing so.

I would like to refer for a moment to the proposed financing of the trans-Alaska pipeline.

No final financing plan has been arrived at to my knowledge. However, after much study the undivided interest form of ownership has been decided upon for TAPS.

The present speculation is that since the credit for the financing will be completely that of owners and shippers of Prudhoe Bay Reserves they will provide their respective shares of the funds required.

This will be done through financing operations by their individual pipeline subsidiaries.

This method is feasible because the owners' credit is broad enough to assure the potential lenders of two things: One, that sufficient funds to complete the line will be obtainable; and two, that the loans will be repaid regardless of any failure or interruption of the pipeline.

These individual financing operations can be spaced over the period of construction without heavy one-time demands on the markets.

We expect the primary source of funds for this purpose will be the U.S. market.

Financing for a Canadian pipeline will take quite a different form. We are advised that only a prime study for a Canadian route has been made and that definitive engineering final route selection and the obtaining of necessary Government approvals for such a route would cause a delay of several years compared with a very advanced state of planning for the Alaska-Canadian route.

In addition, I understand that conservation practices would indicate that gas from the Prudhoe Bay field not be produced until production of Prudhoe Bay oil has commenced.

Therefore, the timing of the construction of a gas pipeline to these reserves will be dependent on the construction schedule for the oil pipeline.

We are also told that it might be difficult due to limited availability of construction equipment and personnel to construct a gas pipeline and an oil pipeline through Canada at the same time.

It therefore seems reasonable to assume that the timing of the gas pipeline to Prudhoe Bay and the Mackenzie Delta would be dependent upon the timing of the oil pipeline and would therefore be subject to significant delay if the Canadian alternative would be selected for the line.

Delay, of course, will significantly increase costs of both lines on any reasonable estimate of continuing inflationary influences.

According to testimony previously presented to the subcommittee by the Department of the Interior of the United States and by the chief executive officer of an oil company which owns substantial

reserves at Prudhoe Bay, when final plans for a Canadian pipeline are complete, capital costs will substantially exceed those of the TAPS alternative.

My understanding is that it might cost $7 billion to $8 billion, or as much as $2 billion to $3 billion more than the Alaskan alternative, even including the tankers required for TAPS, depending upon the ultimate capacity to be constructed.

Canadian authorities have indicated that a Canadian oil pipeline will have to be controlled by Canadians. This would mean that at least the majority of ownership of the line would not be held by those that are providing the credit for it. As compared to the far simpler alternative of TAPS, where each of the owners will finance his portion of the pipeline costs with the direct pledge of his own credit, in my opinion, this would require that an oil pipeline through Canada be financed as a single operation—a project financing. By this I mean that it must be a unified undertaking and have its own inherent economic and operational integrity. It cannot be financed piecemeal, but rather all of the funds to finance the entire project must be raised or committed at the outset.

No individual segment would be a viable economic entity on its own. A lender may be expected to provide funds only on the assurance that agreements with other lenders and equity sources are in effect to provide total funding for completion of the line.

Lenders will also want to be assured that a single group of financially responsible participants can at all times control the policies of the project so that decisions will be made in the best interest of the overall undertaking. This will include the ability of the group to take effective and timely action to insure completion of the line and to institute remedies in the event of an interruption of service.

From the point of view of the Canadian economy there are far greater implications in financing a major project in Canada than simply finding 51 percent of the equity funds for the project from the Canadian market.

In order to minimize the detrimental effect of any major project upon the exchange rate of the Canadian dollar, it is desirable, as closely as possible, to match Canadian financing with Canadian expenditures and non-Canadian financing with non-Canadian procurement. Thus a Canadian oil pipeline would be dependent on Canadian capital markets for a significant portion of its financing. This project would have an important impact on Canadian financial markets and on Canada's ability to support and provide financing for a number of major projects in a short span of time.

Total financing requirements are between $7 billion and $8 billion and would make it by far the largest financing ever attempted in the private capital market.

It may well be that participation by the United States and Canadian Governments would be required not merely as a credit backstop but as major providers of funds.

This estimated total cost significantly tops most of the other multibillion-dollar projects currently under consideration in Canada.

At the same time, the Canadian arctic gas line, the panarctic gas line and the James Bay hydroelectric project are all Canadian projects with capital costs in the multibillion-dollar price range which

are more directly beneficial to the Canadian economy than the oil pipeline.

In my judgment, it is unlikely that all these major projects, plus a Canadian oil pipeline, can be financed within the time span presently in prospect.

To put the demands which would result from financing even a portion of several projects of this size in the Canadian market in perspective, net new securities issues payable in Canadian dollars in the past 5 years average Canadian $5.4 billion per year; of which an average of only Canadian $1.1 billion was in the form of corporate bonds and Canadian $500 million in equity securities, the balance being for the most part Federal, provincial, and municipal securities. It can be seen that the Canadianization of this oil pipeline, even assuming that the funds are raised over a 3- to 4-year construction period, will potentially create a significant excess of demand for Canadian financing over the available supply of investment funds in Canada, particularly if some other major Canadian projects were to compete for funds at the same time.

Looking more broadly at the external impact of the Canadian needs, in my judgment, the financial markets of the world do not have the capacity to handle all of the Canadian projects under consideration plus this Canadian oil pipeline.

If this line is to be built in Canada then some other projects, such as the Mackenzie or the Panarctic or James Bay pipeline will not be built.

I obviously cannot speak for Canadians or their Government, but I do not believe they will be willing to give up one of these in order to facilitate construction of a pipeline through Canada that will deliver U.S.-owned oil to the United States.

Thank you very much.

Mr. MELCHER. Thank you very much, Mr. Tomlinson.

You have summarized your statement and without objection your full written testimony will be made a part of the record.

Mr. TOMLINSON. Thank you.

Mr. MELCHER. Hearing no objection, it is so ordered.

[Full text follows:]

STATEMENT OF ALEXANDER C. TOMLINSON OF MORGAN STANLEY & CO.

INTRODUCTION

My name is Alexander C. Tomlinson and my address is 3 Westmount Square, Montreal 216, Quebec, Canada. I am a United States Citizen. I joined Morgan Stanley & Co. in 1950 following undergraduate studies at Haverford College, service in the U.S. Navy, graduate work at the London School of Economics and receiving a Master's degree from the Harvard Business School. I have been a General Partner of the Firm since 1958. I am also a Managing Director of Morgan Stanley & Co. Incorporated, a parallel corporation which conducts our underwriting and brokerage activities. In May, 1972, I became President of Morgan Stanley Canada Limited, a subsidiary which has established its offices in Montreal and is engaged in building an investment banking business in Canada.

ACTIVITIES OF MORGAN STANLEY

Morgan Stanley is an investment banking firm engaged in all phases of the underwriting and distribution of securities of industrial corporations, public utilities, banks and financial corporations, transportation companies,

including air lines and pipelines, and foreign corporations and governments. We are members of the New York Stock Exchange and associate members of the American Stock Exchange. Since 1935, the year Morgan Stanley & Co. was founded, the Firm (including its foreign affiliate, Morgan & Cie International S.A.) has managed a total of nearly $70 billion of security offerings. The Firm managed a total of about $8 billion in each of the last two years, and has consistently ranked as one of the leaders in dollar volume of underwritings managed in the United States. Morgan Stanley has also been manager or agent in the sale of over $850 million of securities of Canadian corporations in United States markets in the past five years or over 40% of the total Canadian corporate financing in this market during that period. In addition to activities relating to underwriting and private placements, Morgan Stanley provides general financial advisory services on a wide range of matters, including long-range financial policy and planning.

The $70 billion total financing volume I mentioned included over $2 billion of issues done by our firm for 18 pipeline companies. It also includes the largest public corporate bond offering ever made—$1.6 billion of American Telephone & Telegraph debentures with warrants attached, and the largest private placement ever done, a combination of straight debt and preferred stock for American Telephone & Telegraph amounting to $1 billion.

Despite the relatively recent opening of our Canadian office, Morgan Stanley is not new to the Canadian scene. We handled in 1968 the private placement of $550 million for construction of a hydro-electric power project in Labrador by Churchill Falls (Labrador) Corporation Limited, which is the largest project ever privately financed. This was the culmination of over ten years of advisory service in the financial planning of the project. The Firm has also managed or co-managed public offerings or private placements of U.S. dollar-denominated securities for the Government of Canada aggregating $865 million.

Morgan Stanley has been acting for several years as financial advisor to the Trans-Alaska Pipeline System and to certain of its owner companies, including pipeline affiliates of British Petroleum, Exxon Corporation and Standard Oil (Ohio). In addition, our firm has been appointed a financial advisor to Canadian Arctic Gas Study Limited, which is a consortium consisting primarily of owners, prospective shippers and consumers of Mackenzie Delta and Prudhoe Bay gas. We previously served as financial advisor to the Northwest Project Study Group, one of two predecessors of Canadian Arctic Gas Study Limited. For several years we have been advising both TAPS and the Canadian Arctic gas pipelines with respect to the design and feasibility of financing plans. The ability to finance successfully these lines depends upon many factors, including size and condition of money markets in the United States, Canada and elsewhere, the credit of the participants, the new technology involved in pipeline construction in the far North, unusual environmental considerations and potential impact on the economies of Alaska, Canada and the lower 48 States.

Accordingly, I speak from the perspective of a managing director of a leading underwriting firm whose principal business is the raising of capital directly or through affiliates, in the United States, Canada and abroad, with experience in raising very large sums of money such as will be involved in the financing of transportation facilities to bring oil and gas out of the Prudhoe Bay area and familiarity with the particular financial problems this project poses.

I am convinced that the earliest possible delivery of oil and gas from Prudhoe Bay and the Mackenzie Delta is critically important to the United States economy and the balance of payments in this era of increasing imbalances of supply and demand for energy. Since the proposal that an oil pipeline through Canada be substituted for the Trans-Alaska line has financing implications that bear importantly on delivery dates for both oil and gas, I asked for an opportunity to address this committee and I am very grateful for the privilege of making a statement on this matter.

FINANCING OF THE TRANS-ALASKA PIPELINE

No final plan of financing for the Trans-Alaska Pipeline has been arrived at to my knowledge. However, under the undivided joint interest form of ownership which has been decided upon for TAPS, the present expectation

is that, since the credit for the financing will be completely that of owners and shippers of Prudhoe Bay reserves, they will provide their respective shares of the funds required through financing operations by their individual pipeline subsidiaries, possibly together with one or more consortia of pipeline subsidiaries of oil company owners. This method of financing is feasible because the owners' credit is broad enough to assure potential lenders that (1) sufficient funds to complete the line will be obtainable and (2) loans will be repaid regardless of any failure or interruption of the pipeline. These individual financing operations can be spaced over a considerable period without heavy one-time demands on the markets. We expect that the primary source of funds will be the United States market. The latest estimate of the total financing required consists of approximately $3 ½ billion plus possibly as much as $1.6 billion for tankers. The financing of the tankers and the pipeline will probably be completely separate transactions and may well be done in completely different segments of the U.S. capital market.

FINANCING A CANADIAN OIL PIPELINE

General

We are advised that only a preliminary study of the Canadian route for an oil pipeline has been made and that definitive engineering, final route selection and the obtaining of necessary government approvals for such a route would cause a delay of several years compared with the very advanced state of planning for the Alaskan route. In addition, we understand that conservation practices would dictate that gas from the Prudhoe Bay field not be produced until production of Prudhoe Bay oil has commenced, and, thus, the timing of the construction of a gas pipeline to these reserves would be dependent on the construction schedule for the oil pipeline. We are also told that it might be difficult due to limited availability of construction equipment and workers to construct a gas pipeline and oil pipeline through Canada at the same time. In addition, as I will develop later, the ability of the Canadian financial markets to support two major contemporaneous pipeline projects in Canada may be somewhat limited. It therefore seems reasonable to assume that the timing of the gas pipeline to Prudhoe Bay and the Mackenzie Delta would be dependent upon the timing of the oil pipeline, and might be subject to significant delay if the Canadian alternative were to be selected for the oil line. Delay, of course, will significantly increase costs of both lines on any reasonable estimate of continuing inflationary influences.

We understand that, according to testimony previously presented to the Subcommittee by the Department of the Interior of the United States and by the chief executive officer of an oil company which owns substantial reserves at Prudhoe Bay, it can be expected that, when final plans for a Canadian oil pipeline are completed, its capital costs will substantially exceed those of the TAPS alternative. Our understanding is that the Canadian alternative might cost $7 to $8 billion, or as much as $2 to $3 billion more than the Alaskan alternative, even including the tankers required for TAPS, depending upon the ultimate capacity constructed.

Canadian authorities have indicated that a Canadian oil pipeline will have to be controlled by Canadians. This would mean that at least the majority of ownership of the line would not be held by those that are providing the credit for it. As compared to the far simpler alternative of TAPS, where each of the owners will finance his portion of the pipeline costs with the direct pledge of his own credit, in my opinion, this would require that an oil pipeline through Canada be financed as a single operation—a project financing. By this I mean that it must be a unified undertaking and have its own inherent economic and operational integrity. It cannot be financed piecemeal, but rather all of the funds to finance the entire project must be raised or committeed at the outset. Lenders will regard this project as encompassing all trunk line facilities required to transport oil from Alaska to markets in the United States, because no individual segment would be a viable economic entity on its own. A lender may be expected to provide funds only on the assurance that agreements with other lenders and equity sources are in effect to provide the total funds required for completion of the line. Lenders will also want to be assured that a single group of financially responsible participants can at all times control the policies of the project so that decisions will be made in the best

interest of the overall undertaking. This will include the ability of the group to take effective and timely action to insure completion of the line and to institute remedies in the event of an interruption of service.

From the point of view of the Canadian economy there are far greater implications in financing a major project in Canada than simply finding 51% of the equity funds for the project from the Canadian market. In order to minimize the detrimental effect of any major project upon the exchange rate of the Canadian dollar, it is desirable, as closely as possible, to match Canadian financing with Canadian expenditures and non-Canadian financing with non-Canadian procurement. Thus a Canadian oil pipeline would be dependent on Canadian capital markets for a significant portion of its financing. This project would have an important impact on Canadian financial markets and on Canada's ability to support and provide financing for a number of major projects in a short span of time.

In the sections which follow, I should like to develop further the financial implications of these four specific points regarding the Canadian oil pipeline, namely, (1) its higher costs, (2) the delay involved, (3) the fact that project financing would be required, and (4) its dependence on Canadian capital markets.

Higher Capital Costs

Others who have addressed the Subcommittee are better qualified than I to put a figure on the cost of the Canadian oil pipeline. It is my clear impression, however, that the detailed engineering of TAPS and plans for compliance with environmental standards have substantially increased earlier cost estimates for that line to the current $3.3 to $3.6 billion. It seems to me only reasonable to assume that the same result would occur with the more detailed planning for a Canadian line almost four times as long and of nearly proportionate complexity. I see no reason to doubt that a total cost of $7 to $8 billion is an appropriate estimate for the Canadian oil pipeline, compared with $3.3 to $3.6 billion for the TAPS pipeline. Tankers for TAPS are estimated to cost between $1 and $1.6 billion, depending upon ultimate capacity. This comparison gives rise to several observations. First, and most obviously, looked at from an overall United States prospective rather than a regional point of view, higher capital costs in these magnitudes mean significantly higher energy costs. The capital costs of the pipeline will, in either case, have to be amortized through the transportation charge over the expected life of the known reserves, currently slightly more than 20 years based on published Prudhoe Bay reserve figures and the expected production rate. Secondly, assuming that the companies holding the reserves will be required to provide the credit to finance the pipeline in either case, the Canadian alternative represents an additional burden upon them of up to $3 billion, or almost double the burden of TAPS. This differetnial could well strain the financial capacity of certain of the participants with the result that some form of external government credit support might be required to finance the project. Thirdly, the incremental increase bringing the total to $7 to $8 billion could be sufficient to put this project beyond the capacity of the private capital markets of the world, making it dependent upon participation by the U.S. and Canadian governments not merely as a credit backstop, but as major providers of funds.

Effect of Delay

As I indicated, the Canadian oil pipeline alternative means a delay of three or four years in construction and even longer in oil deliveries, and could well delay the Mackenzie gas pipeline by the same length of time. The effect of a delay in the construction of the oil pipeline has a number of implications aside from an increase in costs. I am sure that others will testify to the adverse effect on the United States balance of payments position in the latter half of the decade of the 1970's which will be caused by the additional foreign crude oil purchases due to even a two or three year delay in the commencement of Prudhoe Bay oil production. Similarly, I am sure others will comment on the adverse impact upon gas consumers in the Mid-West which a comparable delay in Mackenzie Delta or Prudhoe Bay gas production would have. This latter delay may be measured not in dollars and cents but in unheated homes and inadequate raw materials

for industry. There are, however, some specific implications of delay which concern us as investment bankers. The reserve owners have invested a great deal of money in the North Slope. In a capital intensive industry such as the oil industry, a company must earn a return on its major investments in a timely manner in order to remain competitive. The Alaskan oil and gas projects involve commitments which, at least for some of the participants, are very substantial in relation to their net worth. Any unnecessary further delay could jeopardize the ability of these companies to finance the project, and will certainly reduce the ability of all of the U.S. oil companies involved to participate aggressively in energy projects elsewhere in the world.

Project Financing and Canadian Capital Markets

The financing requirements of a Canadian oil pipeline of between $7 and $8 billion, together with the fact that the pipeline will have to be financed as a unified project rather than as a series of separate financings by the participant companies, would make it by far the largest financing ever attempted in any private capital market. Further, it would be more costly than any of the other major projects currently under consideration in Canada. As I have indicated, Canadian routing of the oil pipeline will require substantial financing from the Canadian capital markets. In this context, delay has the further disadvantage that other major projects in Canada, which may be more in the Canadian national interest and which probably cannot be financed contemporaneously with the Canadian oil pipeline, may advance to the point where they are ready for financing at the same time as the oil pipeline. The Canadian Arctic Gas line, the Panarctic gas line and the James Bay hydro-electric project are all Canadian projects with capital costs in the multi-billion dollar price range which are more directly beneficial to the Canadian economy than the oil pipeline. In my judgment, it is unlikely that all these major projects, plus a Canadian oil pipeline, can be financed within the time span presently in prospect. To put the demands which would result from financing even a portion of several projects of this size in the Canadian market in perspective, net new securities issues payable in Canadian dollars in the past five years averaged Can. $5.4 billion per year, of which an average of only Can. $1.1 billion was in the form of corporate bonds and Can. $500 million in equity securities, the balance being for the most part Federal, provincial and municipal securities. It can be seen that the Canadianization of this oil pipeline, even assuming that the funds are raised over a three to four year construction period, will potentially create a significant excess of demand for Canadian financing over the available supply of investment funds in Canada, particularly if some other major Canadian projects were to compete for funds at the same time. It seems doubtful to me that when the Canadian government considers the financing implications of undertaking these projects, they will be willing to proceed with the oil line on as fast a time schedule as the U.S. participants and the U.S. government would desire. In our opinion it would be imprudent, in the absence of demonstrated necessity, for the Congress of the United States to pass legislation which, under currently existing Canadian government policies, would force a project which primarily serves U.S. interests and has an aggregate capital cost of $7 to $8 billion to rely upon Canadian capital markets for a substantial portion of its financing.

CONCLUSION

An overall conclusion is to me inescapable. In my judgment the financial markets of the world do not have the capacity to handle all the large Canadian projects currently under consideration plus this Canadian oil pipeline. If this line is to be built in Canada, another project such as the Mackenzie gas pipeline, the Panarctic line or the James Bay Project will not be built. I can't speak for Canadians or their Government, but I do not believe they will be willing to give up one of these in order to facilitate construction of an oil pipeline through Canada that will deliver U.S.-owned oil to the United States.

Mr. MELCHER. I am very delighted personally to have your testimony, Mr. Tomlinson, because it affords the committee in our record,

an opportunity to hear firsthand from somebody in the business of financing huge projects such as the Trans-Alaska or the Canadian pipeline.

I have no questions, only one comment: That is whether or not there is a Canadian interest for a Trans-Canada pipeline at this time.

The committee will seek a very definitive answer from the Canadian Government on that point.

The gentleman from Florida, Chairman of the Full Committee.

Mr. HALEY. No questions, Mr. Chairman.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. Mr. Chairman, I thank the gentleman for his testimony.

What you are asking is that as stated in the committee before that the financing of the pipeline would be no problem on the Canadian side.

From your comments I take it the problems that will be there—little desire because of other financial obligations of other larger projects or projects that serve the rest of Canada.

That has been stated it wouldn't be necessary; they would only be required to raise 18 percent of the total cost but what do they base that figure on?

Mr. TOMLINSON. I am not familiar with that figure.

My impression is that in serving more than 18 percent of the expenditure if the line goes through Canada would be spent in Canada and for that reason Canadian Government policy suggests that they would want to equal to the extent possible the expenditures in Canada with the financing in Canada.

The equity portion alone might be the area of 25 to 30 percent of the total project, and by definition, if Canadians are to have control, they are going to want to provide at least 51 percent of that 25 percent.

Mr. YOUNG. The Trans-Alaskan pipeline, as you have stated—there is no definite way it will be financed other than through the members of the Trans-Alaskan pipeline?

Mr. TOMLINSON. Present thinking.

Mr. YOUNG. Has there been any consortium that you know of willing to put up $8 billion, to build a Canadian-Mackenzie route or are they talking about the Canadian Government putting up the money?

We have the money, but so far, to your knowledge, nobody has tried to put together the money to find a route?

Mr. TOMLINSON. That is my understanding; there is no such consortium at the moment.

Mr. YOUNG. $8 billion isn't a small amount of money to put together; is that correct?

Mr. TOMLINSON. That is correct, under any circumstances.

Mr. YOUNG. What effect would it have upon the construction of the gasoline that is definitely needed in the Midwest?

We are talking about two large financial projects here. Let's say the Canadian consortium was able to put together $8 billion; would this have an effect upon creating another—I don't know what the gasoline would cost. I have no figures on it.

Mr. TOMLINSON. As I indicated in my testimony, the process of financing and building a line through Canada would be considerably delayed. But still, as I understand it, it would have to precede the gas pipeline so that the gas pipeline would be put off for quite a number of years. It is also clear to me that on your assumption that somewhere the $8 billions can be found for the Canadian—for the oil line is a Canadian project, it just simply is that much money out of the world markets that might otherwise go to some other Canadian based project.

I can't say which one might be lost in the process, but I am clear that on the time schedule that all these Canadian projects are on, if the oil pipeline is interposed first in order, at least one of the others is not going to get done, and if the gas pipeline were sufficiently delayed it might be the one that didn't get done, for example, if the James Bay project went along on schedule and got to the market first, it simply might preempt the funds necessary to do the project.

I don't want to really predict which one would be lost, but that probably would be indicated by the timing.

Mr. YOUNG. What I am trying, in my unorganized way to get across, if the money was accumulated for the oil pipeline, it would be very nearly impossible to accumulate the money for the gasline and the natural gas, the 26 trillion cubic feet, water it is, is needed in the Midwest for power today, for natural gas power and we have the money for the Trans-Alaskan line for the oil which would leave moneys to build the gasline to the Midwest where we need it.

There has been some statements that we need gasline in the Midwest more than anything else.

If the figures that I have heard are correct, we need the natural gas and I don't see how they will get both of these by financing lines through Canada.

Mr. TOMLINSON. I think we are saying the same thing. The TAPS can be financed without being in direct competition and at lesser cost, so there simply is to my mind greater latitude to finance the gasoline from Prudhoe Bay and Mackenzie Delta down to the U.S. if TAPS line has been financed in the way I described as distinct from Canadian oil pipelines.

Mr. YOUNG. Again I want to thank you for your testimony. I think it sheds some light on the financial implications to these pipelines. I think you shed some light on the other side of the story.

Thank you.

Mr. MELCHER. The Gentleman from Guam.

Mr. WON PAT. Thank you.

I want to join the gentleman in commending you on your testimony, particularly in respect to the financial considerations of these projects.

Now, there have been a lot of inquiries in the Congress about the Canadian pipeline as well as, of course, of the Alaskan pipeline.

Do you think that there is a need also for the Canadian pipeline in addition to the Alaska pipeline?

Mr. TOMLINSON. I think, sir; that there will be in due course.

My information, and I am not expert on reserves, is that there are not at present sufficient reserves discovered and proved up to justify two pipelines.

In the long run, I think there is a general expectation that the possibilities in exploration in that area are sufficient so that down the road there will be a need for a second pipeline.

Mr. WON PAT. But you feel strongly that the Alaskan pipeline should be undertaken?

Mr. TOMLINSON. That will what?

Mr. WON PAT. You feel strongly that a Canadian pipeline should be undertaken first?

Mr. TOMLINSON. The Alaskan pipeline?

Mr. WON PAT. Yes.

Mr. TOMLINSON. I feel strongly that the Alaskan pipeline should be undertaken first; yes, sir.

Mr. MELCHER. Thank you, Mr. Tomlinson.

Our next witness is Mr. Richard A. Rosan, senior vice president and general counsel, Columbia Gas System Services Corporation from Wilmington, Delaware.

Mr. Rosan, the Committee will be delighted to hear from you.

STATEMENT OF RICHARD A. ROSAN, SENIOR VICE PRESIDENT AND GENERAL COUNSEL, COLUMBIA GAS SYSTEM SERVICE CORP., WILMINGTON, DEL., ACCOMPANIED BY MR. BOLTON, TECHNICAL ENGINEER

Mr. ROSAN. Thank you, Mr. Chairman and members of the committee.

I am accompanied by an associate, Mr. Bolton, who is technical engineer; if any questions should arise, I could refer to him for response.

I am appearing here on behalf of the Columbia Gas System. We are here to urge as strongly as possible this committee's support for and the Congress' enactment of H.R. 6756.

I have submitted a prepared statement to the committee, and I don't propose to read it. There are certain headings in that statement; namely, three, and I would like to briefly comment on those headings.

Mr. MELCHER. Without objection, Mr. Rosan's entire statement and the attachments will be made a part of the record at this point.

Hearing no objection, it is so ordered.

[Full text follows:]

STATEMENT OF RICHARD A ROSAN, SENIOR VICE PRESIDENT AND GENERAL COUNSEL ON BEHALF OF THE COLUMBIA GAS SYSTEM

Columbia Gas System is here to urge that this Committee support and report out H.R. 6756 introduced by Representative Young.

WHY IS COLUMBIA APPEARING ON THIS LEGISLATION?

Columbia Gas System is responsible for providing reliable gas service to about 4 million homeowners in the seven states of Kentucky, Maryland, Ohio, Pennsylvania, New York, Virginia and West Virginia, as well as the District of Columbia. In addition, Columbia serves in its retail markets directly 3,600 industries and has been advised by its non-affiliated customers that they serve over 7,000 industrial customers. These industries employ literally hundreds of thousands of people.

Gas service to these residential, commercial and industrial customers required last year approximately 1.5 trillion cubic feet of gas. Currently,

in the large retail service area of the Columbia Gas System, no new homes, commercial establishments, or industries are being attached for gas service.

The above-described responsibility is emphasized because it appears that people with no specific accountability to the public, and apparently with little understanding of the adverse consequences to the physical and economic well-being of millions of our citizens, continue to urge Congress to take actions that will result in further delay in the construction of the Alyeska Oil Pipeline.

HOW CRITICAL IS THE GAS SUPPLY SHORTAGE?

Frequently, we are asked if the energy crisis is "for real". The answer is unequivocally "Yes, It is not only real, but worsening".

Appendix A attached hereto is from a recent report of the Federal Power Commission Staff. The graph reflects the growing critical gas supply situation confronting the interstate pipelines which serve the major urban areas of the United States. Note that based on year end reserves of 1971, the pipelines were able to deliver approximately 13.7 trillion feet of gas in 1972. Each year thereafter there is a sharp decline in the amount of gas deliverable from present reserves.

Your attention is directed specifically to the tenth year where the gas available declines 49.5% from the 1972 supply.

In the case of the Columbia Gas System, we estimate that by 1982 Columbia must acquire 9.7 trillion cubic feet of new reserves to maintain the level of 1973–74 deliveries. These reserves will support the delivery of approximately 500 billion feet of gas in 1982. This is essential in order to maintain the present level of service. If Columbia were to attach only new residential and commercial customers, even greater reserves so as to add 800 billion cubic feet of gas supply in 1982 would be necessary.

Another measure of the current gas supply situation is that the non-affiliated pipeline suppliers of the System are presently curtailing below their contractual commitments by 30 billion cubic feet per year. Thirty billion cubic feet is the gas needed to serve about 150,000 homes for one year.*

THE TIMING OF THE ALYESKA OIL PIPELINE DIRECTLY IMPACTS UPON THE NATURAL GAS CRISIS.

The proven gas reserves in Prudhoe Bay, Alaska are estimated to be 26 trillion cubic feet. These gas reserves are associated with the oil reserves and accordingly cannot be produced until the oil reserves can be produced. Thus, there is a direct relationship between the construction and operation of the oil pipeline and the availability of these gas reserves in supplying the nation's gas supply needs.

Columbia estimates that if the gas pipeline from Canada was operated in the early 1980's it would provide about 200 billion cubic feet per year for the Columbia market—this would be a significant and very likely indispensible part of the 500 billion cubic feet of gas from new sources needed in 1982 to maintain the present 1973–74 level of service.

Appendix B to this Statement briefly compares the overall thrust and the delay factor in each of the above 16 bills before this Subcommittee. It shows that the 16 bills fall substantially into three categories:

Category 1.—H.R. 6756, the Young Bill (No. 1 on Appendix), would approve the Alyeska pipeline project, as a result of which natural gas deliveries could start by 1980 or possibly earlier.

Category 2.—Bills numbered 2–7 would grant the Secretary of Interior authority to grant needed pipeline right of ways, but would leave the NEPA issues pending in the courts. Under these bills gas deliveries to the lower 48 states would be further delayed at least 1 and very possibly 3 years beyond the completion time under H.R. 6756.

Category 3.—Bills numbered 8–16 would preclude any authorization of the Alyeska pipeline until Congress has, in effect, stepped in and resolved this question *ab initio*, generally turning on whether a Canadian oil route

* The average residential customer of the System uses 200 Mcf per year. This would include gas for space heating.

should be substituted for the proposed Alaskan route. That would delay delivery of natural gas to the lower 48 states some 6 to 8 years beyond its delivery under H.R. 6756.

REASONS WHY CONGRESS SHOULD ENACT H.R. 6756

Congress should enact H.R. 6756 because it is directly responsive to the Nation's worsening energy crisis, and because the other Bills under consideration, those in categories 2 and 3, would substantially delay the availability of oil and natural gas for reasons which are insignificant compared to the adverse effects of the delay they entail.

Responsible and knowledgable opinion, including that expressed in the President's Energy Message and in statements of Senators active in S. Res. 45, is virtually unanimous that the nation's first priority is to adopt policies and measures to promote the development of domestic energy resources. Within that category, there can be few, if any, projects so uniquely qualified to come at the head of the list as the Alyeska oil line and related gas line. As shown above, they are of utmost importance to the ability of the Columbia Gas System, for instance, to serve its millions of natural gas consumers. The Court of Appeals' referral of this question to the Congress not only puts the immediate responsibility on the Congress to act on the right-of-way question, but also gives it the opportunity to exert badly needed leadership in passing legislation to lift the entire Alyeska project out of the procedural morass into which it has sunk and will sink further absent decisive Congressional action.

The Bills in Categories 2 and 3 are not responsive to this high energy priority of promptly promoting development of domestic energy reserves. Moreover, the delay they entail not only would deprive natural gas consumers of desperately needed gas supply, but would substantially and unnecessarily increase the costs of natural gas service from Prudhoe Bay.

It is estimated that each day of delay in starting construction on the Alaska-Canadian gas pipeline adds $1 million to its presently estimated cost of $5.4 billion. Each year's delay in starting this project will add $55 million per year to the cost of gas service.

Congress is justified in finding that the requirements of the National Environmental Policy Act have been satisfied with respect to the Alaskan oil pipeline. The applicants for the permit have developed during the past two to three years much scientific and engineering data so as to assure an environmentally acceptable project. The Secretary of Interior had prepared a monumental Environmental Impact Statement that considered exhaustively in nine volumes all aspects of the project. The District Court found that the Secretary of Interior's Environmental Impact Statement satisfied and met the requirements of said Act.

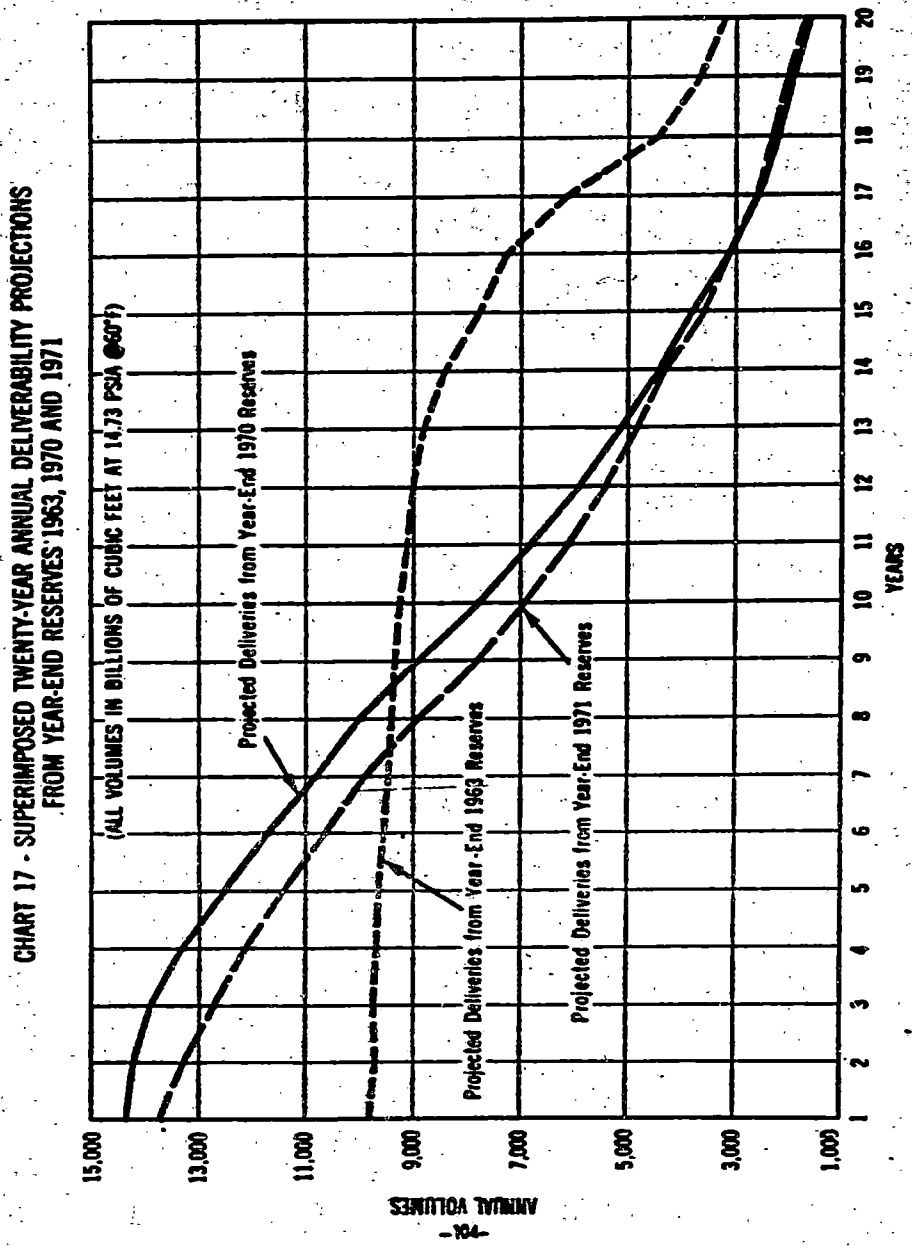
As a practical matter, approval of the construction of the line will cause minimal damage to the environment in Alaska. This is evidenced by the support of the project by Alaska's Congressman and both of its U.S. Senators (who have sponsored the identical S. 970); by the support of the project by the Governor of Alaska; as a result of the exhaustive engineering studies and research of the applicants for the line and by the Secretary of Interior's exhaustive Environmental Impact Statement.

The Canadian oil route alternative which underlies Bills numbered 8-16 has been thoroughly considered by the Interior Department and found wanting for many reasons—as set forth in Secretary Morton's April 4 letter to all Congressmen. In addition to the reasons set forth by the Secretary, the very adverse impacts on natural gas consumers by the long delay inherent in such Bills (6-8 additional years) is a fundamental defect.

We respectfully submit that for these reasons there is sound and good basis for the enactment of H.R. 6756.

APPENDIX A

[Data from Federal Power Commission Study, Published December 1972]



"THE GAS SUPPLIES OF INTERSTATE NATURAL GAS PIPELINE COMPANIES, 1971"

The overall progressive decline in deliverability is also demonstrated in Table 23 and Chart 17 which show the drop in deliverability by years and percentages beginning two years after the reporting year.

The composite deliverability projections for the pipeline show that approximately 39 percent of the presently owned and contracted reserves are scheduled for delivery from year-end 1971 through year-end 1976. These deliverability projections in total and by gas areas for the five year period are shown in Table 24.

TABLE 23.—DELIVERABILITY COMPARISONS 1963–71, ALL COMPANIES REPORTING ON FORM 15

Date of estimate...	1963	1964	1965	1966	1967	1968	1969	1970	1971
Largest volume schedule[1] (billion cubic feet)	9,794	10,097	10,770	11,763	12,512	13,345	13,929	14,281	13,743
	Percent decline from largest volume								
Year:									
2	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	3.5
3	.5	.2	.1	.7	.3	1.0	.8	3.2	7.3
4	1.0	.7	.8	1.5	1.0	2.2	2.0	7.7	[2] 12.4
5	1.6	1.8	2.0	2.3	2.3	3.4	4.2	[2] 12.7	17.4
6	2.5	2.8	2.6	3.2	3.5	5.8	7.6	18.2	22.6
7	3.4	3.7	3.4	4.8	4.7	8.7	[2] 12.7	24.2	28.2
8	4.0	3.1	4.5	5.6	7.2	[2] 11.7	18.0	29.2	35.6
9	4.7	5.5	5.5	8.0	[2] 10.3	15.9	24.4	37.4	43.2
10	5.6	6.4	7.4	[2] 10.0	14.2	21.7	33.3	45.0	49.5
11	7.0	7.6	8.5	12.6	18.4	29.4	41.2	51.7	60.5
12	8.0	8.7	[2] 11.0	17.4	24.2	37.3	48.6	57.6	65.0
13	9.8	[2] 12.5	14.4	24.6	35.5	45.7	55.5	63.3	68.8
14	[2] 13.5	16.8	20.0	37.8	44.4	53.5	61.4	68.2	73.8

[1] Occurs in second year with the exception of 1963, 1970, and 1971 which are first year volumes.
[2] Year 10 percent occurs.

[Appendix B]

COMPARISON OF BILLS BEFORE HOUSE INTERIOR COMMITTEE FOR MAKING GAS FROM PRUDHOE BAY AVAILABLE IN LOWER 48 STATES

Bill No. and sponsor	Basic objectives	Delay in gas deliveries beyond enactment of H.R. 6756
1. H.R. 6756—Young, Alaska.....	Identical to Stevens-Gravel S. 970. Grants right-of-way (R/W) permit application(s) submitted to Secretary of Interior (Secretary) by Alyeska and directs Secretary to issue R/W permit necessary for construction of trans-Alaska pipeline; finds and declares that Secretary's impact statement meets requirements of NEPA; precludes appeal from Secretary's initial issuance of permit to construct; authorizes Secretary to issue enabling regulations.	If enacted during spring of 1973, oil line from Prudhoe Bay to Valdez Alaska, could be constructed and operable in about 3½ yr, or by early 1977. Canadian gas line construction starts early 1976 and is completed 4 yr later, or by early 1980.
2. H.R. 4910—Camp, Oklahoma..	Adds to sec. 28 of MLA a proviso authorizing Secretary to grant such additional rights as Secretary determines, in his discretion, to be useful in connection with pipeline construction, operation, maintenance, or related activities, subject to conditions Secretary prescribes.	Above construction periods deferred about 1 yr for resolution of NEPA issues if courts uphold Secretary on NEPA issues, and from 2 to 3 yr if court does not. Gas deliveries therefore delayed by this bill an additional 1 to 3 yr over minimum delay under H.R. 6756.
3. H.R. 6075—Steiger, Wisconsin.	Amend sec. 28 of MLA to substitute "reasonably necessary" width for 25 ft R/W on each side of pipeline for the operation and maintenance of the pipeline, together with such adjacent lands as are reasonably necessary for operation and maintenance or public safety—subject to such terms as the Secretary shall prescribe.	Substantially same as No. 2 above.
4. H.R. 4651—Meeds, Washington.	Amends sec. 28 of MLA of 1920 to give Secretary authority to grant R/W necessary for transportation of oil or natural gas under conditions set by Secretary of Interior. Pipelines, except regulated natural gas pipelines, would be operated as common carrier. No corridor provision.	Same as No. 2 above—except that opposition to common carrier provision could add further delay.
5. H.R. 5442—(sec. 122 only) Saylor, Pennsylvania, plus 4.	Administration's Mineral Leasing Act of 1973, sec. 122 of which pp. 29–31 deal with pipeline R/W. Definitions and provisions R/W substantially same as in H.R. 5541 and S. 1081, including common carrier provision from which regulated natural gas companies are exempt, but without a corridor provision. A provision substantially similar to that in H.R. 5524 and S. 1081 requiring Secretary to require applicants to submit plans of construction, operation and rehabilitation in compliance with regulations issued by the Secretary designed to insure that the use of the R/W will have the minimum adverse impact on the environment.	About same as H.R. 4651 (No. 4 above), except that if "minimum adverse impact" language is not modified to reflect practicalities, it could invite litigation and more delay, hard to specify, but potentially substantial.
6. H.R. 5441—(title IV only) Saylor, Pennsylvania, plus 5.	Administration's public land use bill (the National Resource Lands and Management Act of 1973) of which title IV, covering pp. 22–31, is responsive to R/W issue. The definition and authorization provisions are substantially the same as in S. 1081 and in H.R. 5524. No "corridor" provision.	About same as H.R. 4651 (No. 4 above).
7. H.R. 5524—Meeds, Washington.	Identical to Senator Jackson's S. 1081 as originally introduced on Mar. 1. Sec. 2—The definitions except from "Federal Lands" those on National Wilderness Preservation System and in National Park System, for each of which there is not now adequate existing authority to grant R/W. Sec. 3—Basic provision authorizes Secretary to grant R/W on Federal lands, in effect, as needed. Subsection (c) contains common carrier provision from which regulated natural gas companies are exempt. Sec. 4—Provides for a corridor on mandatory basis. Sec. 5—Contains various general provisions including: 5(e) which puts limits on the removal of mineral and "vegetative materials" which term is too broad and vague. The liability provision in sec. 5(g) is the same as originally in S. 1081. It makes holder of a R/W liable to the United States and to the third parties for damages or injuries incurred in connection with activities conducted on the R/W—without regard to fault or negligence.	Corridor provision, absolute liability provision, and limitation on removal of "vegetative materials" likely to add additional delay to that under H.R. 4651 (No. 4 above).

8. H.R. 1893—Saylor, Pennsylvania.	Prohibits Secretary from issuing any permit involving construction of any oil pipeline system for transportation of oil from North Alaska unless first authorized by Congress.	If Congress so acts and forces Canadian oil route, it will inject a quantum jump in delay. If Congress so acted today, an oil line through Canada probably could not be operative before 1983, a gas line could not be operative before 1986, and the additional time it takes Congress so to act would correspondingly further delay the operation of the gas and oil lines. Thus, this bill could introduce from 6 to 8 yr delay over Young bill—assuming no delay in Canadian authorization or operations.
9. H.R. 6871—Ruppe, Michigan, and others.	Provides R/W for shortest route from Prudhoe Bay to Canada, 6 mo. study by Presidential task force of availability of a route for a trans-Canada oil pipeline, and for State Department negotiation with Canada re such pipeline.	Same order of delay as in H.R. 1893 (No. 8 above).
10. H.R. 4707—Aspin, Wisconsin..	Sec. 1—Authorizes Secretary to issue R/W and special land use permits (SLUP) as necessary for construction, operation and maintenance of pipelines for development of oil and natural gas resources in vicinity of Prudhoe Bay along shortest feasible direct route from Prudhoe Bay to the border between Alaska and Canada. Sec. 2—Directs Secretary within 60 days of passage, and in accordance with NEPA, to initiate intensive investigation of feasibility of trans-Canadian pipeline route as "the" means of transporting oil and natural gas of Prudhoe Bay region to United States. Sec. 3—Such R/W's and SLUP's may be issued by Secretary only after he has complied with NEPA.	Do.
11. H.R. 6694—Aspin, Wisconsin, plus 22 cosponsors.	Identical to Aspin's H.R. 4707 above	Same as No. 10 above.
12. H.R. 6763—Aspin, Wisconsin, plus 7 additional cosponsors	.....do	Do.
13. H.R. 6857—Aspin, Wisconsin, plus 2 additional cosponsors.	.....do	Do.
14. H.R. 7302—Aspin, Wisconsin, and Coughlin.	.....do	Do.
15. H.R. 7321—Obey, Wisconsin	.....do	Do.
16. H.R. 5750—Udall, Arizona	Sec. 1—Prohibits decision affecting siting of transmission facilities on public lands in Alaska until Congress has had opportunity to review plans for recovering and delivering petroleum reserves from North Slope. Sec. 2—Directs Director of Office of Technological Assessment to conduct thorough study of all practical methods of recovering and delivering to continental United States the North Slope petroleum reserves (giving equal consideration to the environmental impact, economic costs and national security aspects of all alternative recovery and delivery methods, including, but not limited to, rail, pipeline, ocean tanker or any combination thereof); and to report findings and conclusions to Congress within 1 yr. of enactment of this bill. Sec. 5—Prohibits Federal office or agency from granting R/W or use of any Federal land for a petroleum pipeline from North Slope of Alaska before 60 days following filing of OTA report with Congress, and then only if Congress has not adopted a concurrent resolution authorizing a specific alternative method. Any such specifically authorized method shall be approved pursuant to a special Congressional rulemaking procedure provided in sec. 6 for the disposition of this particular issue.	Broadening of all conceivable alternates at this late date conducive to added delay beyond the 6–8 yr. likely under H.R. 4707 (No. 10 above).

[1] Working premises are: (i) If Congress acts only on right-of-way issue, it will take from 1 to 3 yr for courts to resolve environmental issues, (ii) construction of oil line through Alaska would take 3½ yr, (iii) completion of oil line through Canada would take 6 yr longer, and (iv) construction of gas line through Canada, starting about 1 yr before completion of oil line, would take 4 yr.

57-439 O - 73 - pt. 2 - 12

Mr. MELCHER. You may proceed.

Mr. ROSAN. Thank you.

Columbia Gas System is an integrated gas utility that operates in seven major Eastern States of the United States and includes service to the District of Columbia.

If you could get to the top of the building and look out as far as you can see beyond Baltimore and beyond Richmond and thought of all of the 1.3 million homes, dwelling units in that area, we provide most of them with the gas that keeps them warm in the winter and frequently keeps them cool in the summer, and certainly gives many of them hot water and cooking.

This is a very grave responsibility with 4 million homes spread over these seven States in this District of Columbia depending upon our gasoline.

In addition, in our own retail markets we have 3,600 plus major industrial customers.

We are advised by our nonaffiliated customers that they have about 7,000 industrial customers that they serve with gas.

I mention this industrial business because I would not like this committee to get the impression that this industry can only use gas, although there are certain processes that our industry in this country uses, highly sophisticated technology that requires gas, and without it they would close up.

I might say that General Motors has appeared before the Federal Power Commission with a rather elaborate study pointing out that in certain of their plants in Indiana where they make gears, I believe, that if those plants can't get a certain percentage of gas that the whole automobile industry in this country will come to a complete standstill.

This is why we are here today, because of the importance of natural gas to the economy and well-being of this country.

Is there a gas supply crisis? This is a question that is frequently asked, and all I can say to you gentlemen is that for the last 2 years I have been appearing before Congress on behalf of Columbia trying to inform Congress how serious this problem is.

Unfortunately despite the efforts of the gas industry to communicate this, Congress has seen fit not to act on almost any legislation we have asked for up to date.

I only hope that this legislation doesn't meet a similar fate.

I would urge you to look at appendix A, because I think it demonstrates as graphically and as simply what our problem is.

The pipelines that are regulated by the Federal Power Commission report to them annually what they can deliver. The Commission has been seeking more and more information to project what is ahead. These pipelines, and there are about 62 of them—serve all of the major urban centers of the United States.

This chart shows, and I refer to the line projected deliveries from yearend 1971 reserves. that the reserves that were in existence and proven as of the end of 1971 in the United States produced and made sustained delivery to these urban centers of about 13.7 trillion feet of gas.

If you will look you will notice that in the 10th year from then they can only deliver approximately half of that amount or 7 trillion feet.

I can't overemphasize nor can I exaggerate what the impact of that result would be upon the American economy. Gas today supplies about 32 percent of our Nation's energy.

If you eliminated the use of other fuels for transportation this gas supply that you are looking at on this chart in 1971 or 1972, is supplying well over 40 percent of all of the energy needs of our people.

And imagine cutting it in half. That is what we are looking at, gentlemen.

I say that the crisis is here.

The data of the Federal Power Commission is fully confirmed by our own experience of Columbia. As my testimony points out, we are confronted with finding enough new gas reserves between now and 1982 to sustain an additional 500 billion feet of gas a year to the Columbia gas system.

Now, those reserves can come from many sources. We hope a lot of them will come from our domestic supplies in the United States. We have sought to build synthetic gas reforming plants. We have just finally gotten approval to import LMG from Algiers. But one of the biggest cornerstones in our planning for the future is gas from Prudhoe Bay. We are one of two systems in this country that have a commitment for some of that gas as of today. We estimate that as soon as the gas Arctic Line is in being, we should get up to 200 billion feet of gas a day from Prudhoe Bay. This would represent 40 percent of the gas that we need between now and 1982, and this is most important.

It is not just important to Columbia as a corporate enterprise; it is important to literally millions of our citizens.

Now, I don't want this committee to get the impression that if we don't get this 500 billion feet of gas, that people are going to go cold in their homes. Those will be the last people that are going to be cut off, but I can tell you this that if we are short 500 billion feet literally hundreds of thousands of people will be out of work, and that may be almost as bad as if they are cold in their homes.

Now, we are supporting this particular legislation because it is the only bill that is before this committee that has a guarantee that we are going to have a chance to get this Prudhoe Bay gas within a reasonable time in the future, namely, 1980 to 1982.

I have attached to my testimony a summary of the bills that are before this committee, and I have broken them down into categories.

The second category of bills, other than H.R. 6756, would authorize the Secretary to issue a permit with a greater right-of-way, but it doesn't deal with the environmental delay that we are still confronted with.

The third category of bills which are apparently in trying to insist on moving this oil line through Canada would delay this whole project an unconscionable length of time.

Now, in my testimony and prepared statement we have given our reasons why we think H.R. 6756 should be enacted.

The first is that it is going to get us, we hope, oil and gas in a reasonable period of time; secondly, it will be an expression by Congress that all of the requirements of NEPA have been complied with.

I say as one who has studied the national Environmental Policy Act rather thoroughly and has quite a lot of experience with it, that I believe that the Secretary of the Interior has fully complied with not only the letter, but of the spirit of that law and that therefore Congress, in passing H.R. 6756 is not overriding NEPA, but is merely endorsing and confirming that the Secretary has complied with it and that therefore, we are justified in moving forward with this very essential Trans-Alaska oil line, and you understand I have no interest in that line per se, except that it is a prerequisite to getting gas for the lower 48 States.

I believe that covers what I wanted to say, sir.

Mr. MELCHER. Thank you, Mr. Rosan.

I have read your testimony. On page 7, you indicate "court of appeals" referal of this question to the Congress not only puts the immediate responsibility on the Congress to act on the right-of-way question, but also gives it the opportunity to exert badly needed leadership in passing legislation to lift the entire pipeline project out of the procedural morass into which it has shrunk, and will shrink further absent decisive congressional action.

Now, as I interpret that sentence, you have the feeling that because of the court's action concerning the right of way, that this throws the ball to the Congress and they should respond by passing not only the right of way legislation but making the finding that the environmental question has been examined and that the trans-Alaskan route is an environmentally sound route to follow; is that correct?

Mr. ROSAN. That is correct, sir.

Mr. MELCHER. Are you under some impression that this is what the administration is asking, too?

Mr. ROSAN. I am very disappointed in the reports that I have read about their testimony. I would think that they should feel the same way.

I don't know whether this is a matter of trying to be diplomatic with certain Members of Congress or not. I feel very strongly that the National Environmental Policy Act requires that a Federal agency give consideration to environmental considerations before it takes Federal action.

The Secretary of Interior was enjoined by Judge Hart, and as a result of that embarked on this study, this monumental nine-volume study.

They have examined all of these matters most carefully, and they have learned through a lot of research, ways and means of building this Alyeska line to do minimal damage to the environment.

The trial judge found that the Secretary had complied with proper procedural requirements of NEPA and it is because of that you have got a court finding that they have been complied with.

Now, the court of appeals refused to even consider that question and they just passed it. I think that in the interest of our national economy Congress has got to say we have to have a halt to this. We have had this environmental analysis. We have given it a lot of thought and care. We are protecting the environment to the maximum extent possible and for that reason let's get on with our business.

Mr. MELCHER. To answer my question, are you aware of what the administration's attitude is on the very point you are making?

Mr. ROSAN. I understand they have ducked it. They wouldn't come out like I am and say you should pass on the environmental issue.

Mr. MELCHER. That isn't quite accurate. Secretary Whitaker, speaking for the administration, said that they are opposed to that sort of a finding by Congress.

In light of that, I think your testimony is worthwhile. It is very much worthwhile, because you are presenting a position of need for natural gas and you stress not only in your oral statement but also in your prepared statement, Congress making a finding that the environmental question is adequately studied and the environment would not be too badly damaged and therefore, we should go ahead with the trans-Alaska pipeline. My point is that without an acceptance of that line by the administration, we are going to have a tough time getting that feature into a bill. Not only that, the President has been very active in vetoing any bill that is passed by this Congress that doesn't comply with his requirements.

So I think perhaps your line of reasoning should be made known and your industry's line of reasoning, if it is representative of your industry, your viewpoint should be made known to the administration.

Mr. ROSAN. Mr. Chairman, I would only like to make one comment:

I can disagree with the administration on lots of things, but I have read Secretary Morton's letter to the Congress. His recent letter, and it seems to me, reading that letter, you just can't help but get the impression—letter of April 4. 1973—that the Secretary of Interior certainly believes that this line, the trans-Alaska line and not a Canadian line ought to be built.

As I understand it, the only big issue on the environmental question is: Did they discuss or consider carefully enough the alternative route through Canada?

I think Secretary Morton's letter makes it clear beyond doubt that that is not in our national interest to do it that way.

So therefore, I don't understand why Deputy Secretary Whitaker so carefully limited his recommendation before your commmittee.

But I do believe that the administration is committed, at least as I read Secretary Morton's letter to you, that they are certainly committed to building this trans-Alaska pipeline.

The question is when do you build it, now or 3 years from now or 6 years from now.

Mr. MELCHER. Their timetable is something like 2 or 3 years from now, and the testimony of Secretary Whitaker was presented after April 1, or April 4, after Secretary Morton wrote his letter to all Members of the Congress.

The gentleman from Arizona.

Mr. UDALL. I have no questions at this time, Mr. Chairman.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. I thank you for your testimony.

In your testimony—I have read your written testimony—I think there are some points brought out.

I would like to have you restate those points. Let's say Columbia was short 500 cubic billion feet by 1982, which is one of your projections.

If we don't develop known domestic sources what do you think would happen?

I think this is important for people on the commimttee and the public to know—what do you foresee happening on the natural scene and the domestic scene?

Mr. ROSAN. Well, if we made the horrible assumption that we actually didn't get any significant part of this 500 billion short fall that we have, we would then find ourselves with our—and I might say Columbia is not taking on any new business.

We have a complete freeze on business for over a year now, including residential markets, and we have told our wholesale markets we can give them no more gas than we have been giving them in 1971.

So we are not——

Mr. YOUNG. Basically what you are saying is our economy in the gas field is at a stalemate?

Mr. ROSAN. As far as Columbia is concerned, we are at a complete standstill.

In 1972 we have made a rough estimate, as we don't have the precise figures with our nonaffiliated business, but in the case of our own retail business we have sold about 360 billion feet of gas to industry.

I want you to also understand we do not sell gas for oil field for electric generation. We have a long-term policy against that. We have never sold gas for that purpose.

If you factor that with our—in relationship to our total retail market and apply that factor to our nonaffiliated wholesale market, we end up with about 600 billion feet of gas used for industry.

If we are short 500 billion it would mean industry getting only about 15 percent of what it is getting now.

In our own retail markets the best estimate we can give you, because we couldn't get it down to the last—we think this might throw 200,000 to 300,000 people out of work.

What it will do in our wholesale markets I can't say.

Mr. YOUNG. For the argument that, well, you shouldn't be using gas for industry, what alternative fuel do you have for the industry you are talking about?

Mr. ROSAN. You understand I think industry has to use gas because there are so many absolutely essential processes that industry uses.

But taking the uses of gas for which there is a substitute, and I would say that would run maybe a half to two-thirds, that there is a substitute.

There probably is what are they going to substitute for?

The most logical thing for them to use would be oil.

As you know, we are short of oil. If they were to get oil to replace the gas that they are using, we would just have a much more serious import problem and more serious balance of payment problems and so forth.

If we can get alternative fuel, and that is not an assurance, it would probably be oil.

The chance of using coal for a lot of these things is rather remote.

Mr. YOUNG. Without the fuel that you are talking about, we have two alternatives: 200,000 or 300,000 people out of work, lack of production, and if we find an alternative fuel it is not as clean as gas?

Mr. ROSAN. I don't believe it is as clean, sir.

Mr. YOUNG. That brings up another thing some people are going to say: Why don't you find all of the resources of natural gas. What do you consider for instance, is there a chance of enough gas being found of the coast of Louisiana?

Let's stay with the domestic field, because I have been reading the papers and I don't like what I see.

Mr. ROSAN. There is no question that there are great potential reserves in the U.S. offshore, particularly, but Columbia gas system represents, I would say somewheres between 8 and 10 percent of the total market in this country.

As I mentioned to you, we are short on the basis of our present market, no growth, about 500 billion feet in the next 10 years.

So to get that 500 billion, we will have to find about 10 trillion feet of new reserves in the United States.

If we are about 10 percent of the industry that means that the industry will have to find somewheres in the neighborhood of 100 trillion feet of new reserves.

To find that in the United States in the next 10 years, in the opinion of my management at least, and we have given a great deal of thought and study to this, is not possible.

Therefore, we are going to have to find gas from other sources, and, as a matter of fact, Columbia, I would say, is probably a leader in this. We are trying to get L & G synthetic gas, Naphtha or imported feed stuffs from Canada.

We are certainly working as hard as we can.

Mr. Bolton is the expert on gassification. But we feel one of the biggest helps we would have is to get this gas from Prudhoe Bay.

I will tell you how we got our interest in Prudhoe Bay, to give you an idea how serious we take this.

We made a commitment with banks, $200 million to one of the oil companies who have an interest in Prudhoe Bay in order to get a first call on that gas.

Two hundred million dollars is a lot of money for my company to advance, but that is what we did, and that is how we have got an interest in this gas reserve.

Mr. YOUNG. There has been some statements about gas pipelines through Alaska. Are you aware of any applications, studies or what has the gas industry done along the Trans-Alaska's line?

Mr. ROSAN. There are absolutely no projects for moving gas by pipeline down. There are studies underway by Paso Gas, as I understand it, and this is only what I have read in the paper. They are talking about making a study for building a line down to Valez or in that vicinity; then liquify it and move it by ship and I would presume to the west coast.

Mr. YOUNG. They are pretty serious about it. They lost two men on the North Slope in an airplane accident.

Along that line, there has been some reference made to gas being shipped to Japan.

Are you aware of the background of the shipping of that gas?

Could you give us the rundown?

Mr. ROSAN. I am not aware of all the details. I might say it is a relatively small amount of gas. It is about 5 percent of what we are talking about of Prudhoe Bay.

It was a transaction that was conceived of and negotiated well before anybody in this country was conscious of this growing crisis that we have.

Mr. YOUNG. Wasn't it also an attempt to save the policy at that time, the statements of further gas and of course we wanted to save as much gas as we could and was implemented through the classification plans and now the State law—you can't flare gas and—that would make it 1958, 1959, I believe it was.

Maybe each of you could offer some information on that.

Mr. ROSAN. Mr. Bolten confirms that.

Mr. YOUNG. Mr. Chairman, I have no further questions at this time.

Mr. MELCHER. The gentleman from Guam.

Mr. WON PAT. I think the question I wanted to ask has been asked by the gentleman from Alaska.

Mr. MELCHER. The gentleman from Oregon.

Mr. DELLENBACK. No questions, Mr. Chairman.

Mr. MELCHER. Mr. Rosan mentioned coal gassification. About 10 days ago I read that in Montana or Wyoming, $3 a ton coal using the luggie method of coal gassification would produce natural gas at about 80 some cents. I assume that is per thousand cubic feet.

Does that fit with your arithmetic?

Mr. BOLTON. No, it does not fit with my mental arithmetic, Mr. Chairman.

For $3 lignite I would estimate about a dollar and a quarter per M ft³.

Per million cubic feet, yes.

Mr. MELCHER. It makes it quite expensive?

Mr. BOLTON. Yes, and there is some question about whether you can even get much $31 lignite.

Mr. MELCHER. I am talking about $3. subcutaneous.

Mr. BOLTON. Or subcutaneous.

The cost of gas from coal is approximately $1 plus the cost of the coal divided by an efficiency of 60 percent.

So that if the $3 subcutaneous coal were, say, 20 percent per million BTC, this would make the gas cost about a $1.30.

Mr. MELCHER. How does that compare with what you are presently paying for it?

Mr. BOLTON. I happen to recall the figure from September of last year that the FPC issued. it was 49 cents per M ft³, the average of City Gate Gas, Gas; into the gas distribution system.

So it is 49 centes which was last September's actual figure against something in the range of a $1.25 or up, three times as much.

Mr. MELCHER. The $1.25 figure you are referring to for the million cubic feet is where?

Mr. BOLTON. At the gassification plant, wherever the coal would happen to be located.

Mr. MELCHER. So that would be added on to get the gas?

Mr. BOLTON. Absolutely.

Mr. MELCHER. The 49 cent figure you are talking about is for gas in a location where you can start distributing it and start selling it?

Mr. BOLTON. That is correct.

Mr. MELCHER. The gentleman from Arizona.

Mr. UDALL. I looked at your material and appendix B, and the last page, analysis of my bill, H.R. 7550, and I don't understand the last paragraph.

How long in your judgment would it take for the stacks of North Slope ore?

Mr. ROSAN. I believe, sir, that if Congress decides to pass legislation such as that and gets into this question of trying to move the oil through Canada, that we can expect that we wouldn't even resolve whether that is the right way to go for 2 or 3 years.

Mr. UDALL. Have you read my bill?

Mr. ROSAN. I have only read outlines.

Mr. UDALL. I am the only one, as I understand it, who has grabbed this great dilemma you have outlined and said, Let's have a decision.

I am the only one to provide a machinery and framework by which there will be a decision. There is bound to be a decision at the end of 14 months without any court decision or administrative decision.

Mr. ROSAN. But, sir, I don't believe it can be done within that amount of time.

This kind of a study that you are talking about, the study through Alaska alone that has taken over two bills.

Mr. UDALL. The bill says there will be a study within a year and if it isn't completed, we will vote anyway.

Mr. ROSAN. Then you get into this political hassle of people voting on things they haven't made a scientific final analysis of, and there will be more reason for delay.

Mr. UDALL. A great many people believe that there are those and I guess they have some grounds for their suspicion after all three years, that simply want delay, and these other bills are designed to stall and delay and have more lawsuits and have more environmental impact statements and all the rest. I have said to people like yourselves who want a decision, why are you afraid of having an impartial group, an unbiased group for a change, taking one last look at the alternatives and then force the Congress, instead of ducking this thing, forcing Congress to give you a decision one way or the other?

Mr. ROSAN. I think there is a fundamental defect in the theory. I don't understand why Congress wants to pass that kind of a bill. Even a 14-month delay; do you realize what a 14-month delay does in the gas industry?

Mr. UDALL. Sure, I realize it and that is why I think the gentleman from Alaska confronts this thing head on and I think you say let's have Congress make a decision.

I am trying to do it in a way to satisfy Americans that some people are looking at it instead of people who are already committed to an Alaskan pipeline.

Mr. ROSAN. I don't see how you can say impartial look.

We have this very exhaustive study.

Mr. UDALL. Of course it is. In this country it is just as important that things be right. It is not enough for things to look right.

You can cut or slice it any way you want to, but there are witnesses here and sincere people who think the Department of Interior has made that study you are talking about.

We argue and I——

Mr. ROSAN. All I can say about these people who want these studies is I do think there are certain ones of them who are committed to delay.

Mr. UDALL. Of course they are, and that is why I resented your analysis of my bill which is the only bill that will give you a decision.

Mr. ROSAN. I think it is inevitable you will find there will be reasons for Congress finding they will have to delay 14 months.

You can't force, by passing the bill, Congress to vote.

Mr. UDALL. I didn't think you had read my bill, and you have to fall back on the fact that even if it is passed, we will pass another one extending the delay.

I think I have it constructed so you get the decision you want much quicker than any other bill, including Mr. Young's bill.

That is all.

Mr. ROSAN. Mr. Young's bill would get us going right away.

Mr. MELCHER. Thank you very much, Mr. Rosan and Mr. Bolton.

The next witness is Mr. Kenneth Quade from Pembine, Wis.

Mr. Quade.

STATEMENT OF KENNETH QUADE, PEMBINE, WIS.

Mr. QUADE. Mr. Chairman, my only qualification is that I am a concerned citizen.

I have traveled Alaska and observed it quite extensively.

At the end if you will care to ask about that, I will assent to it, but right now, I would like to get down as to why I am here and why I have written nearly 2500 letters and articles of why I oppose the pipelines, some of which have been inserted in the Congressional Record and been inserted in newspapers here and in Canada.

I believe the construction of the Trans-Alaska pipeline will eventually result in a crisis for the Nation. The seriousness of the crisis could rival and even exceed the turmoil Vietnam created for the country, and we have a Madison Avenue spectacular taking place now a few blocks away that may even rival that for scandal.

When this crisis will take place is hard to say, but if we have a group of idealists attending colleges around 1985 like we did in 1968, this may prove to be the catalyst.

Once the mass realizes it is no longer poverty against profit or profit against profit, but rather self-preservation against power, that may be the beginning of the end for the tyranny of the oil industry.

I estimate the size of at least 20,000 square miles and the possibility 50,000 square miles will be devastated by oil spills and permafrost erosion.

This statement will be challenged by the oil industry, Government, and certain members of the general public only because they already feel that this area is unproductive.

But after oil exploitation, this area could be damaged beyond repair for centuries. Its value as a nesting area, wildlife refuge, and the values of virgin wilderness with its intangible effects on the human psychic may never be recovered.

The native population of Alaska will be greatly affected by oil exploitation. There are Wounded Knee episodes or at the very least a Menominee Indian problem like is happening in Wisconsin at the present over reservation status in Alaska's future if oil has its way. The white man's disease like tuberculosis, scarlet fever, smallpox raised havoc with the natives in the past. Now they are being replaced by the white man's mental illnesses as the native's major problem and could end in cultural genocide.

From 1966 to 1970 mental illness increased 172 percent in the Alaskan native. It is ironic that men who became rich because of oil and built hospitals to house the natives go mad, will probably go down in history as great humanitarians.

Demonstrations against the Japanese are also a problem Alaska must be prepared to meet. An international incident in the form of a major oil spill involving British Petroleum's north slope crude oil being shipped to Japan in a Japanese supertanker would be enough to trigger these demonstrations.

This will not be the fault of the Japanese. Rather, it will be a case of the United States not being able to adjust to being exploited instead of it doing the exploiting.

During the lifetime of the trans-Alaska pipeline, one major earthquake and at least one major oil spill will occur. This is not my prediction, but can be found in the pages of the final environmental impact statement on the proposed trans-Alaska pipeline.

It is a deception for the oil industry and the Government to deny that the above potential dangers exist. The oil industry and the Government will claim that this is only my opinion. I would like to call your attention to this statement that appears in the final environmental impact statement.

Quote: This would be the first project of this type and magnitude built across the Arctic and that some of the proposed techniques are theoretical rather than proven. Unquote.

Having worked on a number of construction projects in Alaska, it is my firm conviction that the oil industry does not have a feasible plan at this time to lay pipe in the Arctic successfully. Much of it will be laid by trial and error with dire results. And let us not forget the oil fields themselves with their networks of pipelines and the effects of thermal stress upon these pipelines.

The trans-Alaska pipeline is to be constructed under strict stipulations. But what good are stipuations if they are not viable? And they won't all be viable because this is a new experience for both the oil industry and Government. Plus gentlemen, you would be surprised what a case of Scotch can do to stipulation.

The oil industry wants to build the pipeline immediately because it claims it has $\$1\frac{1}{2}$ to $1 billion tied up in costs and wants to protect its vested interests.

If you can't stop the oil industry now, how do you expect to stop them once they have 3 or 4 billion dollars invested in pipelines and vast areas of the Alaskan Arctic are in a deteriorated condition?

This year makes 80 years that the automobile has been on the streets of America. During that time we invented a bomb whose power can destroy the planet. We also perfected a rocket that will take man to and from the moon.

Yet during this period gas mileage has declined to where the average automobile gets less than 14 miles to the gallon. That is an outrage.

That the oil industry and natural gas now supply us with 77 percent of our energy is a disgrace. If Hitler had the ovens and Stalin had the salt mines, then we have the equivalent in the oil industry. Its monopoly has done irreparable harm to our environment. No other industry has used the slogan "buy now, pay later" more to its advantage than the oil industry has.

We are paying the price today because this Nation lacked vigilance.

I would not blame the Japanese for this. In fact, I said on CBC radio tape in Ottawa, a couple of years ago, that finally Americans will not be saying Yankee, get out like the Canadians; we will find somebody else. We have been exploiting so long.

Here is another quote: "Deficits will most likely be made up by increased imports and alternatives will not contribute unless specific action is underlined—specific action is taken to cause them to do so."

Gentlemen: You can laugh. This is the comic hour, but within the future we will cool our house and heat it with a gadget like this or similar to it and the sooner we get at it, the better it will be.

But I have been pretty harsh on oil and I am not too harsh on government.

I believe in working through the system. I have not demonstrated or anything. If it is constructed, it will not be built by the oil industry or the Government, nor will it be constructed by principle and ethics. It will be built by the economic arrogance and the greed of the American people.

I believe the great task of government is to eliminate this economic arrogance that prevails in a large segment of this country and change it to humbleness. It must also eliminate or diminish this greed which is only being used to increase gross national product and is fostering a false prosperity.

Oil is really obsolete. We should have done more extensive research on solar and wind energy plus research on the magnetic field. We should have researched more extensively, too, methane gas and the fuel cell. Also a more efficient engine should have been perfected. A 100-percent increase in miles per gallon would cut crude oil requirements 20 to 25 percent, but instead of research, we give the oil industry more tax money to look for more oil so they can do more polluting.

Twenty years ago, if we would have had a full-scale investigation of the oil industry, we would not have to be holding hearings today.

I would like to call your attention, gentlemen, to this observation: Pick up a dictionary and notice how few words separate prosperity and prostitution. We are encouraging a form of prosperity now that is stripping us of our conscience.

We are prostituting our natural resources in the form of materialistic gluttony that is resulting in global suicide. The time has come

where we have to change from life-style of "planned obsolescence" to one of "preserve or perish."

It is time the Nation again returns to citizenship and away from consumerism. The emphasis on consumerism has proved to be hollow. We are trying to run a nation without a healthy and constructive purpose.

The American people want more and more freedom at a price of less and less self-discipline and responsibility. A society that continues on such a course can only end in being completely controlled in order to survive.

If nature is no longer sacred and we are to believe engineers, could motherhood be next?

It would appear that the biggest decision for Congress is whether we will save motherhood or go to producing life outside the womb. If we do not start getting concerned about this motherhood we will probably be as obsolete as the buggywhip by the middle century.

In fact, if you just study history, use a little logic and patience, things come about.

Twenty years ago, I told everybody what is happening today. It would appear to me, though, that we have a sick society with its insanity and that is not yet run its course.

In all probability, the trans-Alaska pipeline will be built. The lust for materialism and the greed for money will clear the way for construction.

Gentlemen, I realize that you will probably laugh and probably say, well—but I will tell you one thing about truth; the American people are allergic to the truth. To tell the American people the truth is to tell a woman passionately in love with a man not to marry him; he is a bum.

First, she will ignore you and later on, laugh at you.

I will comment on the impact statement for future impact statements will be a value to Congress. I read the full thing, put $300 in it, and as far as I am concerned, one-third of the impact statement was a brainwash of public relations of the oil industry and has no place in an environmental impact statement.

You give the facts. If they want a rebuttal, they put their own out and sell it to the public. The other two-thirds could easily be condensed down to 500 pages and sold to the public for $5.95 instead of $12.20.

The fact they didn't have pictures—the Canadians put something out, 300 pages, which are more superior than 500. I resent very much the former letter of Maurice Stans saying it had no impact on this.

We have to stick to environmental and we should let more people testify.

There is about 15 feet that I would like to look at that isn't being put in here. As far as I am concerned, it was nothing more than a case of quantity trying to suppress quality.

If you show you have 9 inches of stuff, you think you are good. I condensed it down to 100 pages or less and lots of time I caught errors in the impact statement.

One volume would say one thing and one say the other.

Thank you, gentlemen.

Mr. MELCHER. Thank you very much, Mr. Quade.

I am sure the committee appreciates your interest and concern in coming to us from your home in Wisconsin.

I am interested particularly in your environmental impact statement.

If you have other testimony, you would like to submit regarding the impact statement, I am certain we would welcome it. Thank you very much.

The gentleman from New Mexico.

Mr. RUNNELS. No.

Mr. MELCHER. The Gentleman from Guam.

Mr. WON PAT. No thank you, Mr. Chairman.

Mr. MELCHER. Our next witness is Mr. Anthony Wayne Smith, president and general counsel, National Park and Conservation Association, and chairman of the Environmental Coalition of North America.

STATEMENT OF ANTHONY WAYNE SMITH, PRESIDENT AND GENERAL COUNSEL, NATIONAL PARKS AND CONSERVATION ASSOCIATION, CHAIRMAN OF ENVIRONMENTAL COALITION OF NORTH AMERICA

Mr. SMITH. I am pleased to be here.

I don't repeat my identification that you have given, except to comment with respect to the environmental coalition. We have submitted a folder containing information about it, and that the steering committee includes, among other people, Mr. Dienelt, vice president, United Automobile Workers of America, Walter J. Burke, the international secretary treasurer of the United Steelworkers of America at their office in Pittsburg, and Mrs. W. L. Brown, chairman of the conservation committee of the Garden Club of America.

So that this coalition includes most of the conservation organizations of the United States, two large labor organizations, the Garden Club and also, associated in our last work, the master of the National Grange.

So there are probably some 3 million people associated with the organization for which I am speaking this morning.

The environmental coalition recommends legislation providing for:

1. Negotiations by the State Department with Canada looking toward a treaty for the construction of oil and gas pipelines to tap the Prudhoe Bay fields through a common corridor passing through Canada.

2. An expeditious investigation by the office of technology assessment or the National Science Foundation with respect to the economic, ecological, and security aspects of such a route, with a report to Congress.

3. Preclusion of the issuance of any permit for a pipeline from Prudhoe Bay to Valdez, whether by general legislation broadening permit authority or otherwise, pending a final decision by Congress on the best route for the development of the north-slope fields.

The reference to general legislation is important, that is, we feel legislation which has been introduced broadening the authority of the Secretary of Interior to grant a broader right-of-way in terms of the number of feet in right-of-way as an improper way to proceed

because it will, in fact, make a decision on the merits of the case and that that decision should be made in the light of deliberate decisions and not indirectly by legislation which would broaden the right of way.

The issue needs to be faced squarely and made by Congress with an agreement with that proposition.

4. Hearings—assuming that you would go that route and provide for expeditious hearings, and expeditious negotiations to see what the situation really is in Canada, and we have hearings by both houses looking toward the introduction of legislation authorizing the construction of oil and gas pipelines utilizing a common corridor through Canada, with a view to final decision by Congress itself, but

(a) without modification of the National Environmental Policy Act, either generally or for purposes of the development of the North Slope and

(b) without restrictions on judicial review of any relevant issues.

We believe if the previous course of action were followed that subsequent litigation, if any, would be minimal.

The negotiations, investigations, and hearings recommended should be broad enough to cover other alternative methods of extraction in addition of pipelines. None of the alternatives to the Valdez route have been adequately investigated.

This should be open but it should be done without delay.

What we are talking about is expeditious action.

The hearings should also be open to the question whether Prudhoe oil needs to be tapped at all at this time, or should be reserved for the future. I am saying they should be open.

The NPCA, while supporting the position of Encona, would be prepared to recommend the immediate enactment of legislation directing negotiations with Canada for a treaty and the prompt construction of the Mackenzie River pipeline thereafter. We are satisfied that the ecological hazards of the Valdez route are insurmountable and that those of the Mackenzie route are minimal. We are in favor of tapping the North Slope oil and gas fields simultaneously through a common corridor up the Mackenzie River to Edmonton and branching to Seattle and Chicago.

The negotiations with Canada recommended by both Encona and NPCA would settle the question whether a Canadian route is feasible and acceptable in terms of national security. This question should be settled before anything else is done, whether with respect to Valdez or with respect to Mackenzie.

If we can get an agreement with Canada providing for our national security questions we should get it. This question should be settled before anything else is done.

Mr. MELCHER. Without objection, your entire prepared statement will be made part of the record at this point.

[Full text follows:]

STATEMENT OF ANTHONY WAYNE SMITH, PRESIDENT AND GENERAL COUNSEL, NATIONAL PARKS AND CONSERVATION ASSOCIATION, AND CHAIRMAN, ENVIRONMENTAL COALITION FOR NORTH AMERICA

My name is Anthony Wayne Smith, 1701 Eighteenth Street, N.W., Washington, D.C. I am President and General Counsel of the National Parks and Conservation Association (NPCA) and Chairman of the Environmental

Coalition for North America (Encona). Personal Identification and that of the two organizations is submitted herewith.

We greatly appreciate the official invitation from the Committee to testify in these proceedings and hope to be helpful.

Encona recommends legislation providing for:

1. Negotiations by the State Department with Canada looking toward a treaty for the construction of oil and gas pipelines to tap the Prudhoe Bay fields through a common corridor passing through Canada.

2. An expeditious investigation by the Office of Technology Assessment or the National Science Foundation with respect to the economic, ecological, and security aspects of such a route, with a report to Congress.

3. Preclusion of the issuance of any permit for a pipeline from Prudhoe Bay to Valdez, whether by general legislation broadening permit authority or otherwise, pending a final decision by Congress on the best route for the development of the north slope fields.

4. Hearings by the Interior Committees of both Houses looking toward the introduction of legislation authorizing the construction of oil and gas pipelines utilizing a common corridor through Canada, with a view to final decision by Congress itself, but

(a) without modification of the National Environmental Policy Act, either generally or for purposes of the development of the north slope and

(b) without restrictions on judicial review of any relevant issues.

The negotiations, investigations, and hearings recommended should be broad enough to cover other alternative methods of extraction in addition to pipelines. None of the alternatives to the Valdez route have been adequately investigated.

The hearings should also be open to the question whether Prudhoe oil needs to be tapped at all at this time, or should be reserved for the future.

The NPCA, while supporting the position of Encona, would be prepared to recommend the immediate enactment of legislation directing negotiations with Canada for a treaty and the prompt construction of the MacKenzie River pipeline thereafter. We are satisfied that the ecological hazards of the Valdez route are insurmountable and that those of the MacKenzie route are minimal. We are in favor of tapping the north slope oil and gas fields simultaneously through a common corridor up the MacKenzie River to Edmonton and branching to Seattle and Chicago.

The negotiations with Canada recommended by both Encona and NPCA would settle the question whether a Canadian route is feasible and acceptable in terms of national security. This question should be settled before anything else is done, whether with respect to Valdez or with respect to MacKenzie.

Investigation by the Office of Technology Assessment or by the National Science Foundation will provide the information on the ecological, economic, and security issues which Congress should have before acting.

The hearings by Congressional Committees will give all of us an opportunity to comment to Congress on the proposed treaty and the findings of the OTA or NFS investigation.

Congress can then act to get the problem of the Prudhoe Bay oil pipeline settled once and for all.

Neither the preliminary, nor the ultimate legislation should modify the National Environmental Policy Act in any way whatsoever. The Prudhoe Bay oil dispute should not be the occasion for the impairment of an invaluable statute.

This means that the preliminary and final legislation on the pipeline should not undertake to eliminate the requirement of an environmental impact statement, nor limit review by the courts.

When Congress has taken the final action suggested, directing the Secretary of the Interior to issue a permit to connect the pipelines in the United States with the pipelines in Canada, the permit will be issued.

We think it is quite unlikely that such issuance would be contested in court, either by a resumption of the proceedings which held the permit for the Valdez route invalid, or by further litigation based on the contention that a new enviro mental impact statement would be necessary.

We recommend very strongly against the passage of legislation at this time authorizing the Secretary of the Interior to grant permits for broader

rights-of-way generally, unless an exception is made for any pipelines from the north slope of Alaska. Such general legislation would have the effect of authorizing the Valdez route by indirection without full consideration of the merits of the alternatives by Congress.

If such general legislation were to be adopted, a permit for a broader right-of-way from Prudhoe Bay to Valdez would inevitably be issued and the case would be back in court on the adequacy of the existing environmental impact statement.

Once the question of adequacy has been decided, and a new or supplemental report submitted if need be, the way will have been cleared for the Valdez route.

It has been urged that the merits of the alternative routes be left to the courts, but the courts will not assume that responsibility. The most that the courts will do as a matter of well-established law will be to consider the adequacy of the report. They will not interfere with the ultimate discretion of the administrative officers of the Government in deciding on the issuance of a permit after presentation of an adequate report.

The responsibility in this matter cannot be delegated to the courts; it lies with Congress, which is the agency of Government which must decide the fundamental policy questions at issue.

When we oppose granting a permit or authorization for Valdez by indirection by general legislation we mean we oppose both any amendment of the Mineral Leasing Act, and any provisions in the proposed Organic Act for the Bureau of Land Mangement for that purpose, unless exceptions are made for the north slope. Either type of legislation could serve as a vehicle for granting general authority to the Secretary of the Interior to issue permits for rights-of-way broad enough to permit the construction of the Valdez pipeline without adequate Congressional consideration of the merits.

To repeat, this is a decision for Congress to make directly after considering the merits in the light of full public discussion, and not by a sleight-of-hand performance in the form of general legislation where too many people may not realize what is going on.

The reasons why the Valdez route is objectionable include the following:

1. It cuts through too much permafrost, with well-known risks.
2. It cuts across the caribou migrations on the north slope, with possibly serious ecological consequences.
3. It must traverse the rugged Brooks Range, involving engineering risks and broad rights-of-way.
4. It cuts across the Alaska Range with great earthquake hazards.
5. It entails unavoidable pollution of a serious nature on Prince William Sound by reason of loading onto tankers.
6. It involves great navigation risks through dangerous waters and possibly serious pollution along almost the entire west coast of the North American continent.

The advantages of the alternative routes through Canada are as follows:

1. A route coming down the Alcan Highway would avoid the Alaska Range, Prince William Sound, and tanker shipments, eliminating a significant segment of the hazards.
2. A route southeast to the MacKenzie River, to Edmonton, and to Seattle and Chicago would in addition eliminate most of the permafrost, caribou, and Brooks Range problems.
3. It would also have the distinct advantage of providing for a common corridor for gas and oil.

Incidentally, some of us are still not satisfied as to the question whether oil coming through Valdez would go to Japan. This Committee might wish to look into that question. If any of the oil would be going to Japan, the argument about the fuel crisis in the lower states becomes rather transparent.

We are not saying that Prudhoe Bay ought not to be tapped. We are not saying that there is no fuel problem in the lower states, although its origins and the best means of alleviating it may be open to discussion. But the practical situation is as follows:

1. A discussion authorizing the contruction of the Valdez line by indirection will not alleviate the present fuel shortage, if only because construction will take too long.

97-839 O - 73 - pt. 2 - 13

2. There will be much opposition to the Valdez route from regional economic and political groups, without regard to environmental factors.

3. The alternative routes, particularly MacKenzie, may well not meet with any significant opposition, and may indeed have support from the forces opposing the Valdez route. Hence the Alcan or MacKenzie routes, or other alternatives, may well move much faster than Valdez.

4. The economic costs as between Alcan or MacKenzie on the one hand and Valdez may not be very different. Considering the environmental costs, the alternatives may well be much less expensive.

5. While the oil from Prudhoe may help, it will not be decisive quantitatively in solving any fuel shortage in the lower states. If more oil is needed quickly the best way to get it is to lower import barriers. If this is done, for the present we can work without undue haste toward the development of our domestic supplies by acceptable methods.

It has been suggested that two pipelines be built, first Valdez, then MacKenzie. This would compound the ecological impairment which would result from tapping Prudhoe Bay. Both routes will do ecological damage, Valdez much more seriously than MacKenzie. There may be doubt whether the Prudhoe reserves are as large as once supposed. No energy crisis exists which would justify such rapid exploitation, nor such environmental destruction. If the oil of the north slope is to be taken out, one pipeline is all that is necessary or desirable.

There will be an increasingly solid opposition to the Valdez route. Whatever the respective merits of the various alternatives, the risks of the Valdez route are seen more and more as being unacceptable and unavoidable. The way to get action promptly on bringing oil out of Prudhoe Bay is to move ahead with the negotiations, the technical investigations, and the public hearings we recommend, and for Congress to decide on and authorize the best alternative to Valdez promptly.

Mr. SMITH. Thank you, Mr. Chairman.

If I may just point out one or two paragraphs.

Perhaps the simplest thing is to read one or two paragraphs.

We recommend very strongly against passage of legislation at this time authorizing the Secretary of the Interior to grant permits for broader rights-of-way generally, unless an exception is made for any pipelines from the North Slope of Alaska. Such general legislation would have the effect of authorizing the Valdez route by indirection without full consideration of the merits of the alternatives by Congress.

When we oppose granting a permit or authorization for Valdez by indirection by general legislation we mean we oppose both any amendment of the Mineral Leasing Act, and any provisions in the proposed Organic Act for the Bureau of Land Management for that purpose, because this could lead one either way, unless exceptions are made for the North Slope. Either type of legislation could serve as a vehicle for granting general authority to the Secretary of the Interior to issue permits for rights of way broad enough to permit the construction of the Valdez pipeline without adequate congressional consideration of the merits.

Incidentally, some of us are still not satisfied as to the question whether oil coming through Valdez would go to Japan.

This committee might wish to look into that question. If any of the oil would be going to Japan, the argument about the fuel crisis in the lower States becomes rather transparent.

We are not saying that Prudhoe Bay ought not to be tapped. We are not saying that there is no fuel problem in the lower States, although its origins and the best means of alleviating it may be open to discussion.

It has been suggested that two pipelines be built, first Valdez, then Mackenzie. This would compound the ecological impairment which would result from tapping Prudhoe Bay.

We say with further explanation if the oil of the North Slope is taken out one pipeline is all that is necessary or desirable and we recommend in that case Mackenzie.

There will be an increasingly solid opposition to the Valdez route. Whatever the respective merits of the various alternatives, the risks of the Valdez route are seen more and more as being unacceptable and unavoidable. The way to get action promptly on bringing oil out of Prudhoe Bay is to move ahead with the negotiations, the technical investigations, and the public hearings we recommend, and for Congress to decide on and authorize the best alternative to Valdez promptly.

I will be glad to answer any questions.

Mr. MELCHER. Thank you very much.

I have a comment and a question.

The point has come up before concerning the possibility of the development of the oil field and the possibility of the oil being sold to Japan or some other country. We have, in the past, asked the owners of Alyeska what their intentions were in this regard and they have all indicated that they had no intention of selling any oil product to Japan or any other foreign country.

That is my comment—and now my question of you, Mr. Smith. Would you favor, if a bill is passed out of this committee for a Trans-Alaskan pipeline to Valdez, would you favor legislative language in the bill which would prohibit any sale of oil product to Japan or any other foreign country?

Mr. SMITH. Yes.

Mr. MELCHER. I think your testimony is very worth while.

I think it is very pertinent and well laid out, and I appreciate it very much.

The gentleman from New Mexico.

Mr. RUNNELS. No questions.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. I respect your testimony.

There are certain questions. I would like to make a statement here as to why you are against the Valdez project.

One of the statements is it cuts across the caribou migration slope with possible serious ecological consequences.

Which route would the caribou migrate?

Mr. SMITH. Caribou migration runs from northeast to southeast.

Mr. YOUNG. Which way does the line run?

Mr. SMITH. South.

Mr. YOUNG. If you run the Canadian route which way would it go from Prudhoe Bay?

Mr. SMITH. It would go east.

Mr. YOUNG. And would go east and west and migration is north and south?

Mr. SMITH. The caribou migration would take place——

Mr. YOUNG. What I am saying, Mr. Chairman, the proposed route, the caribou might migrate up and down parallel to your pipeline and if it cuts across, there is one thing I want to tell you, I have watched caribou quite a bit, to defend them, they are a magnificent animal, sometimes you underestimate their ability.

One other question——

Mr. SMITH. Mr. Chairman, now since I was asked this question——

Mr. MELCHER. I would appreciate hearing Mr. Smith's response.

Mr. SMITH. The Valdez pipeline will come directly south or approximately south from Prudhoe Bay. The caribou migration runs northwest to southeast and the Valdez route will cut across that. The proposed pipeline, Mackenzie River will go essentially east or slightly southeast. Prudhoe Bay to the Mackenzie River. It will not cross the caribou migration.

Mr. YOUNG. I have watched these caribou and I know where they migrate.

It seems they go back where they have been over before.

It is just a small question.

Mr. MELCHER. Would the gentleman yield?

Just so I understand your response, are you saying that the caribou, that that route is too far north for the caribou migration?

Mr. SMITH. The route we have in mind for any event for bringing Prudhoe Bay oil over to the Mackenzie Delta would essentially be north of the main caribou migration. I don't know. There may be individual caribou that go some place else.

Mr. YOUNG. Mr. Chairman, the largest caribou herds travel through Carcibole, and that is where the caribou cross.

Mr. SMITH. There is not much point in pursuing that question.

Mr. Chairman, the thing we are concerned with is whether somebody likes caribou. It is not a sentimental question.

You have a complete ecosystem of the North Slope hanging in very substantial part on the continued existence of the caribou.

Whole populations hang on it and the native populations hang on it, also.

I have large populations there that—foremost of which are definitely dependent on hunting and they will stay that way, but a few of them won't integrate themselves into the industrial system. This is a question of the man and animal plant relationship up there, and we are faced with a proposal here which will be enormously disruptive, putting it very cooly and calmly.

I am not emotional about this thing. I don't propose to get that way. This is an objective scientific fact. There is plenty of material in the impact statement that makes this clear.

We are suggesting simply that at one point with respect to the relative merits of these routes that the route to the Mackenzie River is far less destructive. It is not without damage, but it is less destructive.

You go east by Little South, come out on the gravel beds of the Mackenzie Delta and then you are on the high granite rock of the Canadian shield.

You are on solid ground. You do not go through anything of earthquake country. You are east of the Danally Fault, which is the main earthquake fault.

You do not have transshipment of the pipeline to tankers which is the great problem as the Valdez—whatever the positions are taken.

You probably supply much better and larger market in the Midwest than the Pacific coast, because, as I say, the indications are that the Pacific coast will not be able to absorb this oil and there will have to be a surplus to go into Japan.

I suspect if a provision were put in your legislation that it would not go to Japan that the consortium would rethink its financing.

Mr. YOUNG. Mr. Chairman, with your permission, I will verify my position on the caribou statement.

Mr. MELCHER. The gentleman from Guam.

Mr. WON PAT. Thank you, Mr. Chairman.

Mr. Smith, you probably know we held extensive hearings in regard to this matter, and the point you recommend here of course has been brought up before the committee.

Do you think that the Udall bill would provide the means that you are recommending?

Mr. SMITH. The recommendations we have made here incorporate the provisions of the Udall bill and if there is a House counterpart of the Mondale bill in the Senate we would see the great desirability of an independent appraisal of the ecological, economic, and security problems because without this insurance has been accorded in the studies in the Department of Interior.

In any event, if the public is not satisfied, as Congressman Udall said, that they have been parted——

Mr. WON PAT. In all probability, Congress will decide what this committee recommends. So in my view, then, the Udall bill, I suppose, as well as the Mondale bill, would be the means by which these recommendations would be, in other words, employed?

Mr. SMITH. Yes.

Mr. WON PAT. That is all, Mr. Chairman.

Mr. MELCHER. Mr. Smith, I have one more question about the caribou.

While the route that you are recommending would be north of the main part of the migration route through Alaska, what about when it comes in the Mackenzie Delta and then proceeds through Canada? Are there caribou migration routes there that would be upset by the pipeline once it is in Canada?

Mr. SMITH. I can't answer that question authoritatively. This is one of the questions that you might wish to look into.

But it is not entirely a question of whether the caribou migrations move that way or rather it is not entirely a question of whether there are carbon migrations in the area of the Mackenzie route.

It is rather in part in any event a question of the damage done to the terrain of the environment which will interrupt the route; that is if you have a pipeline going through permafrost conditions in which tremendous gravel beds have to be laid down or tremendously large pilings have got to be sunk into the ground, you have a large construction job, more than if you are planning a 48-inch pipeline over granite country.

But I think the answer to your question is that there are no comparable migrations that would be interrupted by a pipeline up Mackenzie Valley. I could be mistaken.

Mr. MELCHER. Mr. Smith, who would be the authority on that?

Mr. SMITH. I think we could obtain information on that for you and submit something for the record.

Mr. YOUNG. Mr. Chairman, with your permission, I think we ought to get the information from the wildlife—game authority, State of Alaska. They have it.

Mr. MELCHER. The committee would welcome it from both sources.

Mr. SMITH. We will be glad to do that.

[The information follows:]

NATIONAL PARKS AND CONSERVATION ASSOCIATION,
Washington, D.C., June 7, 1973.

HON. JOHN MELCHER,
Chairman, House of Representatives, Committee on Interior and Insular Affairs, Subcommittee on Public Lands, Washington, D.C.

DEAR CONGRESSMAN MELCHER: During the course of my recent testimony before your Subcommittee on the Alaska pipeline matter, Valdez and McKenzie routes on the caribou.

I have asked Dr. John W. Grandy, IV, Administrative Assistant, Wildlife, at NPCA, to look into these questions for me, and on the basis of his reports to me, I can provide more precise information as follows:

The caribou population of the North Slope appears to be divided at present into a sub-population somewhat to the west of the Valdez route and another sub-population somewhat to the east. However, it is customary that over the course of several years, such sub-populations will migrate back and forth across the proposed Valdez pipeline route.

These migrations appear to be somewhat diffuse movements, not following narrow paths such as those developed by herds of cows, but nonetheless, they are movements which would be interrupted by the Valdez pipeline.

These movements are apparently occasioned by increases in herd density which, in turn, result in increased behavioral interaction and increased pressure on food resources. The sub-populations are therefore probably heavily dependent on freedom of movement for survival.

We have been informed that there appears to have been a very heavy die-off of caribou on the North Slope during the last year or two. We are told that there is not much information about the extent or nature of this decline in caribou population. It could be a cyclical matter, or it could be related to disruption of calving by the disturbances which have already taken place on the North Slope.

In addition, the Valdez line would pass through a major caribou migration route south of the Alaska range in the Copper River Basin.

The situation with respect to the McKenzie route is in some ways different and in some ways similar. On the assumption that the McKenzie line would run along the coastal plain from Prudhoe Bay toward the McKenzie delta, a relatively short distance from the coast, it would not encounter caribou or cross caribou routes. In other words, our information confirms the statement I made in that respect in my testimony.

There are differences of opinion among persons acquainted with the natives in that area as to whether they would object to having the pipeline located close to the coast; such objections might be encountered.

If the McKenzie route were located on higher ground, farther south toward the foothills of the Brooks Range, caribou and their calving grounds would be encountered and movements would be disrupted.

In any event, construction of a pipeline or associated disturbances in the vicinity of a calving ground should not be allowed during the calving period, between the middle of May and about June 20.

Some of the expert opinion we obtained indicates that the migrations or drifts of sub-populations could be maintained in spite of any pipeline route if earthen ramps were provided over the pipeline at regular intervals. It

appears that caribou would not move under the pipeline, and that rather broad ramps would have to be provided over the line. What problems of temperature, permafrost melting and the like would be encountered in respect to such ramps, I would not venture to guess at the moment, nor what measure of disruption of tundra would be involved in the borrow pits from which the materials would be obtained.

As I commenced in my testimony, the caribou problem is but one of several, and in respect to earthquakes, spills and marine disasters, the Canadian routes, whether McKenzie or Alcan Highway, are vastly superior to the Valdez route.

Dr. Grandy has read this letter and approved it. He would be happy to make himself available to your staff to obtain further information on these questions if you would like to have him do so.

With best wishes and much appreciation.

Cordially yours,

ANTHONY WAYNE SMITH,
President and General Counsel.

THE DISTRIBUTION AND MOVEMENT PATTERNS OF CARIBOU IN ALASKA[1]

(By James E. Hemming, Alaska Department of Fish and Game, Game Division Technical Bulletin Number 1, July 1971)

PORCUPINE HERD

The Porcupine herd, one of Alaska's largest, ranges over remote portions of northeastern Alaska, northern Yukon Territory, and the narrow fringe of Northwest Territories lying west of the MacKenzie Delta. The population contained approximately 104,000 caribou in 1964 (Lentfer, 1965) and appears to be increasing.

Caribou have occurred within the present range of this herd for at least 100 years. Prior to 1900 a portion of the Porcupine herd and caribou from Canadian herds to the east used the forested bottomlands of the MacKenzie River as mutual winter range (Pike, 1892; Russell, 1898). Some interchange of animals may have occurred at that itme.

Apparently seasonal distribution patterns in the late 1800's were very similar to those observed today (Funston, 1896; Murie, 1935; Preble, 1908; Russell, 1898). In the early 1900's, however, the herd shifted away from the coast and MacKenzie Delta toward the southwest (Harrison, 1908; Porsild, 1945). This shift toward the central Brooks Range may have resulted in the use of more westward passes during seasonal migrations. Simon Paneak, a resident of Anaktuvuk Pass, reported that during the period from 1900 to 1920, caribou moved north through Anaktuvuk Pass in the spring and turned east upon reaching the Arctic slope. This occurred at a time when the Porcupine herd occupied the central Brooks Range and the Arctic herd was greatly reduced and remained throughout the year in the high mountains of the western Brooks Range (Birch, unpublished work; Skoog, 1968). After 1920, most of the caribou traversing Anaktuvuk Pass in the spring turned west toward the Utukok River upon reaching the Arctic slope. The latter activity coincides with the period of growth and range expansion of the Arctic herd.

For many years the relationship between caribou occurring in the eastern Brooks Range, the British Mountains, and the Richardson Mountains was unknown. It was not until 1953 that Robert Scott (1953a) recognized that caribou from the Chandalar, Porcupine and Richardson Mountain country were all part of the same herd.

The Area

The Porcupine caribou herd presently occupies an area of approximately 78,000 square miles in northeastern Alaska, Yukon Territory, and Northwest Territories. Within the range of the Porcupine herd temperature extremes range between 90° F and —55° F. Coastal areas are typified by

[1] Financed through Federal Aid in Wildlife Restoration Project W-17-2.

strong winds throughout the year—decreasing toward the interior. Annual precipitation averages about 10 inches.

Along the eastern boundary the boreal forest extends north to the Arctic coast on the broad MacKenzie River Delta. The area consists of very wet, boggy tundra and spruce forest that tends to restrict caribou movements. To the north the Richardson and British Mountains end abruptly at the Beaufort Sea, leaving only a narrow beach fringe along the Canadian coast. In Alaska the Arctic coastal plain and foothill zones become ever wider westward toward the Colville River.

The central and eastern Brooks Range is a wilderness of rugged glaciated ridges rising to summits of 7,000–9,000 feet on the north and 4,000–6,000 on the south. There is little vegetation above 4,000 feet. Small cirque glaciers and larger valley glaciers are common particularly in the Franklin and Romanzof Mountains north of Arctic Village. Except for the British Mountains in the extreme eastern part of the range, few north-south passes exist.

The forest tundra south of the mountains is an area of diversified topography. The Porcupine plateau extends from the middle fork of the Chandalar River east to the Richardson Mountains, including the valleys of the upper Black and Porcupine Rivers that spread south in broad dendritic patterns toward the MacKenzie Mountains. There are a few low ridges, rounded hills and low mountains rising to 3,500 feet. The Old Crow Flats lie between the British Mountains and the Porcupine River. This is a broad marshy basin, dotted with lakes, ponds and meandering streams.

Winter Distribution

In normal winters most of the herd moves well into the forest zone, dispersing south and west after a leisurely drift around the east end of the Brooks Range (Royal Canadian Mounted Police unpublished reports 1946–1952; Stevens, 1948; Soper, 1951; McEwan, 1952; Scott, 1953; Olson, 1958 and 1959; Skoog, 1953; Hemming and Pagau, 1970). Adult males tend to penetrate farther into the boreal forest than females.

Apparently the Porcupine herd makes little use of Alaska's Arctic slope in winter. However, in some years a portion of the herd may remain on the Canadian coast near Herschel Island (Olson, 1959). In 1970 residents of Aklavik told me that large numbers of caribou remained in the Richardson Mountains just west of their village during the winter of 1967–68.

Caribou from this herd usually reach their respective winter ranges by early November and remain until March. However, movement onto winter ranges near Arctic Village may continue into December. In the latter area, a circular winter movement occurs. In early winter the animals move west to the Big Lake-Chandalar area. In mid-winter they turn around and return over their original route, passing Arctic Village again in April and May. Some animals remain scattered over the entire area throughout the winter (Fig. 4). Occasionally the winter ranges of the Arctic caribou herd and the Porcupine caribou herd overlap in the Chandaler-Wiseman area.

In 1952 McEwen suggested that the caribou occurring south of the upper Peel River in winter are not a part of the Porcupine herd. I received similar reports from native hunters and bush pilots at Fort McPherson and Inuvik in 1970. According to these reports, Porcupine herd animals wintering in the Caribou-Road River area do not normally move south of the Peel River. However, recent studies by the Canadian Wildlife Service (Pearson, 1971 pers. comm.) and Gas Arctic Ltd. (Calef, 1971 pers. comm.) indicate that in some years winter movements of the Porcupine herd extend south of the Peel River into the Keel, Knorr, Ogilvie and Trevor Mountains.

Little is known about the caribou to the south, along the drainages of the Ogilvi and Blackstone Rivers, but local residents refer to them as the "Dawson herd". On 20 July 1964 I saw a group of approximately 300 caribou near the upper Blackstone River at mile 55 on the Dempster Highway. This group contained many cows and calves, suggesting that a calving area exists somewhere in the Ogilvie Mountains. Obviously these limited observations do not prove the existence of a new herd, but they do point up the need for more work in that area.

Spring Migration

March signals the start of a 400 mile trek to the Arctic coast. Adult females are the first to leave the wintering grounds and proceed at a fairly rapid pace. Animals from the Caribou-Road River area move along the east slopes of the Richardson Mountains toward Shingle Point. Most of the caribou in the upper Porcupine River country move north between Old Crow and the mouth of the Bell River, but a few move up the Bell River, crossing the Richardson Mountains via McDougall Pass. To the east animals from winter ranges on the Black River cross the Porcupine River at two places. Some cross between the village of Old Crow and Driftwood River, while others use a historic crossing area just west of Old Rampart, where the spruce forest stretches north across the river (Fig. 4). In 1886 Funston reported that the area near Old Rampart was a traditional crossing area and that there were no crossing areas downstream. Caribou from the Arctic Village area move northeast in spring toward the Firth River. Normally the most direct routes to the calving grounds are used. However, in the eastern Brooks Range the passes west of the Kongakut River are extremely precipitous, with valley glaciers and heavy snow cover forming an effective barrier to spring movements. Therefore most of the Porcupine herd moves north via the low passes to the Blow, Babbage and Firth Rivers. In some years varying numbers of caribou remain in the Big Lake-Chandalar area in winter. In the spring these animals may move north along the Dietrich and middle fork of the Chandalar Rivers.

Bulls and many yearlings drift north at a very leisurely pace, with some lingering on winter ranges until June.

Severe weather and deep snow may delay the spring migration and calving may occur en route. In 1935 a portion of the herd calved near Arctic Village and most of the calves died as a result of unreasonable snow and cold (Scott, 1953). Delays of this magnitude are rare. More commonly, late migration results in some calves being born on the Canadian coast between Herschel Island and the Alaska border (Stevens, 1948; McEwan, 1952). Cows calving en route proceed to their traditional calving grounds in Alaska.

In the northwestern part of the Ogilvie Mountains, the Porcupine and Fortymile caribou herds overlap in winter. In the spring of 1957 and 1964 large numbers of Fortymile caribou moved north with the Porcupine herd (Skoog, 1964). Unfortunately, aerial reconnaissance work during the past 15 years has been too limited to adequately measure the frequency of such population shifts.

Calving

The major calving area is located just south of Barter Island between the Katakturuk and Kongakut Rivers, an area of about 2,500 square miles (Fig. 4). This area rises from sea level to an elevation of 500 feet. The gently rolling terrain is dominated by sedge meadows laced with braided streams. Increasing amounts of sedge tussock are found to the south toward the mountains.

Calving occurs in late May and early June, peaking about 30 May (Skoog, 1962). At this time bulls, yearlings and nonpregnant cows are scattered from the foothills of the Brooks Range in Alaska to the Richardson Mountains in Canada.

Summer Distribution

Soon after calving the cows and new calves begin assembling into increasingly larger groups. The post-calving movement brings the caribou south and east into the mountains where they spend much of the summer. By early July cows, calves and some bulls are well into the foothills of the Romanzof and British Mountains. However, throughout the summer some bulls and yearlings remain scattered on both the north and south sides of the Brooks Range from Atigun-Dietrich Pass eastward into Canada. Apparently cool winds along the coast offer relief from biting insects. In late summer a majority of the herd can be found along the coastal range from the Arctic Wildlife Range east to the Blow River.

In general caribou of the Porcupine herd move into Alaska only during the calving period, and return to Canada for the remainder of the summer.

Fall Migration

In the fall the herd swings south toward the wintering grounds, with rut taking place en route. Passes to the east receive the bulk of movement (Fig. 5). However, passes west of the Kongakut-Sheenjek are often used by bulls in late summer before the rut. These bulls must move a considerable distance to the east through the mountains to participate in breeding activities.

In the autum of 1956 and 1958, large numbers of caribou crossed the Brooks Range from the Sagavanirktok River to the north fork of the Chandalar River to winter in the Big Lake-Chandalar area (Olson, 1957 and 1959). Deep trails in the tundra along the upper drainages of the Sagavanirktok are still evident even though major movements have not been recorded there since 1958. There are also many naturally shed bull caribou antlers scattered along the upper Ivishak, Saviukviayak and Sagavanirktok Rivers, indicating that caribou remained in this area until after the rut.

Areas destroyed by summer forest fires may influence the autumn movements of caribou. Newly burned areas are usually avoided. In 1950 a forest fire engulfed a portion of the winter range between the Bell, Eagle and Porcupine Rivers. Only a few caribou moved into this area the following winter—most of the animals wintered north of the Porcupine River (Soper, 1951; McEwan, 1952).

The fall schedule is fairly regular, with the first caribou reaching Old Crow and McDougall Pass in early September. Movement continues through October.

Mr. MELCHER. The gentleman from New Mexico.

Mr. RUNNELS. Mr. Chairman, with your permission, we have gotten into the caribou situation and I notice you are a commercial dairyman; is that correct?

Mr. SMITH. At the moment, and I have been in the soy beans, but I am a commercial dairyman in Pennsylvania for several years. Yes, sir.

Mr. RUNNELS. What I am trying to say is: I don't know the habits of the caribou. How would the construction of this pipeline in your opinion and what you are basing your facts on—how would this stop the migration of the caribou?

Mr. SMITH. It would act as a wall.

Mr. RUNNELS. How would it act as a wall?

Mr. SMITH. It would either be too high for them to jump or unable to get under it or turned away from it.

Mr. RUNNELS. I thought you said they would have to haul in great amounts of gravel or something. How do you think we will build this along that area?

Has it been stated as to whether it will be up on columns, or buried or on top of the ground?

Mr. SMITH. It will vary from one stretch of the pipeline to another.

Mr. RUNNELS. And what different variances—do you know how many miles will be buried and how many miles will be on the surface?

Mr. SMITH. I don't think they know themselves. They have to work out the detail plans still.

Mr. RUNNELS. Could you tell me how caribou migrate?

Do they all go in a wall facing an enemy or do like your cows and follow a trail?

Mr. SMITH. They migrate in herds.

Mr. RUNNELS. How do you think they would move in a herd?

Do they have trails such as a deer or cow?

Mr. SMITH. This is pretty open country. You are getting me into details which, Congressman, I should not undertake to answer in detail. I am not familiar with the details.

Mr. RUNNELS. Everybody seems to be worrying about the migration of the caribou. I am trying to see if we can get the answers to do this.

Mr. SMITH. Those questions as Congressman Young suggests—you can get some of your answers from the game authority of the State of Alaska. You can get others from specialists and wildlife management. We will be glad to try to answer those questions or to obtain expert answers.

Mr. RUNNELS. The reason I was asking you is in your statement you said that the Canadian pipeline would not affect them as much as the Alaskan pipeline.

Mr. SMITH. Yes, I said it and I will say it again.

Mr. RUNNELS. I want to know what you based it upon.

Mr. SMITH. Well, Congressman, the elements of the thing are fairly clear. And with all due respect, I thought I indicated to you that the Valdez line cuts across the migration.

It is our understanding—but for the most part the route over Mackenzie would not do to or equivalent migrations.

We are expressing a concern for the ecosystem of the North Slope because of the fact that our modern knowledge of damage to the ecosystem generally indicates that they are inevitably things which damage people, damage society, damage the economics of the situation.

It is not a sentimental matter. So that the possibility of a serious disruption of the wild game of the North Slope is a serious matter, along with a half dozen other reasons.

This one, frankly, in comparison with the almost complete impossibility of dealing with the earthquake hazard, I would rate the earthquake hazard as more important and also the problems of oil pollution down on the coast and down through the navigation down the Canadian coast and down our own coast as probably more serious.

Mr. RUNNELS. Thank you, Mr. Chairman.

Mr. MELCHER. Thank you very much, Mr. Smith.

We appreciate your appearance here today and very much appreciate the views you represent.

Mr. SMITH. Thank you.

Mr. MELCHER. Our next and last witness for today will be George Alderson, legislative director of Friends of the Earth.

Mr. Alderson, we are glad to have you here today. You may proceed.

STATEMENT OF GEORGE ALDERSON, LEGISLATIVE DIRECTOR; FRIENDS OF THE EARTH

Mr. ALDERSON. Thank you, Mr. Chairman. If my statement will be included in the record, I will touch on the main points.

Mr. MELCHER. Without objection, Mr. Alderson's statement will be placed in the record at this point.

You may proceed.

Mr. ALDERSON. I am George Alderson, legislative director of Friends of the Earth, a national organization of 20,000 members, committed to the preservation, restoration and more rational use of the Earth.

Our Washington office is at 620 C Street, S.E. We also have ties with sister organizations in several other countries, with which we cooperate, working on shared objectives internationally.

In Alaska, Friends of the Earth has a staff representative, James Kowalsky, based in Fairbanks, who works in cooperation with many citizen groups and public officials, on Alaska pipeline matters as well as many other environmental issues that concern the people of Alaska.

Our president, David Brower, was previously involved in Alaska conservation in the successful campaign for establishment of the Arctic National Wildlife Range. At this point I would like to request an article by James Kowalsky concerning environmental problems of the pipeline be included.

Mr. MELCHER. Without objection, the article will be made part of the record at this point.

Mr. YOUNG. Mr. Chairman, maybe I will object. I hope he brings his qualifications with him with the letter, please.

I know Mr. Kowalsky, but I would like to know what his qualifications and his position are and what he is doing in Fairbanks, because I think it is important for the record.

Mr. MELCHER. Mr. Alderson, could you include with the article a listing of Mr. Kowalsky's qualifications and background?

Mr. ALDERSON. All right. That will take me a little longer because I will have to query him.

Mr. MELCHER. Mr. Alderson, is the article that you referred to, something that was prepared for the committee or is it a newspaper article?

Mr. ALDERSON. It is an article from our newspaper which goes to our members.

Mr. MELCHER. Our committee rules provide that unless it has been prepared for the committee, we will put it in the committee files to be available and it will not be part of the hearing record.

Mr. ALDERSON. Certainly. The reason I asked permission to submit it was that my statement here does not go into the detailed problems of the pipeline, and this article does. But I will submit it for the file if that is what you prefer.

The objectives of Friends of the Earth with respect to the transportation of North Slope oil were stated by John Dienelt in his statement to the committee on May 17. We are not opposed to well-planned development of North Slope oil and gas.

Our original preference was to delay exploitation of the oil until more fail-safe extraction and transportation had been developed. However, we now accept the reality that the oil and gas will be brought to market in a short period of time.

We therefore are devoting our efforts to help arrive at the safest possible method of transportation and the best route, using presently available technology.

This is an effort which we make in good faith, both in the litigation (together with the Wilderness Society and Environmental Defense Fund) and before the Congress. We are seeking to place the pipeline decision before an unbiased forum, with adequate information on the trans-Alaska pipeline and on the most promising alternatives.

Consideration of the issue by the Congress gives us new hope that a rational decision can be made, free from the entangling commitments the Interior Department has entered ever since the pipeline was proposed in 1969. The officials of the White House told us in 1969 and 1970 that there would be a trans-Alaska pipeline. They told us then of the rigorous standards that would be imposed on the pipeline to protect the land. They told us that there would be little danger of earthquakes because this was such an excellent pipeline.

Last Thursday, at a meeting at the Interior Building, Deputy Under Secretary Jared Carter made the same claims about the safety of the pipeline that we were hearing 4 years ago, plus some new ones. The Interior Department has been saying the same things for so long that it's simply unrealistic to expect an unbiased decision.

The Department has also failed the Nation by cavalierly dismissing the most promising alternative—to transport the oil across Canada to the Midwest. They did not get the data that are available, and they did not even analyze what they had.

For example, Volume I of the Interior Department's "Economic and Security Analysis" stated:

"Data does not exist to definitely state the relative efficiencies of TAPS and Mackenzie Valley pipeline system."

And in a glaring lapse, Interior did not analyze the advantages of a combined trans-Canada oil and gas corridor as opposed to separate trans-Alaskan oil and trans-Canada gas-lines.

Recent news of a proposed trans-Alaska gasline should not mislead the committee. El Paso Natural Gas Company only last week began a study of this concept. By contrast the Canadian gasline project is much further along, and the Canadian line has been assumed by the Interior Department in its planning of North Slope operations.

The administration also makes sweeping statements about the difficulties of reaching an agreement with the Canadian Government. Yet, they have never even convened a negotiating session through diplomatic channels to explore the possibilities.

All they have to go on are unofficial meetings with Secretary Morton, who clearly opposes any Canadian oil line.

The only impression the Canadians can have received is that our Government is absolutely opposed to a trans-Canada pipeline; is it any wonder that nothing has been worked out?

The administration's basic rationale for the trans-Alaska pipeline is haste, that it would be built sooner than a trans-Canada route. However, we suspect that the haste to build the pipeline is due not to national security, but to the oil companies' eagerness

to start making money off the North Slope oil by selling it to Japan. Let us recall that the administration opposes an embargo on export of Alaskan oil.

Dr. S. David Freeman advised Secretary Morton in May 1972, that a trans-Canada route "would materially strengthen our national security as compared with the trans-Alaskan alternative."

Apparently the siren call of the oilmen has overcome the advice of some of the government's own experts on national security, economics, and ecology, who have suggested that a trans-Canada route to the Midwest would be superior. So what did we get? Just what the oilmen wanted.

Proposed legislation: We urge the committee to write legislation that would do three things: (1) Reserve the final decision to the Congress. Thus an act of Congress would be required for authorization of either a trans-Alaska pipeline or trans-Canada transportation of the oil; (2) provide for 9-month final environmental and feasibility study of trans-Canada routes, sufficient to enable us to reach a wise decision; (3) provide for negotiations with Canada, through proper diplomatic channels, toward a Canadian oil route to the Midwest.

The Ruppe Bill contains most of these provisions, and so do other bills before the committee.

I will only touch slightly on the right-of-way provisions.

Aside from the Alaska pipeline question, there are serious issues involved in the right-of-way provisions before the committee. When advocates of the trans-Alaska pipeline say they need quick action on these right-of-way bills, they do not tell the committee that they could have come here 3 years ago with these same proposals.

It was in April, 1970, that the U.S. District Court issued a preliminary injunction against the trans-Alaska pipeline, based partly on the fact that the Interior Department was planning to allow a wider right-of-way than the Mineral Leasing Act permitted. The decision by the court of appeals on February 9, 1973, in effect confirmed the decision of 3 years ago.

Friends of the Earth supports a reconsideration of the right-of-way laws. However, we cannot support any of the right-of-way bills that give a wholesale grant of authority to the Secretary.

There are three basic reasons for this: (1) These are not reform bills, but giveaway bills that play into the hands of private interests; (2) these bills give to the executive branch too much authority that rightly belongs to the Congress; (3) the information on which legislation should be based is simply not available yet, either in testimony or in written form.

Until more information is available, the committee is legislating in the dark. Only inadequate justification has been offered in support of hasty action on these bills, either by the Interior Department or by the sponsors.

Let us first consider the existing 92 rights-of-way for pipelines, mentioned prominently by the Interior Department. These rights-of-way are largely not challengeable now, even if someone wished to challenge them and they proved to be in violation of the 50-foot limitation.

Under the legal principle of laches, you lose the opportunity to sue after a certain length of time. If some of these 92 pipelines proved to be recent ones, a grandfather provision could easily be enacted, to which we would not object.

Nowhere has the Department documented any pending right-of-way applications—except the trans-Alaska pipeline. If there are other applications for which these laws are needed, the committee should be able to consider the information on them, such as (1) how much land do they need? (2) When is construction to begin? (3) Where are they, and who is building them?

Based on the information the Department has submitted, there is no reason for haste on these bills. And there is every reason for more careful deliberation, because these measures will have a profound impact upon the public lands for decades to come. They will affect all the public uses of the land, from grazing to watershed protective, and they will touch the lives of millions of American citizens.

We need to consider the impact of these bills on the public lands. This is another area where the information is not available. The Department has made no effort to provide the hard facts on any aspect of the impact of rights-of-way. How will the other land uses be affected by the proposed bills? Are there alternative approaches that would cause less conflict?

There are three ways to get this information: (1) By obtaining testimony from people in the agencies who have the day-to-day responsibility of administering present right-of-way laws; (2) from an environmental impact statement, which the Department is still only drafting on these measures; and (3) from citizens who have on-the-ground experience with right-of-way problems.

We urge the committee to seek out these sources of information for rights-of-way, and to direct the Department to prepare more thoughtful, detailed proposals.

Executive authority: The Congress has had the key role in curtailing the abuse of the public lands. The Multiple Use Act, the many national park laws, the Wilderness Act—these are measures designed to assert the decisionmaking power of Congress, setting limits on what the executive branch can do with our national lands.

These right-of-way bills would do just the opposite, giving all the power to the executive branch.

That is the last thing the Congress should do especially now that the executive branch is arrogating to itself so many other powers. Congress must hang onto the power it has, and use it wisely. As practical conservationists, Friends of the Earth know that moneyed special interest groups can far more easily influence a Secretary of the Interior than they can influence the Congress.

It would be unwise to give the Secretary of the Interior a blank check on the public lands. If interpreted as loosely as the 50-foot limit was, these bills could lead to the biggest land-grab in our history.

Rather than give all the power to the Secretary, let us examine what is really needed. The existing limits are 50 feet for pipelines,

200 feet for railroads, 100 feet for canals, and 400 feet for electric powerlines. If these are not enough, then what is enough?

We do not defend the present limits, but we suggest that before legislating on this subject, it would be good to know just what the specific inadequacies are. Legislation can surely be written that will provide for modern pipeline technology, and other forms of transportation, without abolishing all limits on the Secretary's authority.

These measures give the right-of-way applicant a crucial advantage over the broader public interest. Under the administration bill, he can obtain a percent for a right-of-way of any width, without any requirement of a public hearing or legal notice of any kind. Thus, all the negotiations can be carried out between the applicant and the Government, with other land users being left completely in the dark until the bulldozers arrive. This is government by smoke-filled room, not democracy. It is a procedure that lends itself to abuse by those who aim to make a quick buck off the public lands.

The exploiters are ingenious at using any loophole in the land-laws as a way of gaining control of public lands. Let's not give them a new opening, as these bills would do.

Friends of the Earth urges the committee to get the facts that are so clearly needed. The Interior Department has much information that should be considered here. Further hearings are needed, both in Washington and in the regions most affected, to bring facts to light. Then it will be possible to design legislation that will do the job best, with the least impact on the public lands.

Thank you, Mr. Chairman.

Mr. WON PAT. Thank you, Mr. Alderson.

I think your statement has been pretty forthright, considering your views.

I am sure the committee will take into consideration all the points you make in considering the bill.

Mr. YOUNG. I am interested in David Brower, who I know very well, would like to establish the right-of-way rights of the caribou in the grange. Was very instrumental in obtaining that grange and I am inclined to think we might have something in agreement on that porcupine herd.

Are you affiliated with the Canadian Friends of the Earth? Do you have a Canadian branch?

Mr. ALDERSON. There is no Canadian sister group of Friends of the Earth at this time.

We have members of Friends of the Earth, United States, that are in Canada, but as yet there is no Canadian sister group.

Mr. YOUNG. Canadian Sierra Club?

Mr. ALDERSON. I can't testify to that. I think the Sierra Club will have a witness.

Mr. YOUNG. I brought this up on the other day and I respect your feeling on this. I disagree with it, but I respect it.

I asked the gentleman, the man that you referred to the other day, if he could assure me that if the trans-Alaskan route was found more feasible and Congress so directed that a pipeline be there, would there be any litigation in Canada, because we keep getting back to the time frame?

Mr. Udall said there wouldn't be any problem. But how can we be assured that U.S. citizens that just because we pass a law that there won't be further stalemates and time delays on the Canadian route?

Mr. ALDERSON. Mr. Young, we value your concern. The best testimony on that was before the Senate Committee, where Richard Passmore represented the Canadian Wildlife Federation.

He apparently has not testified over here, but his testimony indicated that the Canadian Wildlife Federation had looked seriously into the legal basis they would have to challenge a Canadian pipeline if they desired to do so.

They were unable to find a law, according to his testimony, which such a suit could be based on.

The main burden of his testimony was that they considered the trans-Canadian route to be environmentally superior to the trans-Alaska route. The Canadians have a serious concern about the coastal shipping leg.

Mr. YOUNG. I read his testimony before his group in January. He is wearing two hats. He is also interested in the financial replacement of oil at Cherry Point by Alaskan oil.

He states right in his testimony: this is a financial gain for Canada if we don't ship the oil down to the west coast because we can still use Canadian oil on Cherry Point.

It is really interesting to read this. In that same testimony he mentioned the fact that possibly we may not get the oil line to Canada but we can use it as a trump card and make sure the oil companies have their Alaskan oil 200 miles off the west coast and have it shipped to San Francisco and Los Angeles.

It was just interesting to me to have somebody—because we are going to use the club as a gasline to make sure the oil is off the west coast.

I wish he would be one or the other.

That is all.

Mr. ALDERSON. Maybe it would be helpful to the committee if you invited him to testify down here. This might be very productive. Certainly any representative of an environmental group, his as well as ours in this country, is going to address not only the environmental topics but the economic angles, so I wouldn't be surprised if his reference to Cherry Point was very much analogous to our reference to national security. We are attempting to bring other factors to the attention of these bodies.

Mr. YOUNG. He is selling the trans-Canadian route on environmental issues.

Anyway, one other question: Of course, you state there probably won't be litigation and I hope there won't be.

If we did have a finding by a nonpartisan group, and they said the trans-Alaskan line was the most environmentally sound your group will accept that finding?

Mr. ALDERSON. Well, Mr. Young, the finding of the study would then go to Congress. We would want to reserve our judgment on the results of the study, because if the study turns out to have omitted some things we would like to bring those to the attention of Congress. But the decision of Congress would be something we would accept, because this is where we are placing our faith.

Mr. YOUNG. Certainly, you would accept it if Congress passed it, but it isn't too easy.

Would you lobby for or against it?

Mr. ALDERSON. We would have to see the study.

Mr. YOUNG. The results aren't exactly as you think they would be, then you would oppose a finding through a lobby?

Mr. ALDERSON. You are putting words in my mouth, Mr. Young. In the same way, you wouldn't want to commit yourself to the results of some study that was just being authorized.

People could ask you, "Will you commit yourself to supporting a trans-Canadian pipeline if a study came out for the trans-Canadia line?" I think both of us, have to look at the results of these studies and see if the merits——

Mr. YOUNG. But you are selling an idea with a time frame but I am not because I know my time frame and you are telling the Congress if you have this study group and if we pass this bill, or whatever may be, then we will have a pipeline a certain date if it goes through Canada.

What I am trying to get across to the witnesses and this group is, you can not say that because you are dealing with unknowns.

There is no way, if you disagreed with it you wouldn't again try to see that the bill was defeated in Congress, again we would be delayed again just because you don't agree with it.

You can't tell this committee or Congress that if we go to this ahead of study we are dealing with 14 months.

Udall refers to 14 months. That is when it gets to the floor of Congress possibly, then we have the battle politically.

I am looking at the time frame.

Mr. ALDERSON. Mr. Young, some of the bills provide for an action-forcing mechanism in the congressional consideration of it, so you have procedures to bring it to the floor in an expeditious manner. Everybody pretty well recognizes that when you get the bill to the floor, you have pretty well used up your time.

I also doubt seriously that our chances would be very great in opposing a trans-Alaska line if the study came out in favor of the trans-Alaska line, on the grounds that we have discussed.

The main reason that we are before Congress now, and that we hope that members of Congress are taking our concern seriously, is because of the one-sided nature of the Interior Department's consideration and because of the gaps in their work.

I think those gaps would clearly be filled by the time this final feasibility study was completed.

Mr. YOUNG. Again I respect you gentlemen, although I may disagree.

I think you have done a good job.

Thank you, Mr. Chairman.

Mr. WON PAT. Thank you, Mr. Alderson, for appearing before the committee and presenting the views of your organization.

Mr. ALDERSON. Thank you.

Mr. WON PAT. The committee will now recess and resume tomorrow at the same time.

[Whereupon at 12:05 p.m., the committee adjourned until May 22, 1973, at 10 a.m.]

OIL AND NATURAL GAS PIPELINE RIGHTS-OF-WAY

PART II

TUESDAY, MAY 22, 1973

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC LANDS
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:10 a.m. in room B374, Rayburn House Office Building, the Honorable John Melcher, presiding.

Mr. MELCHER. The committee will come to order.

This morning, we will continue hearings on the right-of-way bills on public lands, and our first witness this morning is Mr. Karl S. Landstrom, attorney at law, Arlington, Va.

You will notice that Mr. Landstrom has a broad background in public lands work.

Mr. Landstrom, we are very glad to have you here before the committee.

STATEMENT OF KARL S. LANDSTROM, ESQ., ATTORNEY AT LAW, ARLINGTON, VA.

Mr. LANDSTROM. Mr. Chairman and members of the committee:

I am Karl S. Landstrom. I am a former Director of the Bureau of Land Management and former consultant to this committee on public lands, mines, and mining.

I am a member of the bar of Virginia and the District of Columbia and a member of the Public Lands Committee and the Environmental Quality Committee of the Section of Natural Resources of the American Bar Association.

As a friend of this committee, I should like to offer certain suggestions which I hope may aid in resolving the pipeline controversy which, with other things, has made our newest State of Alaska into the "Embattled Frontier."

My inclination, based on observation of the controversy over a number of years, was to urge selection of a possible pipeline route through Canada.

I am concerned over the danger from possible earthquakes near the southern terminal of the trans-Alaska route and from possible oil spillage during ocean transport, among other problems that may arise from that route.

However, I am impressed by the administration's showings that a trans-Canada route is infeasible at the present time, that the trans-Alaska route is reasonably compatible with environmental objections, and that national energy requirements are such that construction of the line should begin at the earliest possible time.

Another inclination of mine, having worked diligently for over 20 years toward public land law reform, was to urge consideration of comprehensive revision of the Mineral Leasing Act, H.R. 5442, and of comprehensive management authority for the national resource lands, H.R. 5441, rather than consideration only of the pipeline right-of-way problem. I am sorry the committee is delaying its consideration of general reform.

A reform such as abolishing noncompetitive oil and gas leasing where competitive interest exists has been past due for at least 15 years.

But if there is a real emergency requiring piecemeal solution of the pipeline problem I would not object to some further delay in the general reform.

If the committee wishes to go directly to the precise matter at hand, the only secure way of receiving it without running the risk of up to 2 years more of litigation and delay would be to draft and recommend enactment of legislation making a direct statutory grant of the right-of-way to the applicant without the necessity of additional administrative action.

Testimony has already been received by the subcommittee indicating rather clearly that, if the Congress merely authorizes the Secretary to grant a right-of-way under revised boundary restrictions, a delay of 2 years or more may be encountered while actions for judicial review of the environmental impact statement, other procedural aspects, or even discretionary aspects of the proposed grant are being decided.

I include discretionary aspects in this statement because my experience is that some attorneys and many laymen do not understand the doctrine of finality of administrative action resting upon agency discretion which is expressly stated in the Administrative Procedure Act and is otherwise established by judicial decisions. And it takes a number of years before final judicial action may be obtained declaring that a matter is exempt from judicial action, as shown by a case such as *Ferry* v. *Udall*.

There are many other aspects of public land law that I could mention and wish to support for the committee at the appropriate time.

I would like to add at that point, Mr. Chairman, that case I cite was decided by the U.S. Court of Appeals for the Ninth Circuit, September 9, 1964, at 336 Fed 2d 706, and certiorari was denied May 3, 1965, 381 U.S. Reports 1449.

In that particular case which illustrates the problem of time delay, the final administrative action by the Department of Interior in one of the two actions filed in the decision was taken on June 8, 1962, and certiorari and judicial review was denied finally May 3, 1965, so the total time was 2 years and 11 months after the final administrative action before final court action was completed.

It has been suggested that the committee might avoid this problem by directing the Secretary to grant the right-of-way as well as authorizing him to do so. But even if the Secretary is both authorized and directed to grant the right-of-way along a specified route, and even if this should be accompanied by waiver of proceedings under the National Environmental Policy Act, an action for judicial review could still be brought. And such an action might require up to 2 years or more for final judicial determination, of the validity of such administrative actions as were required, or of the question whether such an action seeking judicial review could validly have been brought.

Of the several pending bills, only H.R. 6756 approaches the concept of a direct statutory authorization. It stops short of a direct statutory grant, however, by including authorization for the Secretary to perform various functions. The bill attempts, but in my opinion fails, to free those functions from possible judicial review on the basis of alleged noncompliance with NEPA or other grounds. All of the other proposals that I have seen leave the Secretary's decisions or actions open to challenge by means of judicial review.

So my suggestion is that the Congress carefully consider "reassert its constitutional powers" and acting directly, somewhat along lines followed in the statutory taking of lands within Redwood National Park. True, this is a large order. The bill would have to incorporate all of the detailed provisions—environmental stipulations, fees, and charges, et cetera. But this is a major national issue, well deserving full and detailed legislative action.

If there is a real emergency, my suggestion deserves your close consideration. If there is no real emergency, then the committee should return to first things first.

Let it proceed with general public land and reform, and a pipeline solution will follow in due course.

Thank you, Mr. Chairman.

Mr. MELCHER. Thank you very much, Mr. Landstrom.

You state very concisely and very directly your beliefs and your recommendations.

I appreciate it very much, and particularly in view of your experience and background with the Bureau of Land Management.

I think your testimony is particularly helpful to the committee.

The gentleman from Arizona.

Mr. UDALL. I have no questions.

Mr. Landstrom is well informed, as you state, and has a broad background and I am always grateful when he comes here and gives us his counsel.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. No questions at this time, Mr. Chairman.

I thank the gentleman for his testimony.

Mr. MELCHER. At this time we will be pleased to hear from Mr. Alexander Nyman. He is a professional consulting engineer. We are pleased to have you make an effort to come here and make your engineering expertise available.

Proceed, Mr. Nyman.

We welcome you.

STATEMENT OF ALEXANDER NYMAN, M.SC., CONSULTING PROFESSIONAL ENGINEER, DOVER, MASS.

Mr. NYMAN. Thank you, Mr. Chairman.

This testimony is intended to inform the subcommittee of an alternative to the trans-Alaska pipeline which is estimated to cost less than one-third of the oil pipe; meet all the legal requirements; and provide ecological safeguards not included as yet in these legalized measures.

Stated briefly: the oil companies and government agencies concerned with the growing demand for energy have exercised tremendous effort to use the well established pipe technology to meet the very difficult ecological problems of the undeveloped Arctic areas.

There is a prolonged conflict with private citizen organizations, concerned with the preservation of natural ecology in Alaska, with its wonderful scenic and biological resources.

What I am proposing is that this conflict can be terminated, by drawing the attention of the Public Lands Subcommittee from the legal approach to a technical approach, based on modern technology which substitutes for the oil pipe, a different transport system—the conveyor, which has also a technical background of more than 100 years of successful operation in certain fields of transport.

The most important reason for such an alternative is the possibility of very extensive oil spillage with oil pipes due to earthquakes or marine disasters.

Mr. Merton's report, based on a very thorough and conscientious study, has led to the conclusion that in spite of possible, very severe earthquake danger (called Richter 7) and the danger to Canadian

and U.S. coastal areas of possible marine disaster, the cost per mile is so high that the longer Canadian route, though safer, is too expensive and has all the other ecological difficulties.

Thus, it is a kind of wishful thinking extends to the supposition that severe earthquake may not happen for a long time and that the resulting damage will not be too ruinous. This is the wrong supposition, which I propose to deny most vigorously. I propose also to outline a method of transport of oil, as well as of gas and other mineral resources, which minimizes the destruction caused by earthquakes and marine disasters, and promises to be economically very considerably less burdensome than oil pipe.

It may be difficult to accept the idea that, although the oil and the gas pipe have been so universally and financially successful, another system of transport, based on 20th century technical advances, may be more viable. I am speaking of a conveyor system in a modern form: relatively small loads of a few tons attached at short intervals to a continuous transport cable, working day and night under automatic control, supervised and maintained by skilled technical personnel.

It gives to all the wishful thinkers a practical solution, and should change the legal battle into an earnest effort to study, design, and build this alternative, which will carry all the oil and gas that the North Slope can produce.

Now, about the earthquakes: "National Parks and Conservation Magazine," for November 1971, has a detailed and illustrated description of an earthquake that took place in Montana, 15 miles west of the Yellowstone National Park in August 17, 1959. It was scientifically defined as Richter 7.3. The photographs show, surface vertical drops of over 20 feet, and a valley carrying a large stream and a wide paved highway as completely blocked by several hundred feet of debris from the mountainsides. No 4-foot pipe, full of oil could stand up under the localized strain and shock of the sudden drop of its solid support, neither could it take the crushing burden of huge rocks falling from the mountainside and blocking the flow of oil in the pipe. The resulting hydraulic shock of several miles of flowing oil would burst the pipe even if it were inches thick. Then, long before the automated pipe gates could stop the oil flow, it would spill millions of gallons of oil. The track of the oil pipe crosses several severe geological faults, some close to the tributaries of Yukon and Copper Rivers. An active volcano in the Wrangel range is within 20 miles of the pipeline near Valdez.

It is pure wishful thinking to assume that such an earthquake will not spread oil over wide areas, and possibly be ignited. A holocaust in the remote inaccessible Alaska area will not be easy to control, witness the small army of spillage fighters in a recent

break of a much smaller pipe in Utah. And the Alaska forest is its major natural resource.

This analysis of the very serious earthquake danger is also the conclusion of the Environmental Defense Fund, based on the studies of U.S. Geological Survey of the aerial photographs by the Army Corps of Engineers.

A statement filed by this Fund in March 1972 with U.S. Court of Appeals for the District of Columbia states:

> The occurrence of large earthquakes is a potentially serious hazard to the integrity of the proposed pipeline. Seismic shaking or surface faulting accompanying large shock could rupture the pipeline directly or cause failure in the foundation material that could lead to rupture. Furthermore, large earthquakes could trigger landslides and sea waves that could jeopardize the integrity of the pipeline.

According to the impact statement the southern two-thirds of the route has experienced large earthquakes. Earthquake zones in the southern area show past earthquakes as high as 8.5 on the Richter scale, which would be of major intensity.

> Many addition faults are also postulated,

the statement said,

> particularly in the segments 67 degrees north to Donnelly Dome and Willow Lake to Valdez (area in southern sector). Both of these segments are characterized by the frequent occurrence of sizable earthquakes that have yet to be identified with individual faults.

This is the end of the quotation from the Defense Fund.

Now what can be done to avoid this very hazardous condition?

Considerable technical study has been carried out on a system of transport called Arctran in Canada during the past 2 years. It uses the conveyor principle and is suitable for Arctic transport of oil, gas, mineral resources, timber, and people under most severe climatic conditions.

A "pilot track" to test the validity of the expected performance and economy is being projected as the first and essential step in proving this method of transport. Its present technical status and its anticipated viability for oil transport in Alaska are summarized in the enclosed statements of "Aerocab Designs," dated April 24, 1973, and March 3, 1973.

Its use for bringing natural gas from Canadian Arctic islands is now being studied, as well as several other oil and mineral transports.

As visualized the eventual possibilities of this type of transport in Alaska would permit a very inconspicuous three-rail track with a normal 20-foot clearance, installed by helicopters without any roadbed preparation. It is elevated to permit animal migration. An earthquake may interrupt its operation but will limit the oil spillage to a few broken 24-barrel containers.

Normally the sealed containers arriving in Valdez will be transferred, sealed, into tankers designed as ferries. In case of marine disasters, there is , of course, the chance that a few containers may be broken, but the spillage will be confined to a few barrels instead

of flooding the shoreline and annihilating the marine life, including the newly restored "sea otter." And Valdez fisherman will not have to worry about oil spillage in their fishing grounds.

Conveyor transport in sealed containers extended to sea transport provides a very effective protection of shoreline against disastrous pollution. It should be extended to all ocean transport of oil. The tanker should be modified to become a ferry for the sealed oil (or gas) containers. This will involve a full measure of ingenuity of shipbuilding engineers. The American President Lines have the first "container ship" already in operation.

Our shipyards accepting this task will place themselves in the effective role of leaders, just as Japanese shipyards did in supertankers and the French in the tankers for liquefied natural gas.

In conclusion, permit me to reiterate the fact that the very thorough legal approach which this subcommittee has to the question of best land use in Alaska may be helped by the technical approach, which may meet all the difficult problems of future use of Alaska's rich resources by the latest proven methods of modern technology. Our country has led in the practical use of the very complex computer technology, and the very exacting space technology. Your subcommittee has certainly the opportunity to make our great need for energy an occasion to build up our transport technology. Stimulating the new technology of container transport, as presented at "Transpo 72" has led the Department of Transportation to encourage such transport in the Morgantown project. The engineers of the Alden Self-Transit Systems Corp., vitally involved in this project, have examined the ARCTRAN technology. They, as well as numerous engineers in Canadian transport fields have found it feasible from both economical and technical viewpoints.

Your committee could stimulate the Department of Transportation to similar efforts in the field of container transport of hazardous materials.

I will read to you the statements on ARCTRAN which are included in the testimony.

Mr. UDALL. Mr. Nyman, I have read your statement and we have the exhibits attached to it.

Those will all go in the record. I don't believe it will be necessary to read the attachment.

I appreciate your coming before the subcommittee to give us another alternative. This is the first I have heard of this proposal and it is quite interesting.

Do you have any further diagrams or models or pictorial presentations to this other than the little sketch attached?

Mr. NYMAN. I have quite a lot, yes.

I have given a copy to Mr. Melcher with some other things.

[The exhibits attached to Mr. Nyman's statement follows:]

AEROCAB MASS TRANSPORT SYSTEM, GENERAL STATEMENT

ORIGINAL TRANSPORT IDEA FOR CITY TRAFFIC

Inspired by very reliable and safe transport of mountain cableways. AEROCAB I was developed for City commuter service. An overhead track in a rigid framework included constant speed cable drive for evenly spaced

support trolleys. An automatic accelerating and coupling arrangement applied to small (4 passenger cabins) attached the cabins to the cable drive (30 or 40 miles per hour). Station identification tab or key used by the passenger, would release the cabin at the destination and slow it down to the station platform.

APPLICATION FOR NATIONAL PARKS

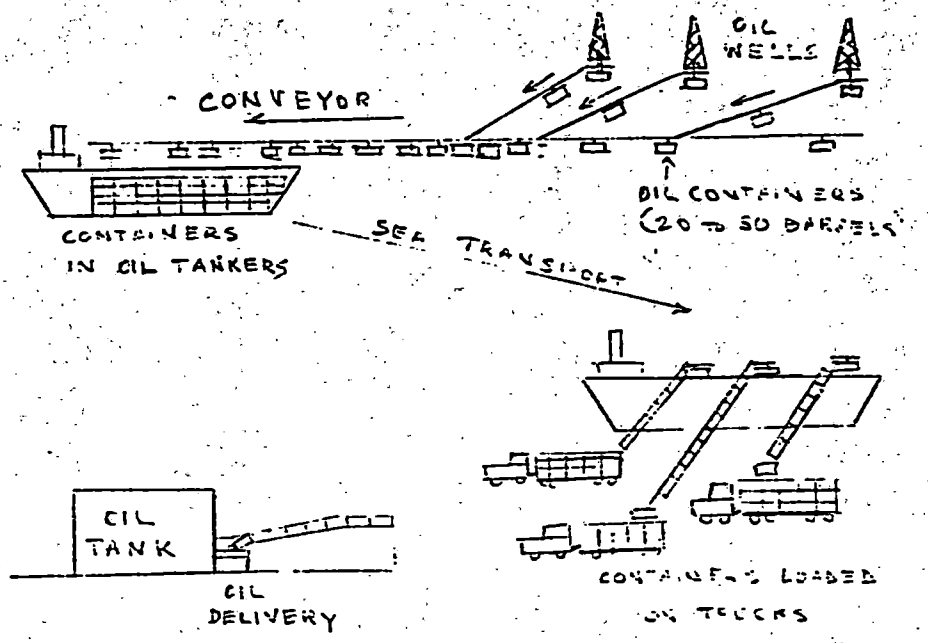
A study of ecological adaptation of this system to the National Parks, to reduce or eliminate automobile traffic resulted in AEROCAB II. A three rail track for two way travel was formed of prefabricated 40 foot sections, with light supporting pylons on each section. Installation on the side of existing roads or cross country, including cliffs and ravines, could be carried out by helicopters *without* any roadbed preparation (except pylon support plates) and no service roads. The visual impact was minimized.

MODIFICATION FOR ARCTIC USE

Transportation of mineral and petroleum products in Arctic and Subarctic areas required modifications for larger load carrying capacity. ARCTRAN system, the combination of suspended AEROCAB III and supported AEROCAB IV, was designed for a maximum of 10,000 tons per hour in 3 ton containers. (this compares with 12,000 passengers per hour of AEROCAB I with 4 passenger cabins). In ARCTRAN system 2 wheeled monorail load cradles are stabilized and propelled by a side cable carrying coupling trolleys. For two way traffic there is one supporting rail in each direction and a double inverted, slotted box rail for the two cables. The track is not electrified. Booster stations at 10 miles intervals provide cable drive power with redundant drive motors. Vertical switching from "supporting" to "suspending" rails avoids trackside machinery.

INHERENT SPECIAL FEATURES OF AEROCAB SYSTEMS

1. In order to carry large passenger or load tranport, the principle of conveyor type transport is used, with small load units travelling at constant speed with fixed small headway. Very light track is possible by providing supporting pylons for short sections, each carrying a single load unit in each direction.
2. The roadbed preparation consists of clearing trees for 10 foot wide travel area, inserting pylon supporting plates at 40 foot spacing and providing drive power stations at about 10 mile spacing.
3. Cable propulsion at constant speed avoids collisions and requires no track electrification.
4. Complete automation with communication links at each booster station, minimizes the operating personnel.



OIL TRANSPORT

Alexander Spiridonov
March 24, 1972

Proposed Alaska Oil Pipe.

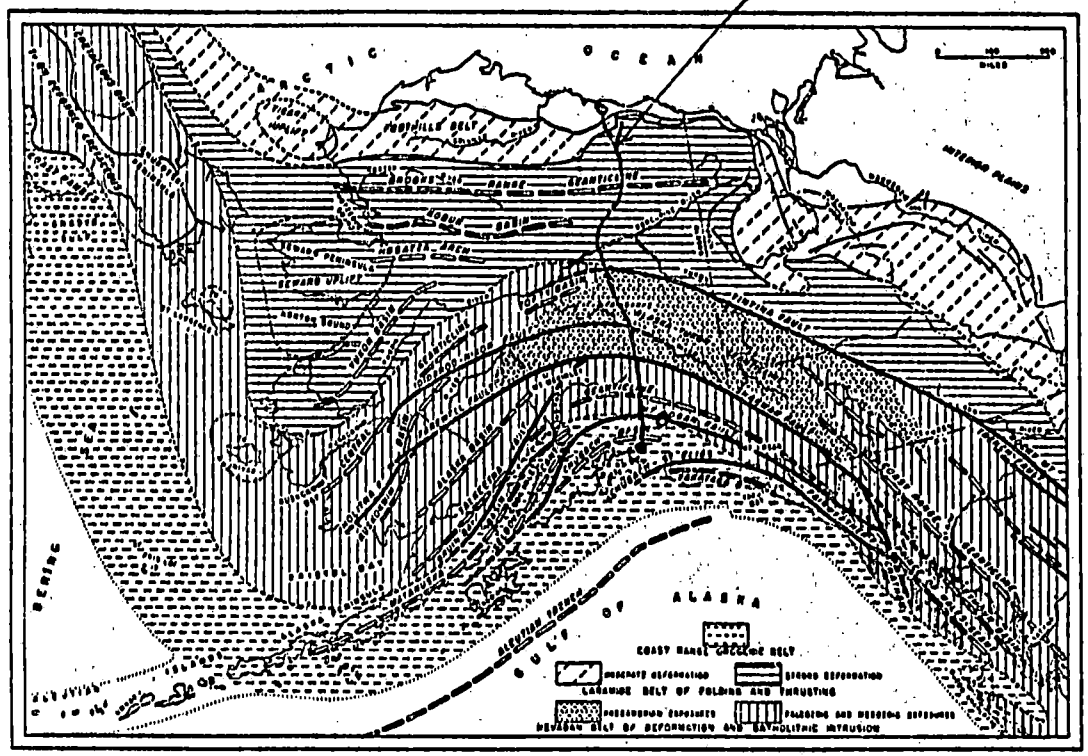
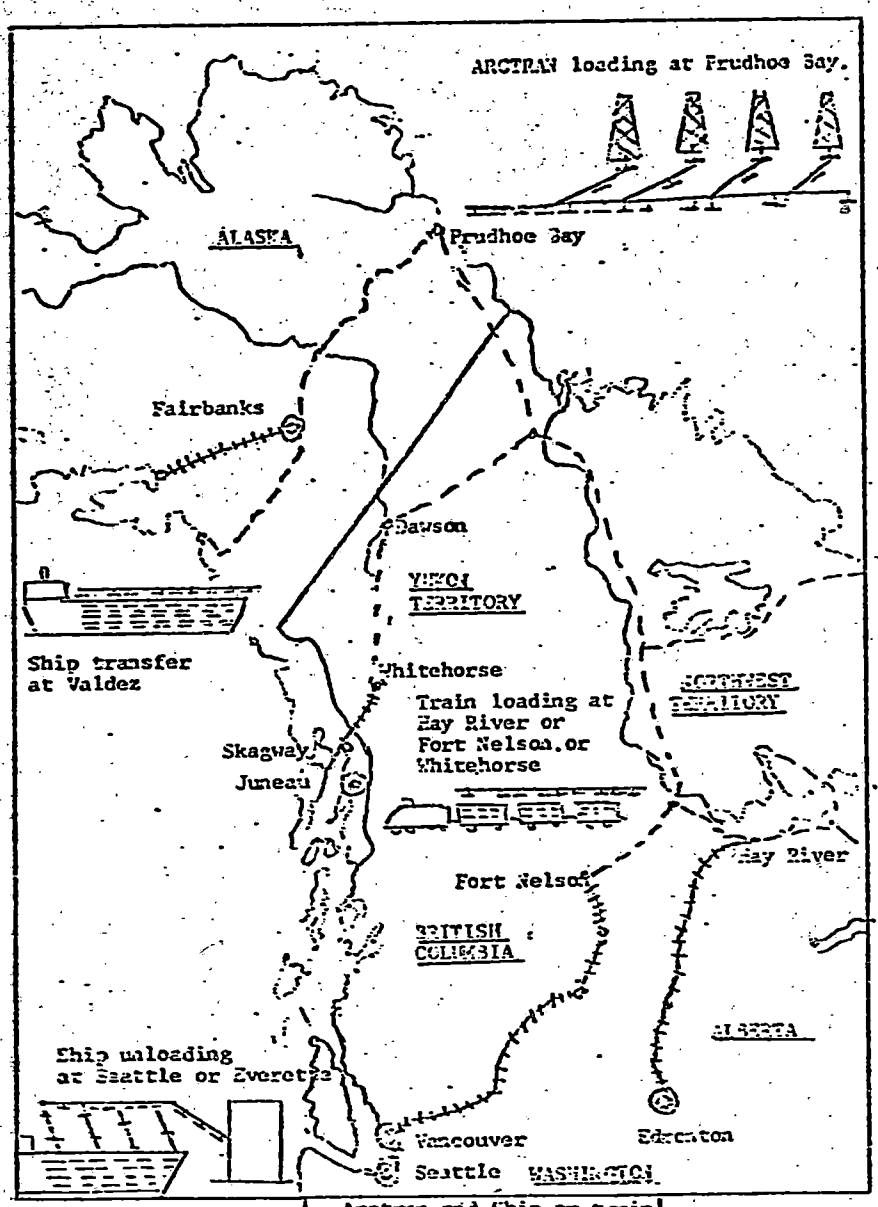
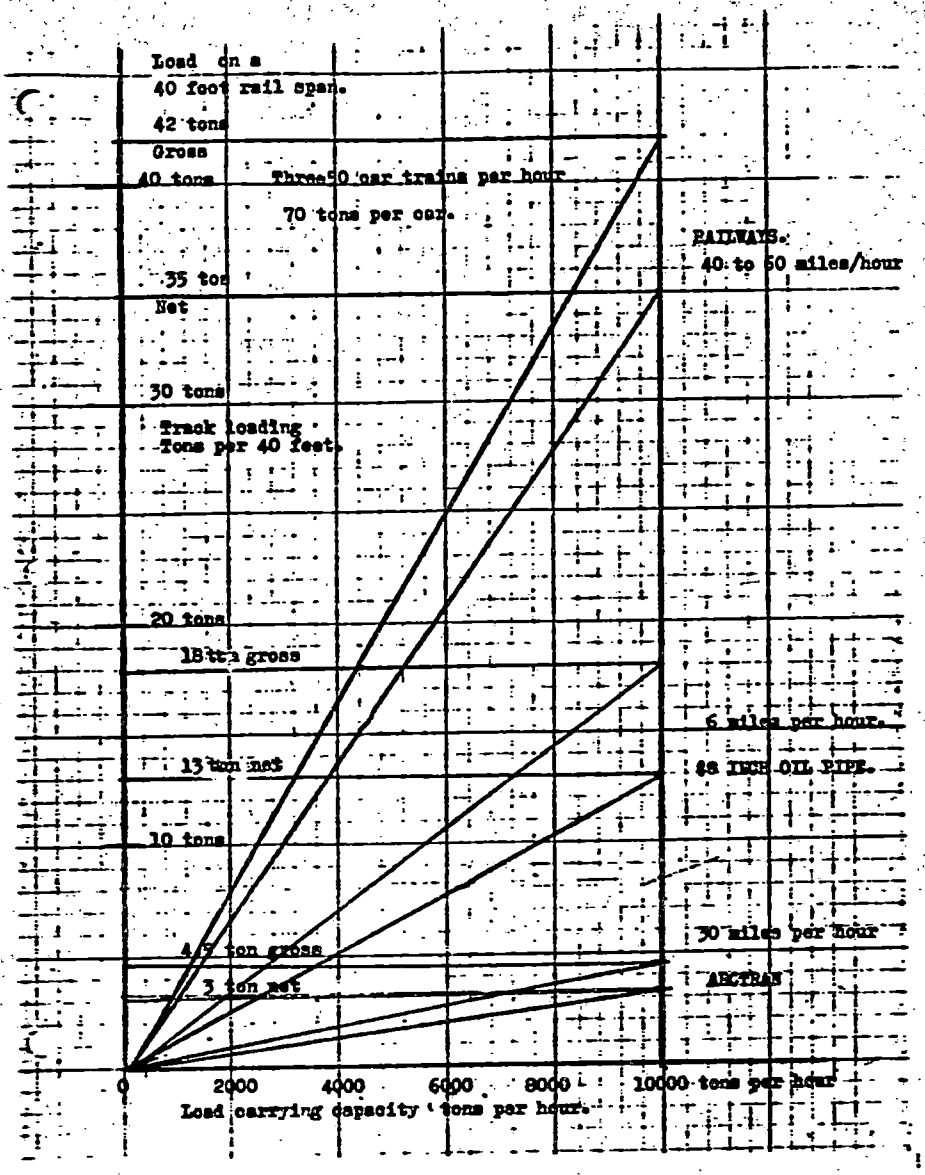


Fig. 39.2. Tectonic map of Alaska and the Yukon Territory. Laramide orogenic belt characterized by folds and thrust faults mostly in shelf and miogeosynclinal sedimentary rocks. The structures of the basins are Late Cretaceous or Early Tertiary; of the geanticlines are partly of Early Cretaceous age or older. Nevadan orogenic belt characterized by numerous batholiths and deformed eugeosynclinal sediments. The intrusions and structures are Early and Late Cretaceous with Early Tertiary structures in the Alaska Range area. Coast Range orogenic belt is marked in part by Tertiary sediments and by folding and thrusting principally during the Late Cenozoic. Interior Tertiary basins not shown.

From: Structural Geology of North America.
By A.J.Eardley. Professor of Geology. University of Utah.



Alexander Ngan
April 14, 1977



Mr. UDALL. One of the arguments we get into here is the question of further delay.

If we adopted your proposal how long would construction take as against construction for a pipe to Valdez.[1]

Mr. NYMAN. The first step would be to build a pilot line and try it out thoroughly before going to long-range construction.

I feel the pilot line could be built before next winter and tried out for a short stretch and see how it stands up and what are the difficulties.

That should provide the time to organize large-scale production which would be needed for the 800 miles of track.

It will also verify the technical conclusions of myself, Canadian engineers, and the others.

See letter dated June 8, 1973, on p. 795.

Canada may build a pilot track like that but there is some hesitation about it for various reasons, most because they want to try for mineral transport rather than oil.

However, a gas transport is being studied now from the long stretch from the Island on the 78th degree parallel quite close to North Brook all the way to Buffalo.

We made some estimates on that and they may introduce some pilot program on that basis.

Mr. UDALL. Do you suppose if we accepted your method and it worked out, would it be in operation sooner than the Alaska pipeline or later?

Mr. NYMAN. How soon do you expect the permit would be given to the pipeline?

Mr. UDALL. It doesn't matter. Let's assume we give you the pipeline and then——

Mr. NYMAN. I would have it in 2 years.

Mr. UDALL. We have had another suggestion for a conventional railroad to move the oil out of the North Slope.

In what way does your proposal differ from the conventional railroad proposals?

What are the advantages on loading the oil on your kind of containers as against the conventional tankers?

Mr. NYMAN. The conventional railroad has been studied in Canada and their estimate was $3.5 billion equivalent to the oil pipe and it would include also quite expensive operation which is connected with the railroad and operation of the roadbed.

My estimate of $650 million on the stretch from Prudhoe Bay to Valdez is considerably lower.

In fact, the oil pipe in that stretch is $2 billion and I am about a third of that.

So that the first advantage will be considerably lower cost, and the second advantage is by being completely operated there is no need for operating personnel.

There is no need for an engine driver or other personnel on the train.

Mr. UDALL. All right, sir.

Mr. Saylor.

Mr. SAYLOR. It is good to see you again, sir. I have read your entire testimony.

I have two questions that bother me with regard to this approach. We have no difficulty at all with the oil itself going into the containers, but you talk about bringing out the gas.

Now, if you are going to bring out gas you have got to liquefy it; is that not correct?

Mr. NYMAN. Yes, sir.

Mr. SAYLOR. Therefore, what your plan must necessitate is a plant at Prudhoe Bay to liquefy the gas?

Mr. NYMAN. Correct.

Mr. SAYLOR. How are you going to get that equipment in? The reason I ask this is because I was in favor a long time ago of telling them to go ahead with the railroad. We know how to build a railroad and we have done it up there, and if you are going to open up

and develop Alaska in any way, shape or form, you can't fly everything in.

Mr. NYMAN. Nope, you are right. The plan I have worked out for this is something we are working at the James Bay development in Canada.

In James Bay, they are trying to set up a series of hydroelectric stations and these hydroelectric stations include, besides the construction material which I could bring very easily on the Arctic Transport System, also very heavy machinery, turbines and generators and so on, for that purpose I am working out multiple base conveyor.

So that in other words each conveyor unit is three tons. By combining six of them, I will have 18 tons. They don't have to be 3 tons. They can be 5 tons. So you can carry much heavier equipment.

The same thing will apply in building of a liquefying station on North Bay. Instead of bringing everything by airplanes or by very difficult ship transport, once the ARCTRAN system is built, it can be used to bring all the construction material needed plus the heavy machinery by this multiple carrier freight.

Mr. SAYLOR. In other words, I don't think the diagram that you have on the last sheet, then, really depicts what you are contemplating.

In other words, you would have a double track north and south?

Mr. NYMAN. That is correct, yes.

For the purpose of bringing heavy material I will reverse, so both tracks are in the same direction and put the platform on the two tracks straddleways.

I have a sketch which I can show to you.

Mr. SAYLOR. Another question that has been raised in my mind, and is a question that has to do with what takes place at Valdez. There are a number of persons who are quite concerned with a tanker in the port of Valdez.

Now, your proposition doesn't touch that except that instead of oil in the skin of the ship you have oil in a container so that you have at least two thicknesses to which the ice or anything else would prevent breakage or seepage into the sea.

Mr. NYMAN. That is correct, sir.

That is correct, because once you put in the sealed container, a solid container will be made out of steel or fiberglass or whatever is most convenient, sealed at the well and stay sealed until you reach the refinery.

Mr. SAYLOR. Well, now, they tell me this crude oil as it comes out is at a fairly high temperature?

Mr. NYMAN. That is right.

Mr. SAYLOR. And one of the reasons they have to keep it at a high temperature is because it tends to solidify?

Mr. NYMAN. That is right.

Mr. SAYLOR. What you are going to do is have a big licorice stick, isn't that what it amounts to?

Mr. NYMAN. It doesn't matter what condition it is in. Once it is there, it can freeze, if it wants to, or melt if the weather is hot.

Naturally, when it comes to the refinery, it will have to come to a fairly warm place and melt off there.

Mr. SAYLOR. It gets a little cold down in California. There is nobody here from California so I guess we can say they have had cold weather there and they might have a little difficulty with thawing out those licorice sticks you bring down.

Mr. NYMAN. That is right.

Mr. SAYLOR. It is a new idea, and I, as a member of the committee, certainly appreciate it.

Mr. UDALL. Mr. Young.

Mr. YOUNG. No questions.

Mr. UDALL. Thank you, Mr. Nyman.

[Subsequent to the hearing a letter dated June 8, 1973, from Mr. Nyman to Chairman Melcher was received with information in answer to Mr. Udall's question.]

[The letter follows:]

ALEXANDER NYMAN, M.Sc.,
Dover, Mass., June 8, 1973.

HON. JOHN MELCHER,
Chairman, Subcommittee on Public Lands, U.S. House of Representatives, Washington, D.C.

DEAR MR. MELCHER: Many thanks for your kind letter of May 30th, and the information about the availability of records of my testimony.

In connection with this testimony, I was asked a very interesting question by Rep. Morris K. Udall, whether the cable system could be built as quickly as a pipeline. In my effort to answer this rather difficult question, a further suggestion by Rep. Udall, was to assume that either system should be started right away, disregarding any pending legal delays.

May I clarify my answer as it will appear in your records? My understanding is that it will take four years to build the pipeline with the material all stacked up in Valdez and Prudhoe Bay. My answer of two years was conditioned on building a short "Pilot track" before next winter and checking thoroughly the specific engineering and operational features of the available ARCTRAN system under the worst Arctic conditions.

The duration of two years which I suggested, would include the preparation of manufacturing facilities, during this period of verification. It must be assumed that sufficient financing will be available to carry rapidly the exacting technical preparations for such manufacturing. Fortunately the material for the load containers would be the existing stacks of the 4 foot pipe to be cut up in 10 foot lengths and capped to make them into containers. That was the initial intent of the ARCTRAN design.

Since the "hearing" I had occasion to check with Aluminum Co. of America about the availability of some 65,000 tons of aluminum, and the extrusion facilities for making the rails. Their answer, was quite reassuring. My cooperation with other manufacturers with regard to Canadian applications of ARCTRAN give me further confidence that engineering talent and manufacturing facilities are available for carrying out all phases of building and installation of the 800 mile track.

Rep. John P. Saylor questioned me on the possibility of transporting heavy machinery to Prudhoe Bay especially for Gas Liquifying plants. In my answer I referred to a similar problem now being tackled for James Bay area in Canada. A design for a multiple load-unit system was mentioned. This design is now being studied by structural engineering expert in Cambridge University in England, who has been associated with me in the development of ARCTRAN and other cable transport arrangements.

It was particularly gratifying to have Rep. Saylor asking questions, which indicated his high engineering background and understanding. Would you, kindly, let me know whether Rep. Saylor or some other member of your committee, may be interested in full technical description of ARCTRAN system as summarized in the last pages of my written presentations?

Please accept my deep appreciation of your cooperation.

Yours sincerely,

ALEXANDER NYMAN.

Our next witness is Mr. William Eich, Chairman of the Wisconsin Public Service Commission.

STATEMENT OF WILLIAM EICH, CHAIRMAN, WISCONSIN PUBLIC SERVICE COMMISSION

Mr. EICH. Mr. Chairman and members of the committee, I want to first thank you for the opportunity to be here this morning to discuss with you some of the merits of a Canadian pipeline from the point of view of a midwesterner.

As Chairman of the Wisconsin Public Service Commission, I am keenly aware of the problems we face this summer in our State and throughout the Midwest in terms of gasoline supply. I am even more keenly aware of potential gas and fuel oil shortages in future winters and summers.

As a result of the recent Supreme Court decision on the trans-Alaska pipeline, your committee is faced with the problem considering various proposals for revising section 28 of the Mineral Leasing Act of 1920 which limits rights-of-way across public lands to 54 feet. It is clear that a decision on any form of right-of-way legislation will affect the authority of the Secretary of the Interior to grant permits for the construction of a pipeline to recover North Slope oil.

The fundamental and overriding question confronting the committee, and Congress itself, therefore, is whether to build an oil pipeline through Alaska or through Canada.

I do not profess to offer you any new insights into the various argumentative or factual points that have been made concerning the overall environmental, political or economic merits of a trans-Canadian, as opposed to a trans-Alaskan pipeline.

If the facts are—as I believe them to be—that the Canadian route would have less potential for environmental harm, greater compatability with future routes for trans-Canadian gas transmission, and could be built for a substantially similar cost—then it seems to me that it would indeed be prudent to pursue this route. The detailed facts, pro and con, on these and other points are best left to others far more informed than I.

For my part, let me begin a little closer to home. Last winter, we in Wisconsin, like many of you, experienced for the first time in recent memory the very real threat that homes, public institutions and various industries would run out of vital energy fuels. Bus service in Wisconsin's largest city came within hours of curtailment for lack of fuel. Many of our largest motor carriers faced serious threats of shutdown due to lack of diesel fuel. Businesses, electric power suppliers, farmers and public institutions, thrown into the fuel oil and propane markets because of unanticipated curtailment of their interruptible natural gas service, found themselves unable to secure these alternate fuels.

We will never know how close we came to experiencing a genuine disaster. We were, to a very large degree, just plain lucky that a winter that was running some 40 percent colder than normal broke in late December to become one of the mildest in many years.

It seems ironic indeed that we had to rely on nature to avert a devastating energy crisis; and the spectre of a real crisis is still very much with us.

Even today, many major fuel suppliers in Wisconsin have cut back on deliveries and allotments. Wisconsin farmers, who will have to plow 75 percent more land than normal this spring because of the heavy late fall rains, are already feeling the pinch.

In a serious fuel or energy crisis, State agencies such as my own may have to bear the terrible burden of establishing priorities—telling the citizens, businesses and institutions of our State just who will get fuel and who won't.

How does a nursing home heating plant stack up with an elementary school when fuel oil must be rationed?

Does a truck delivering food or milk receive higher priority than a police vehicle or fire truck when there is not enough fuel for both?

These are agonizing decisions, and they are similar to the decisions we are making in Wisconsin today as my Commission begins to establish priority lists in anticipation of future shortages of natural gas.

At the direction of Governor Patrick J. Lucey, the Secretary of the Wisconsin Department of Agriculture and I last Friday began a series of hearings, being held throughout the State, to accumulate information on fuel shortages and to enable us to establish guidelines for exercise of statutory powers to relieve fuel shortages within the State.

The fuel situation has begun to receive attention on the Wisconsin legislative front as well.

Just last month, in the wake of growing supply restrictions imposed upon independent gasoline dealers, a joint Senate-assembly committee commenced hearings on a bill that would impose public utility-type regulation on the gas and oil industries doing business in Wisconsin.

Governor Lucey, after implementing strict statewide energy conservation measures, has taken the lead in attempting to mobilize other midwestern Governors—and indeed, Governors across the country—to formulate a coordinated plan to avert serious regional energy shortages.

It is possible, of course, that States such as Wisconsin, which produce no fuel of their own—and have virtually no storage capacity for fuels brought in from other locations—may have a different attitude, a greater sense of urgency, about such matters.

Questions surrounding North Slope oil or development of Canadian tar sands or Arctic gas, may not take on such urgency in the West or the South, but for us in the Midwest they could spell the difference between economic vitality and depression in the decade to come.

With that background in mind, I would like to take just a moment to comment on some of the legislation which are currently before this committee.

Representative Les Aspin of Wisconsin has introduced a bill to allow the granting of a right-of-way for a Canadian pipeline.

Representatives John Anderson of Illinois and Philip Ruppe of Michigan have introduced legislation to allow for the construction

of a pipeline unless major objections are raised by the agencies of the Federal Government within a 6-month period.

These and the other bills open up a significant opportunity for the shipment of some of the vast oil resources of Alaska's North Slope to the Midwest and East, and in so doing they present the additional opportunity for correction of existing regional supply and price imbalances.

As Congressmen Aspin and Anderson indicated in their earlier testimony to this committee, if an Alaskan pipeline is built, with tanker shipment to west cost ports, the supply of oil to that area may exceed demand by 200,000 barrels per day by 1980.

It is anticipated that this excess will be exported, probably to Japan, or else shipped by tanker to the east coast—around Cape Horn—thus adding unnecessary transportation costs to ultimate users.

Both of these alternatives in my view are obviously unacceptable from the standpoint of the millions of consumers in Wisconsin and the rest of the Midwest.

If we are indeed facing an energy crisis—and all sides seem to agree that we are—it would be foolish indeed to allow the export of 200,000 barrels of oil per day to Japan.

Similarly, the transfer of this oil via tanker, whether around South America or via a pipeline across Central America, would be costly—not necessarily to the oil companies who could recoup the expenses through higher prices, but to the tens of millions of consumers in the Midwest and East who would be forced to pay unnecessarily higher prices.

Since every 1-cent increase in the price of gasoline costs consumers $1 billion, it seems to be imperative that we develop a system of oil supplies that would keep prices as low as possible while allowing producers to earn a reasonable return on their investment.

As I indicated a moment ago, Congressman Anderson's sources indicate that if an Alaska pipeline is built, delivering oil to the west coast, a substantial surplus will result in that part of the country by 1980.

A Canadian line would eliminate the projected west coast surplus and require the importation of approximately 19 percent of that region's needs.

The infusion of Alaskan oil into the Midwest could also cure existing discriminatory price differentials. At present, prices in the Midwest are 20 percent higher than those on the west coast. Much of this price differential could be eliminated if a Canadian route were chosen.

Thus, a Canadian route would ease the conditions which presently leave the Midwest at a serious disadvantage; and it would more evenly balance supply and price factors throughout the country.

I understand that questions have arisen about the capability of the Midwest to absorb large quantities of new crude oil for processing. The largest independent headquartered in the State of Wisconsin, the Clark Oil Co., is petitioning the Oil Import Appeals Board for an allocation of 42,000 barrels of crude oil per day to keep its two Illinois refineries running.

According to statistics developed by the American Petroleum Institute for the week ending March 30, 1973, refining capacity of at least 126,000 barrels per day went unused in the East and Midwest because of a lack of crude oil.

At our own hearings on gas shortages in Wisconsin last week, it was testified that large amounts of refinery capacity, primarily that of independents and cooperatives, is indeed going unused in Wisconsin today.

Additional refining capacity in the Midwest and East will be needed, however, if a Canadian pipeline is built; and it seems to me that the major oil companies clearly would be willing to build refineries in the Midwest if it became obvious that a Canadian pipeline would be built.

Once again, Mr. Chairman, members of the committee, I appreciate the opportunity to give you my views on the pipeline controversy. I am not in any way beating the chamber of commerce drum.

I have attempted only to give you some insight into a few Wisconsin concerns—concerns which might be regarded by some as parochial, but which, I assure you, are most sincerely felt by many of us in the Midwest.

Thank you very much.

Mr. MELCHER. Thank you very much, Mr. Eich, for a most reasonable statement.

As chairman for the Wisconsin Public Service Commission do I understand that is an appointed position?

Mr. EICH. Yes, it is. It is appointed by the Governor and confirmed by the State senate.

Mr. MELCHER. Then in your capacity, you would probably be the leading spokesman on this subject for the government and the entire administration of the State of Wisconsin?

Mr. EICH. Presumably, although I must say not necessarily.

Mr. MELCHER. I think I appreciate what you say about bringing the oil through Canada and the pipeline closer to the Midwest and I do not argue with the facts.

But I think it should be made clear to you and to the people in Wisconsin that what we are hearing in testimony at these hearings that there is really not any route established through Canada at all, none proposed be studied and—so far— no indication by the Canadian Government of what their attitude is toward such a proposal. The proposal is further clouded by a point raised by our colleague from Washington, a member of the full committee, Congressman Meeds. Mr. Meeds points out that the claims of the Canadian natives, would probably have to be settled before any route could be agreed upon.

Now, with regard to all of these proposals, of going through Canada as opposed to a trans-Alaskan pipeline leads us to two areas this committee must consider.

One is whether or not such a route would be feasible and sometime be acceptable to the Canadians in view of all their various problems. Second, if so, what is the time frame we are talking about?

Now, your testimony goes to what happened last winter for instance, and the possible fuel shortage for heating next winter.

Well, if the time frame is as important as it seems to be, and as the testimony has continually reiterated during the hearings up until now, then it seems to me the committee has two points to look at in the proposal for a trans-Canadian route: First of all, whether it is possible and whether the Canadian Government wants it; and second, then what time frame are we talking about?

We have had quite a bit of testimony from people in the oil or gas business that say: Yes, thre will be a Canadian, trans-Canadian pipeline, but it should be the trans-Alaskan first, because it is set up and then later on, after all the other things are resolved, the trans-Canadian line can be established.

So I am just taking this time to brief you as a responsible representative of a very significant and important midwest State as to the perspective we have in attempting to formulate here in this committee in writing the legislation comparing the two routes.

Second, you do mention, as others have mentioned, the possible sale of crude oil or gas to Japan.

I would think that it would be the feeling of this committee to prohibit that. I think we feel there is an urgency and if there is one, then we have no business permitting the export of the product that is urgently needed here.

Thank you.

The gentleman from Arizona.

Mr. UDALL. I appreciate your testimony and the contribution you have made to our hearing.

Mr. MELCHER. The gentleman from Pennsylvania.

Mr. SAYLOR. Thank you.

For the record, I think it would be of benefit to us if you and the chairman of the Wisconsin Public Service Commission would give us your background.

Mr. EICH. Yes, sir.

I am a lawyer by profession and a sometime lawyer teacher.

My background is a lawyer——

Mr. SAYLOR. From the University of Wisconsin?

Mr. EICH. From the University of Wisconsin Law School, but also Loyd College, a bachelor degree.

I had been a law clerk for a State supreme court justice and practiced law briefly in Madison.

The bulk of my career has been in Government in various positions in the Wisconsin Attorney General's Office, including that of both assistant attorney general and deputy.

My work in that area largely specialized on environmental matters in the State of federal courts.

Mr. SAYLOR. And as the chairman of the Wisconsin Public Service Commission you were appointed by the Governor and confirmed by the Senate?

Mr. EICH. That's right.

Mr. SAYLOR. For what term of years?

Mr. EICH. For a term of 6 years as an appointment to the Commission.

The post of chairman is designated by the Governor every 2 years as one appointment.

Mr. SAYLOR. The reason I asked that, on page 3 of your statement, you say that the Governor directed you and the Secretary of Agriculture to begin holding hearings throughout the State of Wisconsin to collect information on fuel shortages and to enable you to establish guidelines for the exercise of statutory powers to relieve fuel shortages within the State.

My question, sir, is that in view of the fact that you are not a producing State what kind of statutory powers do you have to relieve a fuel shortage?

Mr. EICH. Why, I am sure that is going to be tested. The statute quite simply gives the Department of Agriculture the authority to act to alleviate fuel shortages within the State.

It is just that broad. As a lawyer I suppose I should have no comment on the overall validity of the statute.

The Governor did call these hearings and directed me to join in them because of our responsibilities for insuring adequate motor and commentary of transportation in the State.

So presumably the same questions will be asked at some point when we begin to make our recommendations to the Governor.

Mr. SAYLOR. I just wanted to say, Mr. Eich, that if the Secretary of Agriculture was authorized to determine certain food supplies in the State, I think you might find some authority because you are a food producing State, but I am a little at a loss to understand how the Secretary of Agriculture is going to take care of your fuel shortages.

Mr. EICH. It is in the same statute, Congressman, that gives him the power over food, and I for my part, I seldom question the wisdom of the legislature.

Mr. SAYLOR. I can understand, sir, and I think you have portrayed very, very well what could have happened in Wisconsin, and not only the State of Wisconsin, but throughout the length and breadth of our country if we would have had as severe a winter as we had throughout the west in 1972 and 1973, as we did in the early part of the 1973 winter.

Did you have a program in the State of Wisconsin as to allocation or did your commission take that matter up?

Mr. EICH. We did develop last winter a program, a set of priorities that fortunately never had to be used that covered the fuel elements that—where the problems were arising and the fuel areas which were clearly under the State's jurisdiction, natural gas for example.

The Public Service Commission, together with the Division of Emergency Government, which is like the civil defense arm of the State, developed a set of priorities and we were prepared to allocate sales of natural gas by retailers within the State to various priority pipe institutions.

Mr. SAYLOR. Do you feel that your Commission is in a position to determine the priorities between the farmers of Wisconsin and those who would vacation in the Dells, for example?

Mr. EICH. I feel that my Commission in concert with perhaps other State agencies would have that authority, assuming that a true emergency did exist.

I would presume, for example, if supplies are allocated to the State of Wisconsin in any Federal program, that it would fall upon State agencies such as my own individually or in concert to allocate those supplies among various segments of the State.

Mr. SAYLOR. The reasons I am asking this line of questioning, I have been reading several news releases recently that were prepared in the press that various State agencies and various cities which operate on a fiscal year beginning July 1, are at the present time advertising for bids for fuel supplies and gas-line supplies for five trucks, police cars, highway equipment and other items and receiving in some instances absolutely no bid at all or only a bid for 30 days rather than the year's supply as that has been in the past.

I think this is something that will be of great importance in your State and all the others within the very near future.

Mr. EICH. I am sure that it will.

Mr. SAYLOR. I just want to get the record straight. Our chairman has said there has been no study made at all of any alternative through Canada, and I would like to remind him that the Mackenzie Valley Pipeline Research Ltd. did a survey on a pipeline through Canada.

Now, it is true that they did not go across the northern part of Alaska, but there is research done as far as Mackenzie Delta is concerned.

Mr. MELCHER. Would the gentleman yield?

Mr. SAYLOR. Yes.

Mr. MELCHER. If I didn't make it clear, I will be glad to make the record show that our hearings have not provided us with information about a definite route across Canada.

Mr. EICH. I wanted to be clear, too, in that, Mr. Chairman, I appreciate the many, many questions and the many aspects of this matter that you and the committee are hearing, and will ultimately have to decide.

I came today to give you some of the frustrations that I as a State agency head, and I am sure many others feel the same way, feel in this area and to indicate to you that if the other facts fall in line then we in the Midwest do have substantial needs for fuel supplies now and in the future.

Mr. MELCHER. I certainly appreciate that point very much.

Mr. SAYLOR. I just want to say that I think your testimony has been very helpful because it points up another factor that this committee must consider as we look at this overall emergency picture.

I for one would like to thank you for coming here and giving us the benefit of your testimony.

Mr. EICH. Thank you.

Mr. SAYLOR. Thank you, Mr. Chairman.

Mr. MELCHER. The gentleman from Arizona.

Mr. STEIGER. Thank you, Mr. Chairman.

I would like to tell you, sir, that your testimony has been of great help to the committee. I would like to tell you that, but I honestly feel sadness that you are overlooking the very pragmatic realities of the total fuel supply picture when confined to an ultimate choice between the Alaskan pipeline and Canadian pipeline has been overshadowed by the very genuine needs within your State.

You have done a good job in explaining the problem, but you have chosen the wrong solution.

I have no questions, Mr. Chairman.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. I just want to compliment the gentleman by bringing out the point if we had our way, you would have had your way already.

The pipeline would have been constructed. You do have a problem.

Through the hearings, I think that has been relatively established, at least to my mind, that we are facing a time frame of a continued delay.

We have also heard that if the trans-Alaskan pipeline was to begin construction there would be tradeoffs, returns to the pipeline system, use of the Canadian oil at Cherry Point that could relieve your situation if the Alaskan pipeline is built.

The reason I say—you mentioned Mr. Anderson's bill and Mr. Ruppe's bill and Mr. Aspin's bill, but again, they are not taking into consideration the delay within the Government of Canada and if you were faced with a decision of a 10-year delay in the Canadian route or 3-year delay, tradeoff and use of oil as has been used in the west coast now, which one would you take?

Mr. EICH. You ask a difficult question, and my own—obviously my own testimony and my own belief at this time is based upon an assumption that a trans-Canadian line would not be delayed significantly beyond——

Mr. YOUNG. It is going to be delayed. Would you accept the trans-Alaskan pipeline?

Mr. EICH. If it is going to be delayed, as much as I could tell you now, I would certainly have to reconsider my own position.

Mr. YOUNG. Mr. Chairman, along that line, I would like to bring out two points:

Two things have happened within the last few days: One is a recent decision by Mr. Justice Merill; the Northwest Supreme Court has rendered a decision that the land in question which backs up Mr. Meeds' statement, the question concerning the needy land claims have been frozen.

He states in effect it could possibly be years because of aboriginal court cases.

The last paragraph says: The National Energy Board must show they have a right-of-way for a pipeline and that the caveat proceedings introduced are now—he said it was up to General Christian, Minister of Indian Affairs, to make a decision to grant a right of way for gasline, pipeline construction, and he says I am not sure we have fouled up the National Energy Board, but we have fouled up the plans.

The uncertainty of the things faced in Canada, and there will be by this one statement—this is a recent one, May 16.

The other one is an article, Mr. Chairman, from Ottawa, and I think many of us forget this and with your permission I would like to read just a short paragraph from the New York Times, May 22, 1973.

Mr. MELCHER. Certainly.

Mr. YOUNG. "It is apparent that the enthusiasm of Canadians for a Mackenzie Valley oil pipeline by no means matches that of American environmentalists. Reflecting the economic nationalism which runs through Canadian politics these days, the New Democratic party, by whose grace Mr. Trudeau's Liberal minority now governs, opposes the project on the formal ground that not enough research has been done and on the informal ground that it is not prepared to support something just because it might serve the interests of the United States, much less those of some oil companies."

Financial and economic objections run through all the country's major parties. Donald S. Macdonald, the Minister of Mines. Energy and Resources, who leans toward the project indicates that his Government would expect the oil pipeline to be at least 51 per cent Canadian-owned. But the job of raising that kind of money—at present costs, some $8 billion—would be forbidding if not impossible. And if it were raised, there are fears that it would tie a large part of the country's savings to the energy needs of the United States. If, on the other hand, American capital were to do the job, or most of it, the impact could be dangerously inflationary.

What you are asking us to do and I sympathize with your problem, it is not only Wisconsin. Alaska has just gone on fuel ration which affects our fishing fleets because we get most of our refined fuel from the south 48.

My reason for this statement in asking you this if there were to be shown with a three-year time lag we would relieve your problem, then you would have to support the trans-Alaska pipeline?

Mr. EICH. I can't say that.

Mr. YOUNG. Why can't you say it? You testified the reason you are here is because you have an emergency problem.

Mr. EICH. That is right, but I don't want to see it solved without the merits of an alternate route through Canada.

What you have indicated seems to me indicates one of the problems that Congress and your committee has, and that is there is a plethora of information on all sides of either route.

When I came, I came admittedly with a very parochial interest this morning, and my plea here today is simply that this type of parochial interest of Midwestern and certainly the needs of my own State be worked into your process.

It is a difficult process, and I certainly don't envy the committee or Congress the task of making this decision.

Mr. YOUNG. You are aware of the testimony we heard from the Columbia Gas Co. yesterday?

Mr. EICH. No, I am not.

Mr. YOUNG. They definitely support a trans-Alaskan pipeline because you have to have gas, not gas money—gas.

What I am trying to say, you come here saying you have an emergency problem. You do have a problem. I am trying to solve that problem by getting that pipeline built as soon as possible, so you can have your natural gas and you can have your tradeoffs.

Mr. Chairman, that is all the questions I have.

Mr. MELCHER. I am reminded by the diligent, efficient and alert staff that the Mackenzie Valley study was submitted for the hearing record by Representative Anderson 2 weeks back.

Mr. YOUNG. Mr. Chairman, would you yield?

Mr. MELCHER. So we do have the study in the record.

Frankly we have not had it discussed openly at the hearings, but it is in the record and we will provide the members of the committee an opportunity to apprise themselves of it.

I will be glad to yield to the Gentleman from Alaska.

Mr. YOUNG. Mr. Chairman, if we do have a chance to discuss that study, could we have the date it was made and how it was made?

Mr. MELCHER. Mr. Eich, one final word:

The committee is very much interested in the attitude of the Canadian Government about the Canadian pipeline, and we are exploring that by whatever means is available to the committee. We hope to have the benefit of the views of representatives of the Canadian Government.

We hope that will be possible but we are not sure at this point. That will resolve some of the points raised and discussed here at the hearings and the questions to which we have not had definitive and clearcut answers.

Thank you very much.

Mr. EICH. Thank you.

Mr. MELCHER. Representing the National Oil Jobbers Association are Mr. Gordon Haglund of St. Cloud, Minn. and Mr. Charles Uban, Waterloo, Iowa.

These gentlemen are here with their written testimony.

We will be delighted to hear from you.

STATEMENT OF CHARLES UBAN, WATERLOO, IOWA

Mr. UBAN. My particular assignment is to wake you up by showing you some specific examples of the marketing aberations that are occurring as we belatedly try to solve the U.S. shortage by hunting for foreign finished product.

A year ago, in the spring of 1972, domestic and foreign supplies of gasoline were ample but not surplus. An importer-exchanger, Petroleum Trading & Transport Co. of Tulsa, sold me 70,000 gallons of gasoline at 12¾ c/gal in May 1972.

If anybody had told me this a year ago, I would not have believed it.

Yet I assume it is difficult for you to believe, therefore, I have these exhibits.

Turn back to exhibit A—this is an invoice. The Uban Oil Co. for a load of gasoline and the regular gasoline costs 12¾ cents f.o.b. Hudson, which is the Williams Bros. Terminal just outside of Waterloo.

The next is the April invoice for 22 1/10 cents and exhibit C is the May for regular gasoline of the same source for 25.055 c/gal.

Domestic products from my principal supply now costs 14¼ cents at the time of writing and now is 14¾ c/gal.

The logical conclusion would be buy all your gas from Kerr-McGee.

The answer is, the allocation which Kerr-McGee and not of the oil industries had to go through.

In February, Kerr-McGee started allocating gasoline to their distributors on a month-by-month basis. Their interchange and supply situation deteriorated rapidly and badly.

I estimate that my June allocation will be 50,000 gal.

Once again, that is hard to believe, so let us go back to exhibit E. This is the original written communication from Kerr-McGee outlining their allocation program. Down in the middle of the page it says they will supply me with 147,000 gal in March and says we also anticipate making available the same quantity in March 1972, if, et cetera, et cetera.

Turning over to exhibit F, they have given me 110.000 gal, total 97 percent of the purchases in April 1972 and the May allocation is 37,000 gal.

We have a supply problem in the Midwest.

These specific examples are not isolated cases. In Iowa all petroleum outlets are on some kind of allocation on gasoline. Standard has restricted both jobbers and direct company operations to no more than 100 percent of last year's month sales. Phillips has cut both jobbers and direct company outlets to 90 percent of 1972's gallonage. Skelly restricts company stations to 100 percent of last year's gallonage and has cut its jobbers to 85 percent on gasoline and 74 percent on fuel oil. I don't think that Skelly's system is equitable but it does show an acute shortage of product in the Midwest.

Here in Iowa, the gasoline picture looks dismal, but the fuel oil picture looks worse. Fortunately last winter we had a record-breaking warm spell of above normal temperatures January through March. Without it, every single standby customer would have been out of gas and oil and heat, including hospitals, schools, apartments, factories, and commercial buildings.

The State government helped immensely by setting up the Iowa Emergency Fuel Pool. Every supplier with any spare product turned it over to the State. The civil defense office managed the pool allocating it out to areas of hardship shortage.

The oil distributors hauled the oil from wherever it was stored to the shortage areas. The freight penalty varied from 1 c/gal to 3.8 c/gal as I hauled fuel oil from Dubuque, Fort Dodge, Bettendorf, Coralville, Des Moines, Clear Lake and even Rock Rapids, because I did not have oil in the oil terminal.

Next year will be even worse. Fewer actual gallons available. Gas interruptions coming sooner, and we cannot possibly have another recordbreaking warm winter.

The Midwest has the worst petroleum shortage. The shortage cannot be solved with foreign finished product.

To get a better quantitative analysis of the Midwest shortage, I suggest that the committee write to the two pipelines serving the upper Midwest and ask for a comparison between 1972 and 1973 on their products in storage and their three month projection of shipments. From those figures, you will be able to predict accurately whether the actual Midwest shortage will be 5 percent or 15 percent. They will not give me this information, but should respond to a congressional request. Write to:

Al Bennet, Wm. Bro. Pipeline, Box 3448, Tulsa, Okla.

Fred Springer, Kaneb Pipeline Co., 555 Fourth National Bank Building, Wichita, Kans. 67202.

The Kaneb pipeline is Kansas, Nebraska, and the Dakotas, and these areas are the shortest.

They cannot be equitably supplied with overseas products.

The Mackenzie Valley Pipeline is imperative for the continuing energy needs of the Midwest. None of the Minnesota refineries can expand their operations unless they get increased crude commitments. The Mackenzie route will service the Canadian Arctic oil provinces in addition to our North Slope. It will enable the Canadian government to ease up on their export restrictions. An additional crude line down the Williams Brother right-of-way could supply the crude starved Kansas refineries. In short, it will put the product where it is needed most.

Ever since the Connolly Hot Oil Act during the depression, the Federal Government has had an underlying theme for its oil policy, namely, "profit for the oil companies." We now need to change that principal to "continuing product for the consumers."

Thank you for the opportunity, gentlemen.

Mr. MELCHER. Thank you very much, Mr. Uban.

Since you are appearing as a panel, we will now hear from Mr. Haglund before we start questioning.

STATEMENT OF GORDON HAGLUND, ST. CLOUD, MINN.

Mr. HAGLUND. Thank you, Mr. Chairman.

I and my partner, Gordon Adams, operate an independent, branded petroleum jobbership in St. Cloud. Minn. Today, I also speak for the Northwest Petroleum Association, a trade association which represents some 1,100 petroleum jobbers in Minnesota and North Dakota.

We appreciate the opportunity to testify today concerning ways to bring North Slope crude oil to the lower 48 States. Our present energy dilemma dictates that we do not delay 1 day more than necessary in deciding how this should be done.

Whatever decision is made, that decision must take into consideration the critical nature of energy supplies in the Midwest. Not only is the wellbeing of the Midwest at stake, but since it is the Midwest that produces most of the foods for the Nation, it is imperative that competitively priced energy be made available to the area.

When the energy shortage hit last winter it was the Midwest that was affected first, and most dramatically. Corn could not be dried, schools were closed, some factories were closed, while others curtailed their operations significantly and trucks that move the produce to market were threatened with lack of fuel.

A major contribution to our present supply problem is the fact that we are located on the very end of the line from the largest refining areas. This fact is manifesting itself in actions already taken, or announced plans of suppliers in our area. The wholesale volume of petroleum products previously made available through Triangle Refining, Bell Oil & Gas, Clark Refining and petroleum brokers has already been withdrawn. Further, Gulf Oil Co. and Sun Oil Co. have announced that they will be leaving in the immediate future. In addition, the remaining suppliers have placed their jobber customers on allocation for only a portion of their needs.

To place these actions into a meaningful perspective, let us examine what this would have done to my market of St. Cloud, in the year 1971, if they would have taken place then. During that year, 110 million gallons of gasoline and distillate fuels were sold. Of this amount Gulf and Sun accounted for 16 million gallons. Add to this the gallonage sold by brokers, Clark, Triangle and Bell, plus the reduction of available product, because of allocation restrictions and we arrive at a conservative estimate of an additional 20 million gallons. This totals 36 million gallons or one-third of the total volume. This same situation is true to a somewhat greater or lesser degree throughout Minnesota and North Dakota.

We anticipate relief from these catastrophic deficiencies by the recently imposed Federal allocation program. Sun Oil Co. has announced a postponement of their withdrawal by 1 year, and we are hopeful that Gulf Oil Co. will continue to make product available to the area. As welcome as these measures are, we prefer a return to a free and competitive market. The effectiveness of imposed controls has in the past proved to be effective only for a relatively short period of time.

From a Minnesota and Midwest point of view, the Trans-Canadian route to bring North Slope crude oil to the lower 48 States holds special appeal. We recognize, however, that national interest is at stake and the final decision on how to bring the crude oil to market, must consider several matters, paramount of which appear to be the following:

1. What are the ecological considerations?
2. What are the economics?
3. How soon can the oil be brought to market?
4. How can the oil be made the most secure in case of a national or international disruption?
5. How will the energy needs of the entire Nation be served, not just the area which is the prime recipient of the crude oil?

Since I do not have any personal expert knowledge on which I can develop answers to any of these questions, I must rely entirely on others to provide them. I must admit that this can be rather trying, and more than a little confusing.

On the one hand I read that the Interior Department supports the Alyeska Trans-Alaska route, and they claim this route is superior to the Mackenzie Valley Trans-Canadian route. Then I read a feasibility study by the Mackenzie Valley Pipe Line Research Ltd., that directly contradicts many of the statements made by the Interior Department. It is interesting to note that Mackenzie Valley Pipeline Research is a consortium of some 17 major petroleum companies,

including such well known companies as Cities Service, B. P. Oil Limited, Gulf Oil of Canada, Mobil Oil Canada Limited, Shell Canada, and Texaco. I understand that this was a 2 year, $7.5 million project.

Whereas, Interior estimates the cost of TCP at $10 billion, the study puts the figures at $3.4 billion for the pipeline to Edmonton. There it would link up with both the Interprovincial pipeline, to continue into the Midwest, and the Trans-Mountain oil pipeline, to take crude oil to the west coast. It was interesting to note that Interprovincial has already embarked on a 48-inch looping program out of Edmonton and anticipates that it would have a substantial portion of such a line from Edmonton to Chicago installed by 1975. The study further states that Interprovincial has indicated that it would be prepared to complete this line to coincide with completion of the Mackenzie Valley oil line.

Another major contradiction between Interior and the feasibility study was the estimated time of completion. Interior estimates up to 10 years for completion, whereas, the study projects 4 years, which includes 1 year for necessary United States and Canadian approvals.

If there is any validity to this study, and to other factors that bear on this matter, let us attempt to answer the questions that I posed earlier, based on choosing the Trans-Canada (Mackenzie Valley route), rather than the Trans-Alaska Alyeska route.

What are the ecological considerations?

The study states that the TCP can be built and operated without major or irreparable damage to the arctic environment. A preliminary examination of records of earthquake activity revealed no areas of unusual concern along the proposed route. However, extensive studies were made, and the largest earthquake in the area, between 1899 and 1970, was located 75 miles from the route and had a value on the Richter scale of 6.7. This rating is negligible in buildings of good design and construction.

What are the economics? As indicated earlier, the estimated cost in the study, of the line to Edmonton, was $3.4 billion. The study further states that at a volume of 1.8 million barrels per day, crude oil can be transported from Prudhoe Bay to Edmonton on a 7 percent flowthrough net income basis at a 30-year average tariff of $1.15 per barrel. It can be delivered from Prudhoe Bay to the Chicago area for an approximate average tariff of $1.55 per barrel, and to Puget Sound, on the west coast, at about $1.40.

How soon can the oil be brought to market?

The study states that TCP can be designed, built, and in operation within a period of 4 years after a final decision to proceed, providing final government approvals are granted within the first year.

How can the oil be made the most secure in the case of a national or international disruption?

From a national defense standpoint, the proposed transporting from Valdez is not even logical. In the event of war, tankers with vital crude would be exposed to our enemy and could be dried up with a minimum of effort. The Mackenzie Valley route would offer easier security. The position that we would be too vulnerable to a foreign country, namely Canada, if the line goes through their

country and they share in the ownership, needs further examination. Two facts stand out: First, much of the natural gas and crude oil currently coming into the Midwest originates in Canada, and second, everyone seems to support a new natural gas pipeline from the North Slope through this same Mackenzie Valley route.

We believe these facts require a mutually satisfactory accommodation that certainly could carry through to the crude oil pipeline.

It has been expressed that the Canadian Government would place impossible demands, during construction. In the area of treatment of northern residents, the feasibility study states that contacts with numerous government representatives, and reviews of available reports, have provided an assessment of the requirements and a basis for estimating associated costs. The study further says that it is concluded that the expected requirements are not unreasonable, and that at such a time as a definite project is launched, there should be no difficulty in complying fully with the Government's wishes.

How will the energy needs of the entire Nation be best served, not just the area which is the prime recipient of the crude oil?

I cannot understand how any North Slope oil can be of any benefit to the Nation east of the Rockies, if it is all delivered to Valdez through Alyeska pipeline? There are those who say that much of this oil would end up in Japan. It seems certain to me that it would, at the least, discourage secondary recovery from west coast oil fields and would also discourage west coast offshore drilling. This may already be happening in anticipation of Alaska oil.

Touching on President Nixon's recent energy message, Los Angeles' Mayor Sam Yorty, in a speech in Anaheim,

> Found it paradoxical that while Nixon emphasized the necessity for developing offshore reserves everywhere else, he is requiesting Congress to lock up the hydrocarbon reserves of the Santa Barbara channel, although these could be utilized without damage to the environment and with great benefit to California and the Nation.

On the other hand, if the route chosen is Mackenzie Valley, crude oil would be made available to the heartland of the Nation, where present and projected energy shortages are the most acute. This would then relieve gulf coast material to all other areas east of the Rockies. According to the plan of the Mackenzie Valley Pipe Line Research Ltd., the west coast could also receive North Slope crude through the Trans-Mountain oil pipeline. According to this, it appears that the only one that would lose would be Japan.

Attached is a resolution from the National Oil Jobbers Council (NOJC), supporting the Mackenzie Valley route. NOJC is the national organization that represents some 13,000 independent petroleum jobbers (branded and unbranded) throughout the United States. This resolution was adopted by NOJC's board of directors at its last board of directors' meeting held in St. Louis, Mo.

I think it is appropriate to say this resolution was passed by the board of directors and represented by marketers from all over the United States.

It is not a provincial resolution.

Mr. MELCHER. What were the votes?

Mr. HAGLUND. Two sustaining votes, the two sustaining votes from Oregon and California.

The Inter-Mountain, Texas, the Southeast, Florida, all of the Southeast, all of New England, all of the Midwest. It was 100 percent in favor of this resolution with the exception of California and Oregon.

As indicated earlier, I cannot represent or defend the feasibility study by Mackenzie Valley Pipe Line Research Ltd. However, with national energy matters receiving and deserving our highest priorities, it would appear that they demand that a full investigation and serious consideration be given to this study.

We believe this can be done by approving the Arctic Oil and Natural Gas Act of 1973, which has been introduced in the House of Representatives by Congressman John Anderson of Illinois and Congressman Ruppe of Michigan. This appears to be a most reasonable and responsible bill that would give us 6 months to make a choice between Alyeska and Mackenzie Valley routes.

I understand that bill is coming back in a little different form and will be called the Alaskan Transmission Act of 1973 and will be cosponsored by Anderson and Blatnik and Udall.

Ruppe, I understand, is not on it. There are three sponsors.

We endorse that bill. It appears to a most reasonable bill. That bill would give us the time to study and clearly make the choice between Alyeska and the Mackenzie Valley routes.

It would appear to us that the far-reaching implications of this decision dictate this complete, openminded position.

Thank you.

Mr. MELCHER. We appreciate your testimony and I don't think it should be left in doubt that we certainly believe in the urgency which you describe for supplies for the Midwest, and incidentally, for the rest of the country, too.

You are both in the business, on the groundfloor of working with gasoline and fuel oil and petroleum products and you well can provide this committee with the relative paradox of shortage and how rapidly can it be resolved.

Perhaps nobody elese on the committee knows where—I assume everybody on the committee has heard that Des Moines and Fort Dodge and Dubuque and these big cities like that, but I don't imagine anybody on the committee, except myself, really knows where Bettendorf, Clear Rapids and——

Mr. SAYLOR. Just a minute.

Mr. MELCHER. As a native of Iowa, I well realize the points you raised when you stressed, do everything within 260 miles from Rock Rapids to Waterloo.

But I think the very thrust of your testimony is urgency and I think you should be aware of just what confronts this committee.

Through no fault of our own, we are not the ones who have set up the time table before us, but through no fault of our own, this committee must consider these points.

There is no study at all by the Department of Interior or anyone else on that portion of the proposed line that would go from Prudhoe Bay to link up with the Mackenzie Valley route.

Judging from the time it took to get a study and environmental impact statement filed on the other route from Prudhoe Bay to Valdez, I think we are looking at just a couple of years to get that por-

97-839 O - 73 - pt. 2 - 16

tion of the route studied, and then some hard decisions on whether that stays on shore on perma frost or is laid out under the ice in the Arctic Ocean as one witness has recommended to the committee.

Then second, when we get into Canada, we have had no—up until now—no testimony, no indication officially from the Canadian Government as to what their attitude would be on a route, environmental aspects of it, ownership aspects, and so on.

Third, on the very serious question of what would be involved with the Canadian natives' claims.

This is what the committee is faced with and if we are to accept the thrust of your testimony that there is a great urgency and you are talking about delivering some gasoline and fuel oil within 4 years, then we also go to the contiguous 48 States——

Well, perhaps we have to reach a far different conclusion than you have reached and are asking us to reach. That is to deny trans-Alaskan pipeline and to see to a trans-Canadian route.

Mr. HAGLUND. I would like to correct my testimony that I endorsed the Canadian route per se. I would like to say I endorse Representative Anderson's bill that says: Give us the 6 months, let's make these investigations.

I think it is absolutely unconscionable that this Government, knowing the problems—and this thing has been going on since 1968, and no real attempt has been made to contact officially the Canadian Government.

You have had testimony here from Mr. Pasmore, executive director of Canadian Wildlife, and he said that the Government of Canada has indicated its willingness and its eagerness to discuss all of these routes.

We are not saying close your eyes to the Alaska pipeline. We have got to have a problem.

Mr. MELCHER. Mr. Haglund, nobody from the Canadian Government has testified before this committee but it isn't at all accurate to state or to believe that there hasn't been effort to ascertain the Canadian viewpoint on this.

Mr. STEIGER. Government and industry.

Mr. MELCHER. I suppose you can well understand who speaks for the Canadian Government. Maybe this is a difficult thing to determine, but we are willing to listen to anybody.

This committee is seeking some consultation with them in the hearing record and advice from them. We are pursuing that.

But I think it would also be unfair to say that spokesmen for the administration have not attempted to gain the Canadian viewpoint.

Mr. HAGLUND. Is it not true, Mr. Chairman, that some energy commissioner has made the statement that if the distribution system goes by tanker that this will cause tremendous friction in the future between Canada and the United States and that he is in favor and leans toward the trans-Canadian route?

This is an official of Canada.

Mr. MELCHER. Mr. Haglund, I can only restate that the committee is very desirous of getting the official attitude of the Canadian Government and we are pursuing that as best we can.

Mr. HAGLUND. This is all we are asking for.

Mr. MELCHER. As to the point of a 6-months' study. I think it is clear from the past that 6 months would not permit time enough to go through the processes that have been gone through in determining the environmental impact either in that portion of Alaska that would be necessary to study to hook up with the Mackenzie Valley or through Canada itself if the Canadian Government so desires such a route.

Even if we are talking about urgency for something within 4 years, the testimony that we have been able to receive here has not in any way indicated that a trans-Canadian pipeline would settle it.

Mr. HAGLUND. Have you asked for testimony from these people?

This is the Mackenzie Valley pipeline research. These are major oil companies, by the way.

Mr. MELCHER. We have not asked testimony from them at all and they haven't contacted us to offer us any advice.

The only group that we have asked testimony from has been the Canadian Government and we are doing that for a very special reason because we feel there is an urgency.

Those people who have testified, like yourself, have come forward to the committee because they have important aspects to discuss with us.

The gentleman from Pennsylvania.

Mr. SAYLOR. I want you two gentlemen to know that my statements are not meant to you personally, but for two individuals or two representatives of companies in the oil business, you haven't been cognizant of the pending fuel shortage in this country for a period of years.

You both, and your organizations, have been so busy making money that you haven't worried about the source of supply because anybody who has studied the energy proposition as some members of this committee have, know that back in 1952 by a straight line projection on the amount of energy that we had and the amount we were going to use and the anticipated growth, to 1972 or 1973, it was very obvious that this energy crunch was going to be on.

I can only tell you that you have called our attention to the fact that oil has increased in price here from 12 to 25 cents.

It is going to go on up. I predicted a long time ago that this year we would have dollar gasoline, and you will have it in Waterloo, Iowa, this summer, because the supply is going to be so low, to keep operating you are going to have to charge $1 a gallon.

You will sell or drop what you got.

Next winter things are going to get cold.

On the facetious side, all I can tell you is you must have a pretty good connection with God because on page 2, you say we can't possibly have another record-breaking warm weather.

Mr. URAN. The law of averages would indicate—would be a better way to phrase it.

Mr. SAYLOR. Under normal circumstances, that is correct.

But I can only tell you this. You say on page 3, that there have been profits for the oil companies. You have been a part of that business and making profits over the years.

There just isn't enough oil to go around on this world capsule of which we know right now, there just isn't enough.

You people who are in the business of selling it should know that.

Congress may be responsible for some of it. We have passed some bills saying we ought to clean up the environment as far as air pollution is concerned, and emissions from automobiles.

That has reduced some of the larger cars from 18 or 19 miles per gallon of gas down to 7 and 8 miles.

Now it takes 3 gallons of gas to go approximately the same distance.

All of these things contributed to it. We are making millions of more cars every year, and every family wants at least two, and if you have any teenagers, you have three and maybe four.

Maybe they aren't all paid for but they are parked in front of the house and they are all using gasoline and oil.

All I can tell you is, you didn't touch on the most serious part of this question, both of you gentlemen, and that is the basic food supply.

The area where you gentlemen come from is basically the heartland of what produces the food and fiber for the people of this country, and if there isn't enough to take care of the fellow driving down the street, you have a real problem to get enough gasoline and oil for the farmers.

With the millions of acres in the Mississippi Valley now under water and will be for a month, and the latest information I have, it will take at least another month or two to dry it out.

It means you have 30 or 40 million acres of ground that will not produce anything this year.

We are faced with a real food shortage this coming year and the responsibility you fellows have is going to be terrible.

Mr. HAGLUND. I did touch on the agricultural aspects of my testimony. I agree with you that takes it out of the provincial Northwest.

Mr. SAYLOR. This isn't provincial. This is real serious.

Mr. HAGLUND. I, too, do not take it personal because we are representing 13,000 jobbers in the United States. They amount to about 20 to 30 percent of all the sales of gasoline and 70 percent of all sales of heating.

So it is not a small isolated group.

But you talk about our not anticipating it. I have to go back to the fact that really, as you indicate, back in 1952, you were anticipating, by the same token we sit here as the Federal Government with 64 different agencies with their finger involved, and to this day have not seen fit to get a coordinated program and really we in the marketplace, we don't produce 1 gallon, if it isn't there, there isn't one thing we can do about it.

I agree on the fact the whole thing has been changed by the passing of laws and regulations and many of them needed passing, but the implications we aren't ready for it, we aren't ready today, we still haven't done anything about limiting horsepower in New York.

We haven't touched on any of these things.

I take the position that this country could reduce its demand by 20 percent and not effect your wellbeing of mind.

I think there are ways to do it. W don't talk enough about it. But this is where we need this whole concerted national energy policy that weighs one against the other and comes up with a balanced program.

So I endorse that.

Mr. SAYLOR. I agree with you on the duplication that occurs and it doesn't make any difference what administration comes into power. The agencies downtown continue forever, and not a one of them wants to talk about solving real problems, and some of them won't even talk to the other agencies.

Mr. HAGLUND. But we really feel, in the Midwest, with our consumers, there is a real rebellion developing that this thing is not being spoken to and the answers are not coming forward the the programs are not being dovetailed and it is just a big way to get prices up and the consumer is going to pay for it.

This is where we need this kind of concerted action, and I think your committee is the place to start; I really do.

Mr. SAYLOR. Well, I just say to you that you just wait until your stations begin to open like doctors' offices and they will be open from 9 until 11, and from 1 to 3, and a dollar gasoline.

Mr. UBAN. You think I can serve the motoring public better by closing some of the stations and maintaining normal hours?

Mr. SAYLOR. I don't know.

He thinks that Skelly is unfair because they are going to keep their stations up to 100 percent and cut jobbers to 85 percent on gasoline and 75 percent on fuel.

Mr. UBAN. Yes; I think that is unfair.

Mr. HAGLUND. The Federal allocation program does speak to that problem and we see that he's going off, at least in our part of the country.

There is some equity developing.

Mr. SAYLOR. Doesn't Skelly have a refinery itself?

Mr. UBAN. But they don't have the crude oil to run through their Kansas refineries.

The Kansas wells are running dry. That is the basis of the problem.

Mr. SAYLOR. OK. I appreciate the fact that you both came and I think you represented your organizations very well.

Mr. MELCHER. The gentleman from Arizona, Mr. Udall.

Mr. UDALL. No questions.

Mr. MELCHER. The gentleman from Arizona, Mr. Steiger.

Mr. STEIGER. Thank you, Mr. Chairman.

I would like to ask Mr. Uban with regard to the statement that Mr. Saylor brought his attention to, in which we need to change the principle from profit to the oil companies to continuing products to the consumer.

I would like you to explain to me as briefly as possible, Mr. Uban, how we are going to provide the continuing product for the consumer if the oil companies have no profit?

Mr. UBAN. Well, let me go back and start first briefly when I say that the underlying principle has been profit for the oil companies, and let's go way back to the crude oil in 1929, which was brought into east Texas.

Mr. STEIGER. Excuse me.

I don't mean to interrupt you, but we don't have much time. I gather from the start of your historical preface, that you are about to explain how we have the product for the consumer and no profit for the——

Mr. UBAN. No: rather a change of emphasis.

Mr. STEIGER. So you would restrict the oil company and thereby——

Mr. UBAN. No; the oil companies that only control leases in Canada will, in the long run, make more money if they move it out to the world market. Then, if they are hooked up only to Midwest and Canada and the Eastern part of the United States, that the reserve will last longer and serve the customers longer and the companies will make less money, but of course, they won't.

Mr. STEIGER. Well, it is an interesting theory. I would tell you, Mr. Haglund, that you certainly don't speak for the jobbers that I know personally.

You may speak for the organization and I suspect it is a good deal like many organizations and a good deal like many of us here in Congress.

We purport to speak for our constituents and there are many of them we don't speak for.

Mr. HAGLUND. These are the elected representatives.

Mr. STEIGER. Thank you for the clarification, but I will tell you, you don't speak for those people personally.

Mr. Haglund, do you subscribe to the theory that has been offered by some of our colleagues in Congress that the entire fuel shortage is a fix and has been engaged in solely for the purpose of raising the price of the product to the consumer?

Mr. HAGLUND. I certainly do not.

Mr. STEIGER. Mr. Uban, do you subscribe to that?

Mr. UBAN. No; a very definite shortage foreseeable in the year 1969.

Mr. STEIGER. Thank you, Mr. Chairman.

No questions.

Mr. REGULA. No questions.

Mr. YOUNG. No questions.

Mr. MELCHER. Thank you very much, Mr. Uban and Mr. Haglund.

I find your testimony very helpful to the committee.

[Additional material supplied for the record:]

STATEMENT OF CHARLES J. UBAN, UBAN OIL CO., WATERLOO, IOWA

GENTLEMEN: Thank you for this opportunity to testify. I will attempt to give you an understanding of the Midwest supply picture by showing you some specific examples of the marketing aberations that are occurring as we belatedly try to solve the U.S. shortage by hunting for foreign finished product.

A year ago, in the spring of 1972, domestic and foreign supplies of gasoline were ample but not surplus. An importer-exchanger, Petroleum Trading

and Transport Co. of Tulsa, sold me 70,000 gallons of gasoline at *12 3/4¢ per gallon in May of 1972.* (Exhibit A) Last month, the same gasoline from the same source cost *22.4¢ per gallon (Exhibit B).* Now in May, the cost has doubled in *12 months to 25¢ per gallon* (Exhibit C). Domestic gasoline from Kerr-McGee, my principal supplier, now costs 14 1/4¢ per gallon. (Exhibit D)

So the logical business conclusion would be "Buy all your gasoline from Kerr-McGee and none from P. T. and T."

In February Kerr-McGee started allocating gasoline to their distributors on a month by month basis. Their interchange and supply situation deteriorated rapidly and badly.

	Kerr-McGee allocation of gasoline to Uhan (gallons)	Exhibit
March 1973	147,000	E.
April 1973	110,000	F.
May 1973	57,000	G.
Estimate June 1973	50,000	Estimate.

These specific examples are not isolated cases. In Iowa all petroleum outlets are on some kind of allocation on gasoline. Standard has restricted both jobbers and direct company operations to no more than 100% of last year's month sales. Phillips has cut both jobbers and direct company outlets to 90% of 1972's gallonage. Skelly, restricts company stations to 100% of last year's gallonage and has cut its jobbers to 85% on gasoline and 74% on fuel oil. I don't think that Skelly's system is equitable but it does show an acute shortage of product in the Midwest.

Here in Iowa, the gasoline picture looks dismal, but the fuel oil picture looks worse. Fortunately last winter we had a record breaking spell of above normal temperatures January through March. Without it, every single standby customer would have been out of gas and oil and heat, hospitals, schools, apartments, factories, and commercial buildings. The state government helped immensely by setting up the Iowa Emergency Fuel Pool. Every supplier with any spare product turned it over to the State. The Civil Defense office managed the pool allocating it out to areas of hardship shortage. The oil distributors hauled the oil from wherever it was stored to the shortage areas. The freight penalty varied from one cent per gallon to 3.8 cents per gallon as I hauled fuel oil from Dubuque, Fort Dodge, Bettendorf, Coralville, Des Moines, Clear Lake and Rock Rapids. It will be worse next winter. Fewer actual gallons available. Gas interruptions coming sooner, and we cannot possibly have another record breaking warm winter.

The Midwest has the worst petroleum shortage. The shortage cannot be solved with foreign finished product.

To get a better quantitative analysis of the Midwest shortage, I suggest that the committee write to the two pipelines serving the Upper Midwest and ask for a comparison between 1972 and 1973 on their products in storage and their three month projection of shipments. From those figures, you will be able to predict accurately whether the actual Midwest shortage will be 5% or 15%. They will not give me this information, but should respond to a congressional request. Write to:

Al Bennet, Wm. Bro. Pipeline, Box 3448, Tulsa, Oklahoma.

Fred Springer, Kaneb Pipeline Co., 555 Fourth National Bank Bldg., Wichita, Kansas 67202.

The MacKenzie Valley Pipeline is imperative for the continuing energy needs of the Midwest. None of the Minnesota refineries can expand their operations unless they get increased crude commitments. The MacKenzie route will service the Canadian Artic oil provinces in addition to our North slope. It will enable the Canadian government to ease up on their export restrictions. An additional crude line down the Williams Brother right-of-way could supply the crude starved Kansas Refineries. In short, it will put the product where it is needed most.

Ever since the Connolly Hot Oil Act during the depression, the federal government has had an underlying theme for its oil policy, namely, "Profit for the oil companies". We now need to change that principal to "Continuing Product for the Consumers".

FORM 2 REV. 1/71

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[illegible] WASHINGTON
[illegible] ILLINOIS

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TOTAL INVOICE ▶ [illegible]

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UBAN OIL COMPANY
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UNLOADING—The above car to be unloaded within 24 hours after being placed. Sundays and Holidays excepted. Or, $2.00 per day to be assessed for each 24 hours or fraction thereof, thereafter. Except pressure cars to be $3.00 per day.

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The producer of these goods has given assurance that such goods were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.

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	10110NET TO		WATERLOO	33204	203

CAR OR TICKET NO.	CODE	DESCRIPTION	TEMP.	GROSS GALLONS	NET GALLONS	PRICE	AMOUNT
42334	228	REGULAR GASOLINE		5850		.25055	1465.72
		TOTAL GAL.		5850			
		TAX EXEMPT					

IF PAID BY 5/25/73 DISCOUNT OF $ MAY BE TAKEN — TOTAL INVOICE ▶ 1465.72

IMPORTANT

INSTRUCTIONS—Unless otherwise instructed when made empty return tank car to PETROLEUM TRADING & TRANSPORT CO.
Point of origin, reverse. Routing

DIVERSION—The above car cannot be diverted enroute unless authorized by this company.

UNLOADING—The above car to be unloaded within 24 hours after being placed. Sundays and Holidays excepted. Or, $2.00 per day to be assessed for each 24 hours or fraction thereof, thereafter. Except pressure cars to be $5.00 per day

OUTAGES—All outages must be reported before cars are unloaded within 24 hours after arrival, otherwise claims will not be considered. Claims must be supported by affidavit and mailed to this office within 60 days, showing inches out, average temperature and condition of car when received. Claims will not be allowed unless received within 60 days from date of shipment.

The producer of these goods has given assurance that such goods were produced in compliance with all applicable requirements of Sections 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.

CUSTOMER

DEEP ROCK KERR-McGEE CORPORATION
Products by

D

SOLD TO
URAN D.R. SERVICE
P. O. BOX 332
WATERLOO, IOWA 50704

PLEASE REMIT TO
KERR-McGEE CORPORATION
P.O. BOX 26611 OKLA. CITY, OKLA. 73126

SHIP TO
SAME
WATERLOO, IOWA

SYMBOL EXPLANATION
# = POUNDS, T = TONS, S = SQUARES
B = BARRELS, R = ROLLS, G = IMPERIAL GALS

SHIPPED FROM	FRT. COL. F.O.B.	DELIVERED BY	CUSTOMER NO.	INVOICE DATE	INVOICE NUMBER
WATERLOO	COL TERMINAL	CUSTOMER	0030-998	5/01/73	85585

ACCOUNTING CODES	CUSTOMER ORDER NUMBER	OUR ORDER NUMBER	DATE SHIPPED	
419-13-1-7-72-1-1-K	92606		4/30/3	43090

PACKAGES QTY	PACKAGES KIND	GROSS QUANTITY	NET QUANTITY	UNIT PRICE	PRODUCT CODE	DESCRIPTION	AMOUNT
		25900	2608	.14250	104	DEEP ROCK REGULAR	369.08

FOB
HUDSON

TERMS		IF PAID ON OR BEFORE		DEDUCT		INVOICE TOTAL	
P10		→	5/14		3.69		369.08

KERR-McGEE CORP.,
Minneapolis, Minn., February 23, 1973.

Mr. CHARLES URAN,
Uban Deep Rock Service,
Waterloo, Iowa.

DEAR MR. URAN: This is to inform you that Kerr-McGee has regretfully concluded that during 1973 it will not be in a position to supply you with unlimited quantities of gasoline. In order to provide our customers with an equitable distribution of available quantities we must allocate gasoline beginning March 1, 1973.

We anticipate we will be able to supply you in the month of March, 1973, with 147,000 gallons of gasoline. We also anticipate making available to you the same quantity in each succeeding month of 1973. If, for some reason, you do not purchase the quantity made available to you in any one month, it will not be possible to add the quantity not purchased to your allocation the following month. We cannot undertake to supply you in any month with more than the monthly quantity set forth above.

All of this is subject to change at any time, either to increase or decrease the amount allocated in the event Kerr-McGee should change its estimate of the supply available to it, or to change the system of allocation. It is our sincere desire to be in a position to supply you with your total requirements. If circumstances allow, you will be notified immediately of the availability of any quantities which would be in addition to those stated in paragraph two of this letter.

S. E. KRAKER,
Regional Manager.

KERR-McGEE CORP.,
Minneapolis, Minn., March 30, 1973.

April Allocation to Distributors of Gasoline.

Mr. CHARLES UBAN,
Uban Deep Rock Service,
Waterloo, Iowa.

DEAR MR. UBAN: We are announcing the revised plan of distribution of available quantities of gasoline under our allocation program beginning April 1, 1973.

Your allocation for April 1973 is 80,000 gallons of regular gasoline and 30,000 gallons of premium gasoline. This is approximately 94% of your purchases for April 1972. Your allocation has been adjusted so that it reflects any service station addition or deletion from April 1972 through March 1973.

If for some reason you do not purchase the quantity made available to you in any one month, it will not be possible to add the quantity not purchased to your allocation the following month.

Any additions or deletions of service stations by you after March 1973, with the exception of a station or stations that you are presently leasing from Kerr-McGee will not increase or decrease the amount allocated in the event Kerr-McGee should change its estimate of the supply available to it, or to change the system of allocation.

If circumstances allow, you will be notified immediately of the availability of any quantities which would be in addition to those stated above.

Sincerely,

S. E. KRAKER,
Regional Manager.

KERR-McGEE CORP.,
Minneapolis, Minn., April 27, 1973.

Mr. CHARLES UBAN,
Uban Deep Rock Service,
Waterloo, Iowa.

DEAR MR. UBAN: This is to inform you that under Kerr-McGee's existing program of gasoline allocation, your allocation for May, 1973 is 40,000 gallons of regular and 17,000 gallons of premium gasoline.

Sincerely,

S. E. KRAKER,
Regional Manager.

Mr. MELCHER. The next and last witness for this morning is Mr. Glenn M. Phillips from Olympia, Wash.

For the benefit of the members of the committee, we have about 9 witnesses left.

We will not get to all of them today. We have five other witnesses that have asked to testify.

We will attempt to schedule 2 days more of hearings promptly.

Mr. STEIGER. Do you know when that will be, Mr. Chairman?

Mr. MELCHER. Hopefully, next week or the week after.

Now, Mr. Phillips, we have your prepared statement.

You may proceed.

STATEMENT OF GLENN M. PHILLIPS, EVERGREEN STATE COLLEGE STUDENT, OLYMPIA, WASHINGTON

Mr. PHILLIPS. My name is Glenn M. Phillips, a student at Evergreen State College, Olympia, Wash.

My training has been largely interdisciplinary in nature, revolving around wilderness and its values to the American society. My first 2 years of my undergraduate career have been in political science with my followup in environmental studies.

My interest that has brought me here to testify before this committee today revolves around Alaska and its future as a natural resource not only for this nation but for the world.

Before you are nine bills which I will discuss in depth later. All the legislation before this committee is concerned with rights-of-way for oil and gas lines across Federal lands. Some of the bills would simply amend section 28 of the Mineral Leasing Act of 1920, while others would authorize studies of alternative routes for the Alaskan line.

One bill, however, about which I am deeply concerned, is H.R. 5524. This bill is a companion to Hon. Senator Henry M. Jackson's S. 1081, the Federal Rights-Of-Way Act of 1973.

I believe that the intent of this bill is to authorize the Secretary of the Interior to grant rights-of-way for many corridors not just limited to gas and oil lines. The implications of this broad power is staggering, as I will discuss later.

First, though, there are two compelling reasons why I feel this committee must consider the issues raised in these bills thoroughly before passing judgment. The reasons are—the mandate given to this committee under the National Environmental Policy Act of 1969, section 102(c), requires an impact statement to be prepared before an action of a Federal agency affecting the environment can be implemented. The statement must discuss objectively: (1) The environmental impact of the proposed action; (2) any adverse effects which cannot be avoided should the proposed action be implemented; (3) alternatives to the proposed action; (4) the relationship between local short-term uses of man's environment and maintenance and enhancement of long-term productivity; and (5) any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented.

I hold, Mr. Chairman, that the final environmental impact statement put forth on the Alaskan pipeline by the Department of Interior is inadequate. What constitutes a sufficient statement?

Quoting from the "Response to Final Statement of Department of Interior on Trans-Alaskan Pipeline by University of California at Santa Cruz Task Force," to which I contributed:

> Sec. 102(B) declares that the Federal Government shall, to the fullest extent possible identify and develop methods and procedures * * * which insure that presently unqualified environmental amenities may be given appropriate consideration in decision-making along with economic and technical considerations.

The U.S. Santa Cruz report continues that:

> To this end a sufficient statement must at least include the following regarding wilderness values:
>
> A. A detailed statement of existing wilderness and scenic qualities along the route. Vol. 2 presents only two pages of a discussion of the extent of existing wilderness in relation to the proposed route. The specific wilderness and scenic qualities of these regions are described superficially or not at all. The statement should present:
>
> (1) A detailed description of various topographic regions through which route passes such as the Brooks Range, Yukon River Flats, Alaskan Range.
>
> (2) A qualitative assessment of the specific wilderness and scenic features along the route according to the statement "Alaskan Wilderness is unsurpassed in uniqueness." In order to substantiate (or refute) this assertion, the impact statement should determine the qualitative value of wilderness resources along the proposed route relative to other existing wilderness in Alaska

and elsewhere. For example, what specific information is presented on the value of having the Brooks Range remain unimpaired? How does this value compare to wilderness elsewhere?

B. The document should include a detailed statement on the positive effects which would accrue from the alternatives of having no pipeline at all. No mention is made of many important advantages of denying or deferring the pipeline project.

One example of an impact statement which more adequately stresses advantages and disadvantages of maintaining land as wilderness in the U.S. Department of Agriculture Forest Service Environmental Impact Statement for proposed Emigrant Wilderness in Stanislaus National Forest, California. Excerpts are as follows:

"Beneficial effects of maintaining wilderness. Timber: 28 per cent of the area supports timber growth. Leaving this plant cover in a natural state has favorable social, biological, and physical impacts. The esthetics of an undisturbed forest are important to some people. It can be used for scientific and educational purposes as well. Some animals and birds may be dependent upon it for continual existence. The land form will remain in its natural and primitive state. Wildlife: Animals, birds, fish native to the area will continue to live in a natural habitat unmodified by man. The impacts are similar to those described above. Water: Perpetuation of a continued high quality source would be maintained."

Mr. Chairman, despite its weight and quantity of verbiage the final environmental impact statement on the trans-Alaskan pipeline has failed to give appropriate consideration to environmental amenities in general and to wilderness values in particular. In this regard, I feel only Congress can correct the impasse the Secretary of Interior has created by giving total consideration of all isuues related toward the construction of an Alaskan pipeline. Such appropriate consideration must be taken into account:

(1) Description: Objectively describe the probable environmental effects.

(2) Quantification: Estimate in certain terms the magnitude of environmental effects.

(3) Monetization: Place value on effects. In Environmental Defense Fund US TVA 2 ELR 20044 it was decided some resources transcend commercial values, for example, redwoods. Thus next to description, quantifying the environmental effect should be regarded as a required category for adequate consideration of NEPA statements and in this case, congressional review.

Moving on now, Mr. Chairman, I would like to comment on the validity of section 28 of the Mineral Leasing Act of 1920. Some representatives have referred to this statute as "outmoded" and "outdated." I object to this language. The validity of this section was underscored by Justice Wright on February 9, 1973, when he handed down his decision in *Wilderness Society* v. *Morton* 4 ERC. I quote:

The debates in Congress (referring to debates over enactment of Section 28) indicate the reason why Congress was so strict with the rights-of-way provision. Congress at that time felt the granting of rights-of-way to railroads, which occurred in the latter part of the previous century had been much too generous and consequently did not want this to be repeated.

Mr. Chairman, this committee should not be pressured into a hasty removal of a section that served to protect our public lands. A thoughtful judgment on the width limitations of this section should be made only after a full consideration of surrounding issues pertaining to gas and oil lines across Federal lands.

Now I feel I should address myself to the measures before this committee. Being that I discovered duplication of measures before this committee I will discuss them according to topic.

Congressional authority: H.R. 1893: I feel this measure is clear as stated. The intent is for Congress to have final say on the Alaskan issues before this committee. I definitely support such a measure for as I stated earlier, this committee and Congress need to carry out the responsibilities the Secretary failed to do under the National Environmental Policy Act.

Public land law management: H.R. 5524 and H.R. 5541 title IV:

These bills as I understand them, would, among other actions, convey broad discretionary powers to the Secretary of the Interior over management of our public lands. As stated by Dr. Robert R. Curry, professor of environmental geology at the University of Montana, in his testimony to the U.S. Senate Committee on Interior and Insular Affairs, March 27, 1973:

> Congress should not invest more power in the Secretary of the Interior to determine public good for federal lands unless the executive branch is firmly instructed upon the determination of that public good by the public through its Congress.

I agree with Professor Curry that if these measures were passed in their present form the decisionmaking process would be subverted. Our public lands and their management are the Nation's concern. Just next week, a joint Federal-State Land Use Planning Commission set up under the terms of the Alaskan Native Lands Claim Act will hold public hearings on what we, the citizenry feel should be the policy toward 80 milion acres of public land in Alaska. A tragic day it will be when the public can no longer speak out concerning how its lands will be managed.

The 1920 Mineral Leasing Act Sec. 28. H.R. 4651, H.R. 4910, H.R. 5542 Sec. 122: These bills would simply amend Section 28 of the 1920 Mineral Leasing Act. My position on these measures was stated earlier in my testimony. Section 28, the width limitation should be changed only after careful consideration of all the issues revolving around the *Alaskan* v. *Trans-Canadian Pipeline* controversy. No more needs to be said concerning these measures.

Trans-Canadian Route Authorization Bills: H.R. 5750, H.R. 4707, H.R. 6871: As I mentioned earlier, the Secretary of the Interior has created an impasse' by not carrying out his mandate under the National Environmental Policy Act of 1969. The measures that I will discuss now offer a solution to this problem. All three bills require a full hearing to all issues surrounding Alaska Pipeline situation with the exception of H.R. 4707 which authorizes a trans-Canadian line subject to provisions of the National Environmental Policy Act. It is this approach I feel Congress must take, an open distinterested study of all aspects of the issue. However, I would have to object to the time element contained in measures H.R. 5750 and H.R. 6871. As I understand, the provision H.R. 5750 authorizes a new congressional arm, Office of Technology Assessment, to study all practical methods of recovering and delivering of Alaspa North Slope petroleum and report to Congress within 1 year of passage as to the best method and route. H.R. 6871 states a 6-month study

should be made by a Federal task force; 1 year and 6 months are not acceptable. I'm not saying the studies should be continued indefinitely. I am saying, however, a time element means pressure and a fair, objective, study should proceed on its own headway. I do like H.R. 7550's provision for Office of Technological Assessment to carry out the study of issues economic, environmental, national security of the best method of delivering Alaskan oil. Such a mandate would not only test the office's capabilities, but also assure the National Environmental Policy Act provisions be carried out based on unbiased data. If the time element could be worked out H.R. 5750's broadest scope is the best solution to the questions before this committee and urge its adoption.

Now, Mr. Chairman, I would like to share with this committee what the opportunity of testifying here today has meant to me. Two years ago, for a period of a week, I was in Alaska. I was enroute to Anchorage, standing at a spot literally removed from civilization. However, I didn't feel isolated at all, for before I knew what was happening, the appearance of four flocks of Canadian geese came into view. The chance to experience the value conveyed through a land alive with other life forms helps me define my own experience.

I feel grateful for the opportunity of expressing my views and hope the decision made here today will take into account a policy which would protect not only human values but natural values as well. Thank you.

Mr. MELCHER. Mr. Phillips, I appreciate very much the points you raised, both concerning section 28 and the question of whether or not the Secretary has adequately studied the environmental situation and has conveyed that study to his impact statement.

The committee has available the impact statement in its entirety and is struggling with making a judgment on the accuracy of it, too.

It isn't something that we are ignoring.

Your comments along this line are very helpful to the committee. I appreciate your coming here very much.

I have no real questions to ask you. I just want to compliment you on your very sincere and earnest approach to the question and your willingness to share it with the committee.

Mr. PHILLIPS. Thank you.

Mr. MELCHER. Thank you, Mr. Phillips.

Certain letters and statements that have been received for the record will be inserted here without objection.

Hearing none, so ordered.

[The letters and statements follow:]

THE STANDARD OIL CO.,
Cleveland, Ohio, May 16, 1973.

HON. JOHN MELCHER,, *Chairman,*
Subcommittee on Public Lands,
House Committee on Interior and Insular Affairs,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: During my testimony before the Senate Committee on Interior and Insular Affairs regarding matters related to transportation of oil and gas resources from the North Slope of Alaska, I was asked for my views with regard to the timing of a Canadian alternate to the proposed Trans-Alaska pipeline. In the course of responding, I offered to provide for the record

additional support for our Trans-Canada timetable. It occurs to me that you and the other members of your Committee might wish to have the same information.

Beginning on the fifth page of our *Detailed Report on Matters Related to a Trans-Alaska or Trans-Canada Pipeline*, which was submitted to your Committee on April 19, 1973, we set forth our views on the possible timing of a Trans-Canada alternative. We conclude that North Slope crude oil production would be put off for nine or ten years after a final decision barring construction of the Trans-Alaska pipeline is reached and all appeals are exhausted. I wish to emphasize that this estimate does not allow for any delay for United States or Canadian governmental action, environmental opposition, or settlement of native claims in Canada since it is assumed that these issues could be resolved within the period of time required for the route analysis, design, and enginering which must be completed prior to commencement of construction. It is the additional background and support for our estimate of the time required for these pre-construction activities and for the construction phase which I submit for your consideration.

Figure 1 of our report, which for your convenience is attached as Exhibit A, delineates certain activities which must be accomplished prior to startup, shows the sequential nature of various activities, and provides our estimate of the time required to accomplish the requisite tasks. Exhibit B, attached, elaborates upon each of these activities and provides support for our estimate of the time which would be required for completion of each. As shown, a total of ten years is required to accomplish route analysis, design, and construction of the Trans-Canada pipeline. Since the Trans-Alaska pipeline, in its present state of readiness, can be completed in three to four years from the date of approval, the Trans-Canada alternative would delay production of North Slope crude oil for six or seven years.

The participants in the Trans-Alaska project have been criticized by some for not bringing the Trans-Canada pipeline to the same state of readiness as the Trans-Alaska pipeline. There are several reasons why it has not been prudent for us to plan and organize—short of actual construction—for both an Alaskan and a Canadian pipeline including:

(1) The ownership in the two systems would be different due to participation by Canadians in a Trans-Canada line.

(2) Financing plans would be totally dissimilar, due to higher construction costs and to the involvement of the Canadians in a Trans-Canada pipeline.

(3) The tremendous cost of the pre-construction phase for projects of this magnitude precludes duplication. To date we have spent approximately $375 million on the Alaskan proposal. Some of this expense, such as the cost of purchasing pipe, would serve either systems. However, the elimination of common costs would still leave well over $200 million of duplication and waste. Our fiduciary responsibility to our debt holders, our stockholders, and our customers requires that we carefully consider alternatives and that we subject the selected course of action to continuous review. However, our fiduciary responsibility also requires that we avoid duplication and waste of the magnitude which would result from planning and organizing to construct two mutually exclusive projects.

I hope this additional material will be helpful to you in your deliberations on proposed legislation regarding pipeline construction across public land. You may make this information part of the record if you so desire.

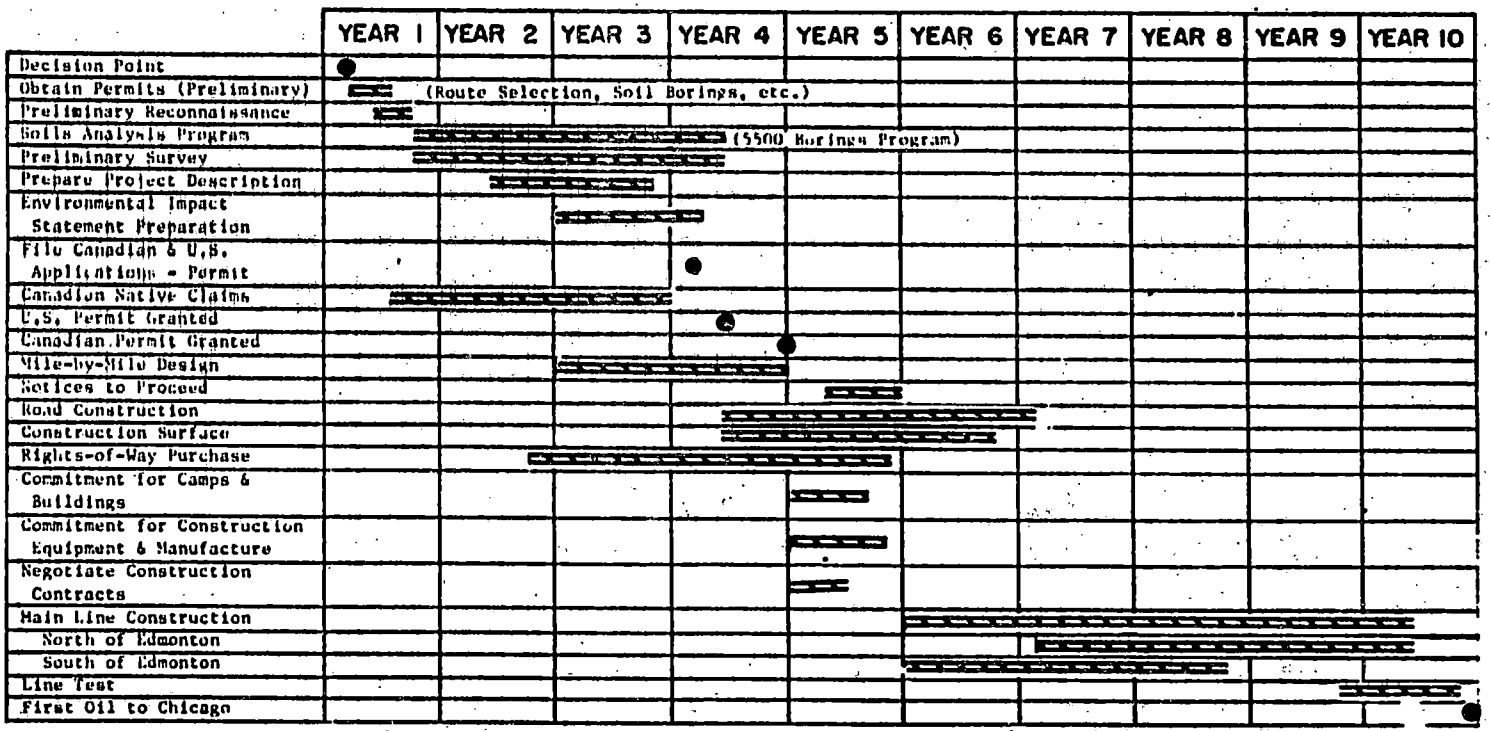
Sincerely,

CHARLES E. SPAHR.

97-839 O - 73 - pt. 2 - 17

ESTIMATED TRANS-CANADIAN TIMETABLE

(EXPRESSED IN YEARS FROM DECISION TO GO THROUGH CANADA)



828

Exhibit A

ESTIMATED TRANS-CANADIAN TIMETABLE[1] BACKGROUND AND SUPPORTING DETAIL

1. *Decision Point and Reorganization—Three Months Required.* (First month of year 1 through third month of year 1)

If a governmental edict to route the pipeline through Canada were to be issued and all appeals were to be exhausted, the participants in the Trans-Alaska pipeline would have to reorganize since companies with potential oil production in the general vicinity of the pipeline's route through Canada or with existing pipeline facilities in Canada might desire to participate in the Trans-Canada system. Canadian requirements of ownership and control, if any would have to be ascertained and taken into account. Ownership and operating agreements would have to be renegotiated and a corporate entity formed to undertake the responsibilities associated with designing, financing, and constructing the Trans-Canada pipeline.

2. *Obtain permits (Preliminary)—Three Months Required.* (Fourth month of year 1 through sixth month of year 1)

Application for United States and Canadian permits would have to be submitted and permits obtained in order to make aerial reconnaissance surveys, on-ground verification of preliminary route selection, physical survey, and soil borings.

3. *Preliminary Reconnaissance—Four Months Required.* (Fifth month of year 1 through eighth month of year 1)

Field work already completed by the Canadian Arctic Gas Study Ltd., and Mackenzie Valley Pipeline Research Ltd. would be reviewed. Preliminary route selection would be either verified or changed by careful field reconnaissance. Additional aerial surveys of basic route, where needed, or alternate routes, where changes have been made, would be obtained.

4. *Soil Analysis Program—Two Years and Nine Months Required.* (Ninth month of year 1 through fifth month of year 4)

A detailed soil boring program would have to be undertaken to determine the proper construction mode, slope stability, differential settlement, and other environmental information needed to meet the pre-construction requirement for a mile-by-mile design. (The implicit assumption has been made that the Canadian requiremnts for soil mechanics laboratory analysis of the cores of each bore hole and the subsequent interpretation of the laboratory data for design purposes will be as sophisticated as the analysis required by the U. S. Department of Interior.)

Alyeska, as agent for the participants in the Trans-Alaska pipeline, developed its design data from approximately 4000 bore holes, averaging 50 feet in depth with core samples taken at various depths throughout the bore hole, along approximately 700 miles of the proposed route which traverses permafrost and discontinuous permafrost zones. The Canadian route would traverse approximately 1100 miles of continuos permafrost and 300 miles of discontinuous permafrost, thus requiring twice the number, or 8000 soil borings. Assuming some of the previous test work would be acceptable, this number could be reduced by approximately 30% to 5500 borings. Depths averaging fifty feet are required since the thaw bulb created by the hot oil line could reach fifty feet over the life of the line, making it imperative to know soil conditions to that depth in order to determine whether above ground or buried construction would be required.

The following description of the physical effort required to drill 5500 soil borings is provided as support for our estimate of the time required for this pre-construction activity:

Initially, 40 drilling rigs would have to be ordered. Contracts would have to be prepared; bids solicited, received, evaluated, and contracts awarded. Winning bidders would have to mobilize equipment and crews.

Soil boring must be carefully drilled to preserve soil samples and cores in frozen condition for laboratory analysis. Such soil analysis includes tests for ice content, shear strength when frozen, subsidence upon melting, and pile creep.

Drilling operations are generally helicopter-supported (one larger unit for transporting equipment and a smaller personnel unit). The two helicopters would service a unit of 4 drilling rigs, leap-frogging them ahead. Three trips

[1] Time expressed in years after a final decision barring construction of the Trans-Alaskan pipeline is reached and all appeals are exhausted.

for each helicopter would be required to move one rig, all support equipment, fuel, and personnel.

It is impractical to drill after November 15 in the frigid Arctic weather, with minimum daylight. Work could commence about March 15. There would be numerous days when little or no progress could be made because of a number of factors, including mechanical breakdowns and adverse weather conditions which would prohibit utilization of the support helicopters.

The crew for a unit would consist of about 15 men requiring food and lodging support involving several hours of commuting time per day. A crew would be needed to clear the brush or trees in the drilling area to enable support helicopters to reach the operation. A mechanic would maintain the drilling, refrigeration, and other support equipment. A geologist in the field, plus laboratory personnel, would be necessary to provide the geotechnic support for the four-rig unit.

A standard drilling rig modified for Arctic work has been found to be the most practical. A 2-½ inch split spoon would run through the 9-inch auger for the purpose of driving ahead to test soil strength. The auger would be replaced with a core barrel and drill for taking core samples.

Working 10 hours per day, each drilling rig would require an average of four days to drill one hole 50 feet deep with core samples preserved in a frozen state. For the total unit of 4 drilling rigs, working 7 days per week, the production will be one hole per day for the 220 days during the time of year when operations could be maintained. Forty rigs (ten units of 4 rigs each) working two seasons, would finish about 4500 holes. The remaining 1000 holes would be drilled in the third season as scattered verification holes, re-route roles, side-hill checks, bridge foundation checks, pump station soils analysis, and re-runs on defective samples.

The cost of drilling each hole would be about $10,000 with the cost of geotechnic field and lab support amounting to $2,500 per hole. Supervision and technical backup would add another $1,500 for a total of about $14,000 per hole, or $77 million for 5500 soil borings.

5. *Preliminary Survey—Two Years and Nine Months Required.* (Ninth month of year 1 through fifth month of year 4)

Contracts would have to be prepared for physical survey and mapping for all civil work including river crossings, road crossings, property surveys, profiles, access roads, material sites, station sites and the main haul road.

6. *Prepare Project Description—One Year and Three Months Required.* (Sixth month of year 2 through eighth month of year 3)

Assuming the description prepared for the Trans-Alaska pipeline would provide a meaningful base, it would require approximately fifteen months to develop the additional information required. This time requirement fits within the time frame necessary to accomplish other pre-construction activities and consequently does not add to the overall time estimate.

7. *Environmental Impact Statement Preparation—One Year and Three Months Required.* (First month of year 3 through third month of year 4)

Requisite information for the Environmental Impact Statement would be prepared and preliminary information would be submitted to the authorizing agencies in the United States and Canada beginning in the middle of the third year. This time requirement fits within the time frame necessary to accomplish other pre-construction activities and consequently does not add to the overall time estimate.

8. *File Canadian and U. S. Applications—Permits.* (Applications filed in fourth month of year 4)

Following preparation of the Environmental Impact Statements (U. S. and the Canadian equivalent) application for permits would be made.

9. *Canadian Native Claims—Two Years and Six Months Required.* (Seventh month of year 1 through twelfth month of year 3)

This time requirement fits within the time frame necessary to accomplish other pre-construction activities and consequently does not add to the overall time estimate. Note, however, that the Canadian Native Claims issue would have to be completed prior to start of construction.

10. *U. S. Permit Granted.* (Permit issued in middle of year 4)

We assume that the main U. S. right-of-way permit would be issued without unreasonable delay.

11. *Canadian Permit Granted.* (Permit issued at the end of year 4)

We assume that the Canadian right-of-way permit would be issued without unreasonable delay, but we allow more time for the Canadian Government to act since there would be more data to consider and review on the longer segment of line through Canada.

12. *Mile-by-Mile Design—Two Years Required.* (First month of year 8 through twelfth month of year 4)

A detailed mile-by-mile design would have to be completed and approved prior to the issuance of U. S. and Canadian notices to proceed with construction (See Item 13). We would plan to complete the mile-by-mile design shortly before the main right-of-way permits are issued, so that we could immediately submit this detailed design to the U. S. Department of Interior (and its Canadian equivalent) for its review and approval. This design would utilize the results of the comprehensive soil boring program.

13. *Notices to Proceed—Nine Months Required.* (Fourth month of year 5 through twelfth month of year 5)

After issuance of the main right-of-way permits, the U. S. Department of Interior (and its Canadian equivalent) would conduct a comprehensive review of the mile-by-mile design. This review would be made to ensure that the design would comply with the rigorous criteria and strict construction stipulations established by the U. S. Department of Interior. (We assume that Canada will require the same review procedure and further, that its design criteria and its construction stipulations would be comparable to those required by the U. S. Department of Interior.) After this review, the governmental agencies would issue notices to proceed with construction for those sections where the design has been given final approval. We assume that notice to proceed on the civil work—haul roads, access roads and camps, for example—would be issued before review of pipeline design is completed. Further, we assume that notice to proceed with pipeline construction would be issued by sections, recognizing that notice to proceed with construction of certain pipeline sections in particularly delicate areas might be delayed pending verification of data.

14. *Road Construction—Two Years and Nine Months Required.* (Seventh month of year 4 through third month of year 7)

Construction of roads in the United States would begin as soon as the main U. S. right-of-way permit and notices to proceed were issued. Construction of roads in Canada would commence immediately after receipt of the main Canadian right-of-way permit and appropriate road permits. A main haul road would be required from Prudhoe Bay to the Mackenzie Valley south of Innuvik. We assume that the Canadian Government would overcome the current opposition by environmentalists which has halted construction of a road paralleling the Mackenzie Valley north to Innuvik, and would complete this section of Canadian highway.

15. *Construction Surface—Two years and Four Months Required.* (Seventh month of year 4 through tenth month of year 6)

A gravel pad averaging two to three feet in thickness to permit movement of construction equipment would have to be laid alongside the pipeline route. It would be connected by access roads to the main haul roads. This gravel pad would allow year-round access by maintenance equipment after operations begin.

16. *Rights-of-Way Purchase—Three Years Required.* (Tenth month of year 2 through ninth month of year 5)

The Canadian pipeline would cross mostly private lands south of Edmonton to Chicago requiring acquisition of pipeline rights-of-way. Land would also have to be acquired for other purposes such as pump stations, terminals, communication sites, block valve installations, warehouses, and pipe storage yards.

17. *Commitments for Camps and Buildings—Seven Months Required.* (First month of year 5 through seventh month of year 5)

Commitments for camps and supporting services would not be made until the main right-of-way permits were received from the United States and Canada.

18. *Commitment for Construction Equipment and Manufacturing—Nine Months Required.* (First month of year 5 through ninth month of year 5)

Commitments for construction equipment such as ditchers, pipe benders, drilling rigs, and automatic welders would not be made until the main right-of-way permits were received from the United States and Canada. Such equipment would not be generally available and would require modification for cold weather utilization.

19. *Negotiate Construction Contracts—Six Months Required.* (First month of year 5 through sixth month of year 5)

Serious negotiations with contractors for pipeline construction would not begin until main right-of-way permits were issued and attendant stipulations were known. This time requirement fits within the time perod necessary for obtaining construction equipment, building camps, and mobilizing crews, and consequently would not add to the overall time estimate.

20. *Main Line Construction South of Edmonton—Two Years and Ten Months Required.* (First month of year 6 through tenth month of year 8)

Pipeline construction would start south of Edmonton after obtaining construction equipment, materials, and mobilizing contractors and crews. Construction progress in the south could reach 4000 feet for each spread per day. Considering the congested area near Chicago, the possibility of adverse weather, labor disruption, and rigid inspection by governmental agencies, we assume that construction would proced at this level for 300 days of the year. Assuming four spreads would begin working after four months of mobilization, it would take over two years to complete the 1550 miles from Edmonton to Chicago. Testing, clean-up, revegetation, and demobilization would add another nine months.

21. *Main Line Construction North of Edmonton—Three Years and Three Months Required.* (Second month of year 7 through fourth month of year 10)

Pipeline construction could begin north of Edmonton as additional equipment becomes available and piling is installed in those areas where above ground construction is required. If, for example, 50% of the northern segment would be above ground, some 160,000 to 170,000 holes of 24 inch diameter to a depth of fifty feet would be required. Assuming 400 rigs, each drilling one hole per ten-hour day during the 220 days available each year, it would take about two years to drill the requisite piling holes, thereby restricting the ultimate progress in the north.

We assume a pipeline construction rate of 2500 feet per day for each northern spread and further assume that climatic conditions would preclude economic construction during the severe winter months. Thus, three additional spreads could complete approximately 220 miles during the first northern construction year allowing four months to mobilize equipment and crews. During the following year, the eighth project year, these three northern spreads could complete another 330 miles. In the ninth project year assuming the four southern spreads would move north, another 770 miles could be finished for a total of 1320 miles. Completion of construction would occur by the middle of the tenth project year.

22. *Line Test* (Tenth month of year 9 through tenth month of year 10)

The medium to be used for testing the line; i.e., gas or liquid, has yet to be selected. If a liquid medium were to be used, testing in the mountainous areas would have to be done by sections. Moreover, if a liquid medium were to be employed that is sensitive to freezing temperatures, there might be certain times during the year when testing would be impossible unless a freeze point depressant were added. Although such depressants would be available, disposing of the test medium contaminated with such depressants would present a problem. In any event, we assume testing could be started during the final stages of construction and finished shortly after completion of construction of the pipeline.

23. *First Oil to Chicago.* (End of tenth year)

Filling the line and debugging the system for routine operations would take three months, allowing for cleaning and fixit repairs.

STATEMENT OF JOHN G. WINGER, VICE PRESIDENT, THE CHASE MANHATTAN BANK, N.A., NEW YORK, N.Y.

Mr. Chairman and members of the Subcommittee. My name is John G. Winger. I am a vice president of The Chase Manhattan Bank in New York and am manager of the Bank's Energy Economic Division. I have been associated with the Bank as an energy economist for the past 23 years. I am providing this information relating to the energy requirements of the United States in the hope that it will be helpful.

At the outset, I want to emphasize the need to keep uppermost in mind this vitally important factor: *Energy must be utilized in the satisfaction of virtually all needs for goods and services.* And, for that reason, nearly three-fourths of all the energy consumed in the United States is used in the process of carrying on the nation's business activities.

A shortage of energy, therefore, is certain to have an adverse impact on the nation's economy. The greater the shortage, the greater the impact. As of now, there is rapidly mounting evidence that many business operations are being curtailed for lack of energy. Unfortunately, that situation is destined by existing circumstances to become much more widespread in the years immediately ahead. In my professional capacity I encounter many businessmen who are unable to obtain all the energy they need. And I can report that they are becoming increasingly concerned, frustrated, and angry about the circumstances that have led to the energy shortage.

When any business activity is reduced because of a lack of energy, the impact is not limited to that particular business. Other dependent or related businesses are affected also. For example, an energy shortage that restricts the production of basic building materials thereby restricts building construction. Consequently, the need for all the other components of a building such as plumbing, electrical equipment, furnishings, etc. is also limited. Unemployment all along the line is another consequence. And retarded business activity and unemployment both result in reduced tax bases, of course, thereby restraining the inflow of governmental tax revenue.

Because energy in liquid form can be applied to a much broader range of uses than other forms, oil is the most needed source of energy. Between 1972 and 1976 the nation's needs for oil are expected to increase by 25 percent. Because the United States has limited spare productive capacity, all of the additional needs will have to be satisfied with imported oil—if possible. That means the volume of imported oil must more than double in size by 1976 and at that time imports will represent as much as half of the nation's total oil supply. The cost of the imported oil is expected to rise from 5 billion dollars in 1972 to 17 billion in 1976. Obviously, an increase in a dollar outflow of that magnitude, without a corresponding increase in the inflow, will have a major impact on the nation's balance of payments.

Environmental restraints are preventing the construction of new refineries in the United States. Therefore, the great bulk of the additional 5.5 million barrels per day of imported oil required by 1976 necessarily must be in the form of refined products rather than crude oil. But we have no positive assurance that such a large additional amount of refined products will be available within that relatively short period of time. There is not a large surplus of refining capacity anywhere in the world. Moreover, there are reasons for doubting that other nations will be willing to have refinery capacity located within their borders utilized for the benefit of the United States. They recognize their own growing needs for oil and are becoming more resentful of the fact that the United States is increasingly competing with them for foreign oil supplies while failing to develop and utilize its own resources. Understandably, they are not sympathetic to our needs when we fail to put our own house in order. So there is a very real possibility that we may not be able to import all the oil we need in the product form our markets require.

Obviously, the United States is faced with a grave situation. And there is an urgent need to bring the nation's reserve productive capacity in northern Alaska to market as soon as possible. The proposed pipeline across Alaska is the quickest means of bringing the oil to market. But even if that line were built a soon as possible, it could not possibly provide relief as early as 1976 at which time the nation's oil supply can be expected to be at a critical stage. At best, the pipeline is not likely to be operating at its full capacity of 2 million barrels per day before 1980. By that time, the nation's needs for imported oil will have risen by nearly 7 million barrels per day. Obviously, if the pipeline is not operating, the dependence upon imports will increase by an additional 2 million barrels per day.

For the same reasons cited earlier in respect to 1976, there is no assurance that we will be able to import as much oil as needed in 1980. Unless we come to our senses and take a much more realistic approach to solutions to environmental problems than we have thus far, new refineries cannot be built in the

United States. And it is not logical to think that we can export our environmental problems indefinitely and expect other nations to do our refining for us. Nor can we be certain that enough crude oil for our existing refineries will be available either. Even now, competition in the world's markets is intensifying rapidly.

Unfortunately, there are no ready substitutes for oil. All other forms of primary energy are also in short supply and are likely to remain so for many years to come. The same economic forces that have caused the oil shortage have also led to a lack of other energy sources as well.

The Alaskan pipeline is by no means a solution to the energy shortage. But it can alleviate the situation. In my opinion, if we do not quickly come to grips with the problem by taking positive constructive steps to enlarge our energy supply, the United States could experience the most serious economic setback since the major depression of the thirties.

STATEMENT OF ROBERT W. SCHRIMPF, CHAIRMAN, GASOLINE COMMITTEE, NATIONAL OIL JOBBERS COUNCIL

My name is Robert W. Schrimpf, and I reside in Alton, Illinois. I am President of Piasa Motor Fuels, a Conoco Jobbership doing approximately 18 million gallons gasoline and fuel oil. I am also serving this year as President of Illinois Petroleum Marketers Association which is a 53 year old trade organization of petroleum jobbers for the State with executive office located in Springfield, Illinois. This year I am also Gasoline Marketing & Motor Fuels Committee Chairman for National Oil Jobbers Council.

As I mentioned to you earlier, I reside in Alton, which is in close proximity to several refineries in the State including, Shell, American Oil and Clark, all located in the Woodriver, Illinois area. In my humble opinion, the continuing postponement of the Alanskan Pipeline has helped to bring about the present petroleum shortage that is now facing the United States. If T.P.A. (Trans-Alaskan Pipeline) had been constructed in 1969 or 1970 as originally planned, we would now be receiving 1.8 million barrels of crude oil per day from the Northern slope of Alaska instead of nothing.

Illinois is graced by the fact that it has several refineries—American Oil at Woodriver, Clark Oil's refinery at Hartford. Marathon in Robinson, Shell in Woodriver, and Texaco in Lawrenceville in the downstate portion of Illinois. In the Chicago region we have Clark at Blue Island, Texaco at Lockport, Union at Lemont, American across into Whiting, Indiana, Atlantic Richfield in E. Chicago and the new Mobil refinery at Joliet.

Illinois also happens to be laced with many pipelines for both finished product and crude oil—in fact, there are 16 or 17 in all. Most of these pipelines are so built to bring either crude or finished product up from the Gulf Coast. There is also one pipeline that comes into Illinois from Canada.

With this bit of background information, I would like to point out that in the fall of 1972, we first began to suffer from the shortage of petroleum products. Along in the summer, we heard of isolated areas in Illinois that were having shortages of gasoline. The first shortages we faced in Illinois was the shortage of fuel oil—primarily in Northern 1/3rd of the State. An early, wet, cold fall had aggravated this situation. Luckily, by mid-January, the good Lord gave us relief from the tight fuel situation in the form of mild weather during the latter part of January, and also during February and March. With this help, we were able to get through the winter without anyone being cold due to lack of oil heat.

Now, as we enter the Spring of 1973, we find that we are becoming very low on gasoline. We have estimated roughly a 10 million gallon shortage for Agricultural uses alone and several others have stated that there is somewhere in the vicinity of 100 million galons of shortage on gasoline. I based my figures upon recent surveys furnished us by the Illinois Agricultural Association for farm accounts and surveys our Association made upon its own members regarding gasoline for the general public. I might add right now that jobbers in the State of Illinois are being put on very strict allotments and many have had their contracts cancelled and there is no place they can turn for additional or new supply.

According to the facts that have been presented, we are going to need 4.45 million barrels of imported crude in the midwest by 1980. Of this, 3.05 will be required from the Mid-East. That means that without Alaskan oil the Mid West will be dependent on the whims of Middle Eastern oil producers for more than 50 percent of its total petroleum supply. If the midwest were to receive their justified portion of Alaskan reserves, the midwest could logically receive over 1.85 million barrels per day. I know that you gentlemen have to decide whether the pipeline is going to come across Alaska or if it is to be brought in through Canada eventually ending up coming in through Chicago. Whatever you should decide, we hope that you will see to it that the midwest receives their justified portion. If the midwest could receive their justified portion of the Alaskan crude, then the midwestern states would only have to be supplied from the Arab countries with only 28% of their requirements.

I might add one other important item—the upper midwest and Illinois in particular have been suffering for the past several weeks from pullouts, allocations, allotments, outright cancellation of finished product. In fact, Illinois is probably suffering as much or more than any state in the Union from the recent actions of major oil companies. We are one of the largest states in the Union yet we are so geographically located that we are the end of certain pipelines which makes it economically unfeasible to continue to market in our region by some companies. Product exchanges have been cancelled and unless they have a good source of transportation, certain major oil companies are contemplating leaving Illinois this year or in the next couple of years.

Gentlemen—a state like Illinois with its tremendous industrial resources, the bountiful farmlands and the strategic location in the heartland of America cannot exist under a short supply of petroleum products. I urge you to proceed with the pipeline from Alaska—whether it be across Alaska or across Canada—with the utmost urgency. TIME IS RUNNING OUT!!!

STATEMENT OF PETER FOSCO, GENERAL PRESIDENT, LABORERS' INTERNATIONAL UNION OF NORTH AMERICA, AFL–CIO

Mr. Chairman and Members of the Subcommittee, my name is Peter Fosco. I am General President of the Laborers' International Union of North America, AFL–CIO.

In the face of the national "energy crisis"—which is now beginning to touch the lives of every American, with the prospect of severe rationing and higher prices of gasoline this summer—it is ironic indeed that one of the world's largest petroleum reserves yet lies undeveloped within our own borders.

If the oil beneath Alaska's North Slope were available today, carried via pipeline and tanker to our mainline, it would be providing us about 2 million barrels per day, or one-third the amount of oil we presently are importing from the Middle East.

The petroleum shortage will have a serious impact not only upon motorists but upon our entire economy. It threatens industry after industry where factories dependent upon this source of energy are already cutting back on production and may eventually have to close. It threatens the construction industry, and thereby the very growth of our Country. It threatens to disrupt truck, rail and air transportation, and thereby out national mobility.

The present crisis underscores not only our need for a continuing supply of petroleum in order to preserve and improve our way of life, but our need to open up a *domestic* source for this precious fuel.

The United States is very heavily dependent upon Middle Eastern countries for oil—far too dependent for sake of our national security. With the precarious political situation that exists in the Middle East, it is not inconceivable that the oil reserves of that area could some day be cut off to us.

At the very least, our Nation's dependence on foreign sources of petroleum is damaging to our economy by fostering an unfavorable trade balance. By importing billions of barrels of oil every year—oil which is largely transported on foreign vessels—we are in effect exporting thousands of jobs.

The Laborers' International Union strongly supports the development of the Alaskan oil reserves and the construction of the long-delayed Trans-Alaskan Pipeline. We believe this is necessary not only to eliminate the threats de-

scribed above, but to stimulate our economy and create many badly-needed jobs.

This effort would generate thousands of jobs in the construction and maintenance of the pipeline, in the manning of transshipment facilities at the Alaskan port of Valdez and in the construction and operation of the 33 new American tankers which would be needed to carry the oil to the mainland.

We are as concerned as anyone with preserving the natural environment, but we are convinced that with proper safeguards the pipeline can be built and utilized without jeopardizing the environment. Indeed, we would insist that this condition be met.

We urge prompt congressional approval of legislation sponsored by Senator Henry M. Jackson, Chairman of the Senate Interior Committee (S.1081), which would provide the Secretary of the Interior the authority to grant a right of way for the pipeline project. This legislation contains strong environmental safeguards, and it would provide for negotiations with the Canadian government for possible construction of a second pipeline route. The legislation would also update provisions of the 1920 Mineral Leasing Act which threatens the status of existing oil and gas pipelines throughout the Country.

We also urge adoption of legislation sponsored by Senator Jackson and others (S.1283) which calls for a crash program to mobilize our scientific resources to develop alternate energy sources.

We view this legislation as vital to preserving our economic strength and our national security, as well as toward achieving many of the goals we have established for our society.

STATEMENT OF PROF. RICHARD A. RICE, TRANSPORTATION RESEARCH INSTITUTE, CARNEGIE-MELLON UNIVERSITY, PITTSBURGH, PA.

Studies on the Economics of Moving Oil and Gas from the Alaskan North Slope, by the Transportation Research Institute of Carnegie-Mellon University and the Canadian Institute of Guided Ground Transportation at Queens University, Ontario.

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SUMMARY

A series of parallel and intensive studies of the economics of moving Arctic oil and gas down a rail-based system in the Mackenzie River Corridor shows that this alignment could well tap over twice the reserves of oil with about half the anticipated investment required in the Trans-Alaska pipeline plan. (TAPS–Alyeska Plan.) If the latter TAPS pipeline is built to move oil to the USA in tankers from Valdez to Seattle—all for about $5 billion including the additional pipeline from Seattle to the Great Lakes—then we would still require an additional 48" gas pipeline anyway, from Prudhoe down the Mackenzie also, for about $4 billion. This $9 billion total scheme will only serve the existing 10–15 billion-barrel Prudhoe oilfields. It cannot later link into the expected new finds in the Canadian north.

The economics of rail-line construction, however, permit both a resource railway for the oil, and a gas pipeline on the same Mackenzie alignment for only $5 to $6 billion, to tap both Prudhoe oil and also up to 25 billion barrels in Canada. Thus it appears that a plan involving a single (multipurpose route)

alignment will tap twice the potential reserves at far less environmental damage than the alternate and basically two-route TAPS proposal.

The various studies of the Mackenzie Corridor to date indicate this route, which crosses no major mountain ranges, to have significantly better construction conditions. This is true regarding topography and terrain; accessibility to suitable glacial gravel fill; and lower snowfall/rainfall conditions. Earthquake, harbor and river spill hazards are virtually non-existent in the permafrost areas. Active wildlife and sensitive ecology problems are far less severe. These factors, coupled with the absence of the tanker-transfer complications, combine to make the Mackenzie Coridor the logical and most economic first choice.

THE YUKON AND THE MACKENZIE CORRIDORS

A 1969 study to analyze the throughput economics of placing a double-track resource railway from Montana up the Rocky Mountain Trench route[1] through the Yukon and the Brooks Range to the Prudhoe Bay oil field on Alaska's North Slope--revealed that investment and delivery costs for bringing crude oil to the north-central USA were quite comparable to the then revised estimates for a Trans-Alaska Pipeline system.[2] The Yukon rail route avoided such complications as: transporting heavy construction equipment over bare haulroads on the permafrost; the "exposed" ridge-crossings of the TAPS route; crossing the lower Yukon River and the main Alaska earthquake belt; the expensive transfer of oil into the tankers at constricted Valdez harbour (with the worry to British Columbia of the coastwise oil-spill threat) and the implied re-transfer near Seattle. Still the Yukon rail route also involved some problems such as a tunnel under the Brooks Range; permission to run 10 miles through the Venetic Indian Reservation; and a location problem around the new Peace River Dam impondment. These factors appeared to be offset by the benefits of a direct back-haul capability to all of Alaska: resultant lower costs of operating the oil fields; and a 70–90 percent reduction of potential environmental damage.

In 1970, studies were begun on a second overland rail route up the Mackenzie Corridor.[3] This route seems to possess all of the advantages of the Yukon Corridor, plus the following points: by staying east of the Brooks-Rocky Mt. spine it does not cross any major mountain range; by paralleling the essential gas pipeline on the same alignment, it reduces to one the number of routes penetrating the North Alaska Slope area; and because of its more central location in the north continent, it carries the potential for follow-on utility to the emerging oil finds in the Mackenzie Delta area, and in the Arctic coastal zones to the east. This route provides a lower delivery cost for oil to the Great Lakes and would also reduce costs and simplify the gas pipeline. It is over 1000 miles shorter than the TAPS route to the Midwest.

There then followed deeper investigations into the construction and operating details of a Mackenzie rail-based oil-delivery system.[4] This showed that not only could a rail-line on this more favorable alignment deliver the requisite 2,000,000 barrels of oil per day—it could do this with but 15–20 trains each way of longer consist than the required 36 daily trains on the hillier Yukon Route. If necessary, by using up to 30–40 longer trains, the Mackenzie line could deliver double the planned capacity of the TAPS pipeline. A second bonus was the emerging probability that the essential gas pipeline, by being built after the completion of at least one of the two tracks, might be constructed for about half if the initial estimate or $1.5 to $2.0 billion less. This makes it probable that both railway and pipeline could be completed for about the same investment as implied in the initial gas-line estimates based upon the lack of ready-access. Finally, the additional throughput capacity of the Mackenzie rail line implies that both the existing Prudhoe USA reserves, and the new Canadian discoveries, could be brought out at the same time.

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[1] This is the route studied by a joint Canadian-American commission after World War II to select an alignment for the needed US-Alaska R.R.

[2] The TAPS system was planned by a consortium of oil cos. in 1968 to move oil to a tanker terminal on the South Coast of Alaska.

[3] The first study was initiated at C.M.U. in the T.R.I.; the second study was a joint effort between Queens Univ. (CIGGT) and the T.R.I.

[4] This portion of the research was carried out mainly by the CIGGT group at Queens University, Ontario, with support from the Canadian Government and cooperation by the Canadian National R.R.

ADDITIONAL BENEFITS OF THE MACKENZIE CORRIDOR

Just recently in the more advanced phases of these studies, consideration has been given to details such as the economic effects of the delay in delivering Alaskan oil; a workable system for fast loading and unloading of unit oil trains; the possibility of lowering the gas-delivery cost to the Great Lakes area through cryogenic tank-cars;[5] (from $1.00 to $0.70 per 1000 cu. ft.) and from additionally powering the liquefied gas trains from "boil-off" gas in the tankcars, as is done on LNG liquefied-gas ships. A final economic consideration is the effect of the Mackenzie Route on the oil royalties that would be received by the State of Alaska. Because these are based upon the market price (in the Great Lakes area) which is "a constant", in relation to well-head value—the lower transport cost implicit in the rail haul versus the TAPS-tanker-re-pipeline route via Seattle means a higher net royalty rate to Alaska under the conventional arrangement.

These economic bonuses—coupled with the Canadian engineers' detailed plans for loading and unloading oil cars via a "carousel system", and the realization that field appreciation during the delay has more than offset carrying costs,[6] would seem to be strong persuaders for consideration of the Mackenzie system idea.[7]

The only drawbacks visible in the present Mackenzie Corridor plans for a joint rail-resource-way and/or gas pipeline are (a) the route runs along the coastal edge of the Wildlife Refuge on the Beaufort Sea, and (b) the initial completion of a single-track to Prudhoe Bay would probably take longer than the TAPS pipeline, by about a year. Upon initial completion, both systems would deliver 600,000 barrels a day. Eventually however, the railway could deliver up to twice the capacity of the 2,000,000 barrel-a-day pipeline. Environmentalists, including the Sierra Club and the Wilderness Society insist, moreover, that a shore route skirting the Wildlife Refuge is the least objectionable alignment, and will receive their wholehearted approval.

At all events, it appears that the combined dual-purpose Mackenzie routeway would thus tap twice as much oil at about half the investment of the present separate TAPS and Mackenzie pipeline plans for gas and oil.

FEATURES OF THE RAIL-BASED MACKENZIE PLAN

A most important consideration in the Mackenzie-Beaufort alignment, where a rail-based system is to be used at first, is that the problems of constructing a parallel gas pipeline after the completion of at least one track, are greatly reduced. It has been estimated to cost only $600 million to build a 48" pipeline from Chicago to Edmonton. However, for the 1700 miles to Prudhoe Bay, the estimate is $3.4 billion if built without a parallel rail-line—but only about $1.7 billion if the railway is built first. This means a railway from Montana to Alaska would cost perhaps $3.0 billion for the 2400 miles; and the gas pipeline about $2.5 billion if built as a follow-on, for a total gas/oil system cost of $5.5 billion.

Another attractive feature about the railway is that as additional oil is discovered in the Canadian North, additional trains—up to a total of 40 per day —can be accommodated on the same pair of tracks. Thus eventually, both Canada and the United States would be able to ship 2 million barrels of oil per day south from the Arctic.

In addition to these general cost and operational considerations, there are several apparent strategic and flexibility factors which would seem to add even greater attractiveness to the Mackenzie line Whereas the specifications of the original TAPS line scheme have come under grave criticisms and delay, resulting in total costs rising from $1.2 to $3.2 billion, the plans for the Mackenzie solution continue to reveal both environmental and investment benefits. Not only would the per-mile cost for a parallel gas pipeline be reduced, but the total costs for the rail system look more realistic and less subject to escala-

[5] Originally, the transport costs per barrel oil to Chicago were estimated at $1.30 via TAPS-Seattle; at $1.35 via the Yukon-Montana route; and 0 via the MacKenzie Corridor. Lately, the TAPS revised estimate is $1.47. MacKenzie route gas by pipeline would cost about $1.00 and by tankcar $0.70 per 1000 cubic feet.

[6] See 1972 study by R. M. Lake, Queens University, Kingsten, Ontario.

[7] Oil delivered at about $1.10 transport cost to Chicago—or let us say $3.50 per barrel market value, represents a cost of about $0.60 per million BTU (with about 5.5 million BTU/barrell.) Present gas pipeline (wholesale) Chicago price is 40c per million BTU (1000 cu. ft.); thus 50c to 80c future price looks good.

tion. Environmental groups have not yet raised a single objection to any of these particulars.

After the construction of a single track to Prudhoe Bay, this scheme still has the flexibility to parallel this with either a second track, or a 48" oil pipeline to increase capacity. If both were done, the throughput capacity would be three times the TAPS system potential in oil, for about the same cost of $9 billion including the gas line. The TAPS system could not accommodate this two-or-threefold capacity increase to the Midwest.

A FLEXIBLE STRATEGY

Mere approval of a particular specified right-of-way from Valdez to Prudhoe for a 48" oil pipeline, does not necessarily guarantee the proper economic development of North Slope oil. First, the haul-road and field construction work must be shown to be living up to these severe restrictions—and within budget. Secondly, the energy industry then faces the problem of obtaining similar approval and financing for the $4.5 billion Mackenzie gas pipeline. Without rail access first on this route—the Alaska section of this gas line will in fact be somewhat problematical along the shores of the Beaufort Sea. Should environmental problems or other delays be encountered here, the Prudhoe field will be handicapped in its long-range development.

It is again and again obvious that the TAPS alignment means two routes penetrating the Beaufort area to do at least double the damage of the single route east to the Mackenzie. Finally, it seems most imprudent for the United States not to be 100 per cent interested in the further developmnt of the great reserves of North American gas and oil felt to exist in the Canadian Arctic.

The existence of an access rail system along a corridor for a pipeline can be seen from the accompanying data in our report to have the effect in Arctic regions of lowering construction costs from up to $3,000,000 per mile to below $1,000,000 per mile for large pipelines. The recent work on the 48" additions to the Interprovincial Pipeline in south-central Canada is costing about $500,000 per mile. This is the same type of line that would cost $3,000,000 per mile where built near the Arctic Circle without access.

Even the Trans-Alpine 40" pipeline from Trieste on the Adriatic to Bavaria only cost about $640,000 per mile while traversing the Alps, including three major tunnels each 4.5 miles long. Despite the forbidding topography, good construction access kept the costs down. On the other hand, the construction of a 48" "SUMED" pipeline to run 300 miles from Suez to the Mediterranean in lieu of deeping the Suez Canal, is estimated to cost about $1,000,000 per mile in relatively flat, open country, due simply to the poor access. This high cost, coupled with the projected transfer costs, apparently has caused delay in the plan. The all-tanker route without transfers around Africa continues to be reasonably inexpensive and more secure.

While pipeline costs are extremely sensitive to access conditions, rail-line costs are not. British Columbia is extending its rail-lines north to the Yukon in its rugged mountain area, through Dease Lake. Costs of such lines are $400,000 to $600,000 per mile single track, or much less than a pipeline if it had to be built first.

COMBINED MACKENZIE VALLEY RAIL AND PIPELINES

With the cost of the total Trans-Alaska route systems, including the sea-leg, to Chicago pegged at about $5 billion, it is thus important to note that a combined one-track railway and gas pipeline could be built up the Mackenzie Corridor for only about $4.26 billion. (See table.) In this estimate, the railway would cost about $1.06 billion and the pipeline, if built after the railway, about $3.2 billion.

Essentially the same pipeline, if built without rail access, would be a $4.23 billion proposition, including some $0.46 billion for haul-roads and transport facilities. Thus it costs no more to include an access railway from Edmonton to Prudhoe, as its increased cost of $600 million over the haul roads is just about made up in the $570 million savings in gas pipeline construction costs.

Finally, if after the rail and gas pipelines were planned, the 48" crude-oil pipeline were to be built also along this route, this 3200 mile line could be built for a little over $3 billion, bringing the whole system cost to about $7.3 billions:

[In billions of dollars]

Summary of the system costs	Separate TAPS and Mackenzie routes	Combined Mackenzie route with railroad
Mackenzie gas pipeline	$4.23	$3.20
1-track Mackenzie RR		1.06
Trans-Alaska pipeline	3.20	
Trans-Mackenzie oil pipeline		3.00
Tankers and Seattle-Chicago pipeline	1.80	
Total	9.23	7.26

SUMMARY

For actually less money than the TAPS plan, a *Mackenzie Corridor* plan would provide three transport systems[*] including a money saving rail backhaul to the North Slope. In addition, this route for oil will tap a potential of 40–60 billion barrels of future petroleum reserves, thus increasing the long-term utility of the systems. Further, the Mackenzie alignment is more susceptible to capacity growth—either in the pipeline or railway modes, and also would consume less of its throughput on the way to market. In short, this alignment truly serves the natural energy corridor of North America, and will tap three or four times the potential reserves with a more flexible yet far less environmentally damaging system incorporating far better energy security for the United States and Canada. The "buy" in terms of billions of barrels of reserves tapped in relation to throughput capacity per billion dollars invested, could be three or four times better for this choice. And this does not include the value of the railway backhaul and resource factor, or the Athabasca Tar Sand Reserves.

RELATIVE MERITS OF THE TWO CORRIDORS

For about $9.2 billion *TAPS Corridor* plans will build two separately encroaching pipelines and two haul roads into the North Slope of Alaska, to tap only 10–15 billion barrels of reserves. This scheme provides no railway or heavy equipment backhaul capability, and traverses three major and two minor mountain ranges. The environmental problems include traversing the Alaskan earthquake belt, the Puget Sound area, and the Yukon River basin. The economic strategy involves two expensive transfers of oil into tankers and back, and an almost certainly higher rate to the Great Lakes area because of the extra thousand miles. Up to four percent of the oil will be used in propulsion engines on the way to market, and the security of the Pacific sealanes in time of increased cold war activity is doubtful. The route has not met with enthusi- economic development of the entire Northwest Areas of the Continent, but it would also greatly accelerate further gas and oil exploration throughout the Arctic. Propulsion needs for this alignment are less than 3% of the oil moving. asm from Canadian officials, and bypasses the other known and potential petroleum resources of the far north. Thus it has minimum follow-on utility after Prudhoe is depleted.

For about $7.3 billion, the *Mackenzie Corridor* corridor plan could provide parallel gas and oil pipelines to the Great Lakes, if a one track access railway were built out ahead from Edmonton. In addition to the Prudhoe fields, this line would tap other potential Arctic area reserves of 40–60 billion barrels, and also for the first time begin a system that could be easily tied into the 370-billion-barrel Athabasca Tar Sands and the 600-billion-barrel Green River Oil Shales. The follow-on utility of the Mackenzie Corridor facilities is thus assured. Not only would the rail segment of the system[*] aid in a more orderly The combined single corridor has the blessings of most Canadian officials and all environmentalists. It traverses no harsh topography, seismic areas, or ultra-sensitive wildlife zones.

With this evidence as to the investment and operational feasibility, the plans for a Mackenzie alignment deserve the most serious consideration. For the

[*] Oil moving system; gas pipeline; rail resource and backhaul system.

[*] If the 1-track access line were upgraded to a resource oil R.R. and double tracked to handle 3-4 billion barrels a day, this would cost about $1.0 billion extra (plus rolling stock and a pipeline, Edmonton to Chicago) making it like the all pipeline oil system a $3.5 billion proposition.

sacrifice of perhaps 12 more months over the TAPS alignment, a system could be achieved at initially half the cost that could tap two or three times the petroleum reserves. Besides getting twice the oil at half the system investment, the Mackenzie plan appears to b far better attuned to both environmental considerations and to the state of Canadian-American relations.

D. G. WALDON, REPRESENTING MACKENZIE VALLEY PIPE LINE RESEARCH LIMITED

The appearance of somebody from Mackenzie Valley Pipe Line Research Limited before this Committee at this time appears to be very timely. There seems to be considerable confusion regarding the so called Canadian alternative to Alyeska and the Mackenzie Valley people should know more about the ramifications of this possible outlet for North Slope crude than anybody. We hope that we will be able to throw some light on the situation. That is why, Mr. Chairman, we accepted your invitation to appear. We are not here to speak against the proposed pipe line across Alaska.

Some of the participants in Mackenzie Valley still feel that the first oil from the North Slope should go to the Mid-Continent area—but most of us joined Mackenzie Valley thinking the line through Canada would be the second line.

Alyeska—or Trans Alaska—as it was known back in 1969 when Mackenzie Valley Pipe Line Research Limited was formed, had already been announced and since that time the owners of the potential production on the North Slope have not wavered in their support of Alyeska. Consequently, lacking any dedicated production and therefore financing, it would be stretching things to say that a line through Canada is a viable alternative to Alyeska at this time.

As far as the length of time before either line could be operational, however, I do not think the line through Canada is as far off the pace as some people make it out to be. It is true that with the companies that own the potential production on the North Slope dedicated to Trans Alaska—and apparently somewhat lesser reserves on the Slope than at one time thought—Mackenzie Valley has not done any more work on the several hundred miles of line that would run from Prudhoe Bay to the Mackenzie River Delta. But the gas people have, and this information would likely be available to Mackenzie Valley.

Also, Interprovincal Pipe Line Company is the logical carrier east from Edmonton, Alberta (refer to system maps in the book you have in front of you), and Interprovincial and Lakehead already possess the necessary right-of-way as far as Chicago and beyond. We do not have multiple line rights in all cases, but are confident they can be obtained. Both companies have already commenced looping their existing system with 48-inch pipe and will likely continue to do so over the next several years. This line—that is a 1,565-mile, 48-inch line from Edmonton to Chicago—could therefore be completed without any undue delay and the cost, which Interprovincial and Lakehead would bear, would be in the $100's of millions, not billions! Trans Mountain Pipe Line is the logical carrier from Edmonton to the West Coast and the capacity of this line would also have to be increased.

It would still take some doing, however, and then of course there is the concern as to whether a gas line and an oil line through Canada could be constructed at the same time.

Mackenzie Valley Pipe Line Research Limited is a Canadian company. As previously mentioned, it was formed early in 1969 for the specific purpose of studying the feasibility of constructing and operating an oil line from the North Slope of Alaska up the Mackenzie River Valley in Canada to Edmonton, Alberta, following a route generally as shown on the map in the front of the book entitled "Arctic Oil Pipe Line Feasibility Study 1972—Summary" that you have in front of you. This "Summary" is a much abridged version of the full report on the four years' work and findings released last January. Two copies of the full report have been furnished your Chief Counsel.

I now propose reading the conclusions listed on page 6. Following this we will be prepared to answer any questions.

(READ CONCLUSIONS)

Having read these conclusions, I would now refer you to the list of participating companies shown on page 2, and state that in addition to Atlantic Richfield, BP Oil Limited and Hudson's Bay Oil and Gas Company Limited

have now left the group. Atlantic Richfield did not agree with all of the conclusions, particularly the cost estimates which they feel are understated. The other companies concur in the findings, however, and with the exception of Trans Canada, all are or were represented on both the Board of Directors and the Technical Committee.

As to the accuracy of the $3.4 billion cost estimate—how long it would take to construct such a line—and whether the Canadian Government is in favour of such a line being constructed—I quickly point to the fact that while extensive research has gone into the project, including a full scale 48-inch test facility at Inuvik, N.W.T., this is just a feasibility study. We have no hesitation in admitting that extensive work still needs to be done, particularly on that portion of the line between Prudhoe Bay and the Mackenzie Valley, before such a line could be constructed. As stated earlier, detailed work on this portion of the line is not being pursued any further and all Mackenzie Valley's on-going research work is being directed at an all Canadian line out of the Mackenzie Delta which many of us think will be constructed some day.

I also hasten to state that while we are here with the full knowledge of the Canadian Government, we do not presume to speak for the Canadian Government. We have reason to believe that their attitude is generally favourable, but extensive hearings would be required.

Regarding the portion of the line that would be in Alaska, I respectfully suggest that if consideration is to be given to a Canadian route, that permission be granted to construct the line through the Arctic National Wildlife Range adjacent to the Canadian border. This would be much less difficult than constructing through the mountains and in our opinion would not unduly detract from the purpose of the Range. Mr. Clute will be glad to speak to this.

My name is David G. Waldon. I am the Vice President of Mackenzie Valley. My principal function, however, is that of President of Interprovincial Pipe Line Company, one of the original participants in Mackenzie Valley.

The two gentlemen with me are Roger H. Clute, Chairman of the Technical Committee of Mackenzie Valley and Donald Wilson, the full-time Research Coordinator. Mr. Clute headed up the engineering team that designed the original Interprovincial system, and until he retired last March 31, was for years our Manager of Engineering. The last year or so, however, he was our Manager of Special Projects, devoting much of his time to Mackenzie Valley. Mr. Wilson is also an engineer with considerable experience in both research and functioning projects. He is on loan to Mackenzie Valley from Imperial Oil Limited. With your permission, these two gentlement will answer the technical questions and I will do my best with the general questions.

MACKENZIE VALLEY PIPE LINE RESEARCH LIMITED ARCTIC OIL PIPE LINE FEASIBILITY STUDY 1972—SUMMARY

CONCLUSIONS

The engineering and research efforts of Mackenzie Valley Pipe Line Research Limited over the past four years have shown that:

1. Construction and operation of a 48-inch diameter crude oil pipeline from the Arctic coasts of Alaska or Canada to Edmonton, Alberta, is technically feasible.

2. Such a pipeline can be built and operated without major or irreparable damage to the Arctic environment.

3. It can be designed, built, and begin operation within a period of four years after a final decision to proceed, providing final government approvals are granted within the first year.

4. Northern residents should benefit from economic development in their region. The size of the project is such that training and employment can be offered to all northern residents who wish it.

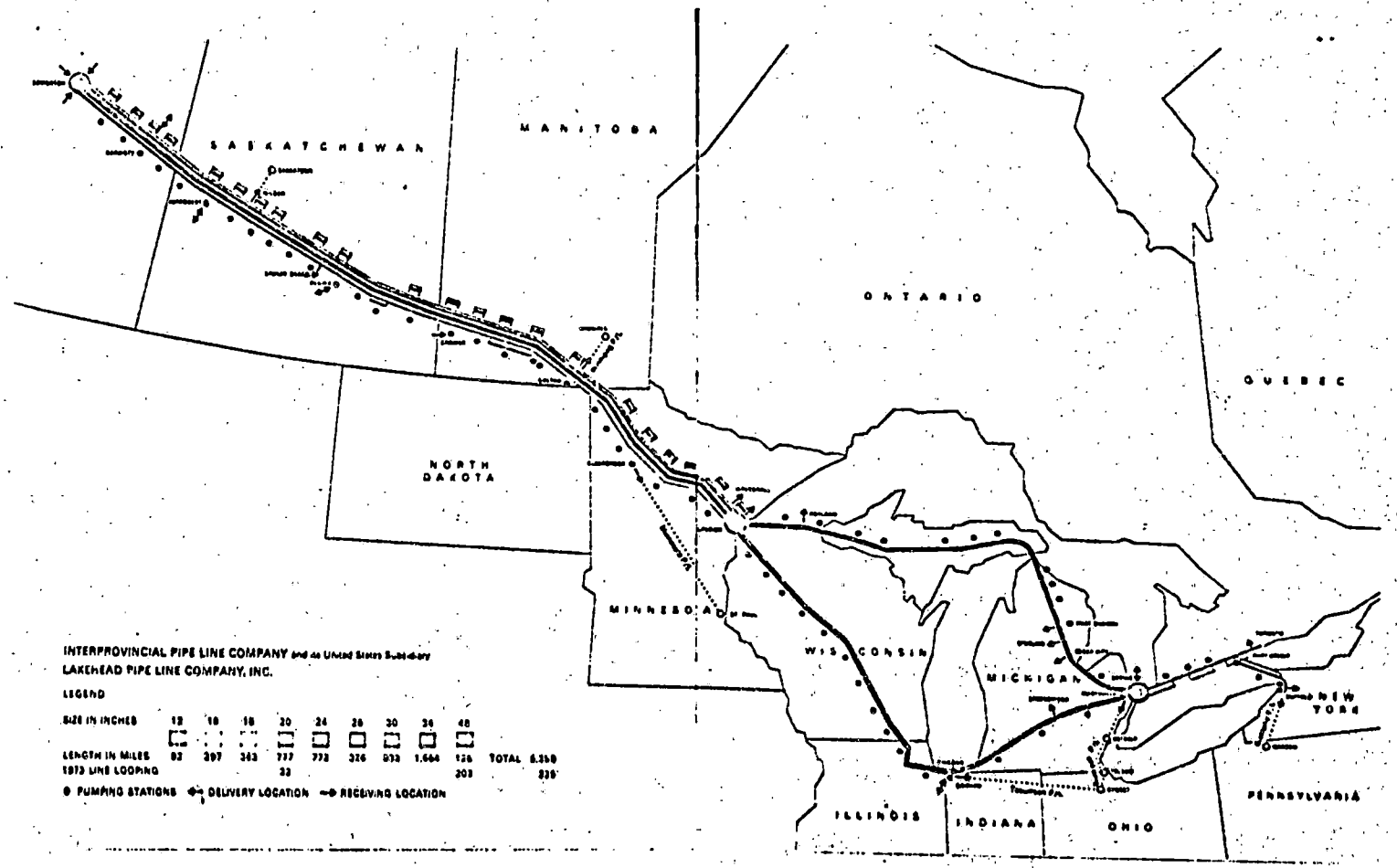
5. The 1738 mile pipeline, with pump stations and terminal facilities, can be built for about $3,400 million on the basis of the construction timetable shown in Exhibit 1.

6. At a volume of 1.8 million barrels per day, crude oil can be transported from Prudhoe Bay to Edmonton on a 7 percent flow-through net income basis at a 30-year average tariff at $1.15 per barrel. It can be delivered from Prudhoe Bay to the Chicago area for an approximate average tariff of $1.55 per barrel, and to Puget Sound at about $1.40.

7. A feasible route, compatible with the concept of a transportation corridor and having minimum effect on the environment, can be established. A general route that meets these conditions has been selected on the basis of aerial and ground reconnaissance and soil soil borings in permafrost areas.

8. The pipeline can be designed to withstand the moderate seismic ground accelerations to be expected along its route. Further research may reveal areas of potential fault displacement that the route should avoid or for which special design would be required.

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SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
NORTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
NEW YORK
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
INTERPROVINCIAL PIPE LINE COMPANY and its United States Subsidiary
LAKEHEAD PIPE LINE COMPANY, INC.
LEGEND
SIZE IN INCHES 12 16 18 20 24 26 30 36 48
LENGTH IN MILES 82 397 343 777 772 326 933 1,666 126 TOTAL 5,350
1973 LINE LOOPING 32 203 235
PUMPING STATIONS DELIVERY LOCATION RECEIVING LOCATION

STATEMENT BY THE AFL–CIO EXECUTIVE COUNCIL

It is tragic that while the United States is facing an energy crisis, including shortages of petroleum products, one of the largest reserves of petroleum—Alaska's North Slope—remains undeveloped.

At a time when the U.S. is forced to increasingly rely on oil imports—with resultant loss in American jobs, damage to this country's balance of trade and potential threat to national security—development of Alaskan oil reserves is blocked by outdated right-of-way requirements and environmental concerns, some real and some imagined.

The fastest, most economically feasible and most secure method of transporting Alaskan oil to the burgeoning American markets is by pipeline to Valdez and by tanker to West Coast ports.

Jobs for American workers would be generated not only in building the pipeline and related plant construction, but also in maintaining it and in manning the transshipment facility at Valdez. Approximately 33 new U.S.-flag tankers would be needed to carry the oil, thus stimulating employment in U.S. shipyards and for U.S. shipboard workers.

However, the key to transshipment is construction of the Alaskan pipeline, and construction of the pipeline depends on Congressional action to give the Secretary of the Interior legal authority to grant the right-of-way.

Congressional action is also necessary to legalize many oil and gas pipelines in all regions of the country which, as a result of a recent court decision, are technically illegal. Unless legal remedy is provided, these pipelines could be enjoined and the jobs of many workers endangered.

Senator Henry M. Jackson, chairman of the Senate Interior Committee, has sponsored legislation (S.1081) that would solve the right-of-way program while providing very tough environmental safeguards and stringent liability requirements for damages caused by the pipeline. Additionally, the bill would insure that the Alaskan oil reserves are used in America's domestic markets. We urge immediate enactment of S.1081 to eliminate a legal obstacle to construction of the Alaskan pipeline which we wholeheartedly favor.

Enactment of the Jackson bill would leave one hurdle to construction of the pipeline—a court challenge to the environmental impact study conducted by the U.S. Department of Interior in accordance with the National Environmental Policy Act. This question now properly reverts to the courts where a decision should be rendered without delay.

Various routes through Canada to the Midwest have been proposed as alternatives to the Alaskan pipeline. But this is not an "either . . . or" question—both an Alaskan and a Canadian route will be needed. But a Canadian route is considered by experts to be at least 10 years away from construction, and time is of the essence. We believe a study of a Canadian route has merit, because the resources in the Alaskan and Canadian Arctic will eventually require two or more pipelines.

Therefore, we support the provision in S.1081 that establishes proper procedures for negotiations with the Canadian government leading to construction of a second, later route.

We recognize that full development of Alaskan oil reserves will not solve America's larger energy crisis. The future stability of this country's economy requires immediate measures to insure America's self-sufficiency in all forms of energy.

To meet this long-range need, we support S.1283, introduced by Senator Jackson and 27 other Senators, that would mobilize the nation's scientific and technological resources for a 10-year, $20 billion crash program to develop alternative energy sources.

If America does not solve its immediate and long-range energy needs, this country will be forced to depend largely on foreign sources with political, economic and national security hazards.

Without sufficient energy resources America will not be able to meet its economic and social goals, but if the Congress acts now it can assure Americans both a better environment and a better life for everyone.

THE COUNCIL OF STATE GOVERNMENTS,
WESTERN OFFICE,
San Francisco, Calif., May 21, 1973.

Hon. JAMES HALEY,
Chairman, Committee on Interior and Insular Affairs, House of Representatives, Washington, D.C.

DEAR MR. HALEY: I have the honor of forwarding to you at the direction of the Conference of Western Attorneys General a resolution relating to the early construction of the Trans-Alaska pipeline adopted at the May 16 meeting of the Conference.

Your consideration and support and that of the Committee on Interior and Insular Affairs is earnestly requested.

Sincerely,

JOHN C. DOYLE,
Conference of Western Attorneys General,
Director, Western Office, Council of State Governments.

Enclosure.

[Resolution adopted by 1973 Annual Meeting, Conference of Western Attorneys General, Council of State Governments, May 13–16, 1973, Scottsdale, Ariz.]

CONSTRUCTION OF THE TRANS-ALASKA PIPELINE

Whereas our nation is facing an energy shortage of increasingly serious proportions, and

Whereas the development of the oil and gas resources of Northern Alaska, among other potential fuel development initiatives, offers the prospect of significant relief from the deepening energy crisis; and

Whereas the Congress has before it various measures which would expedite the completion of an environmentally sound transportation system bringing this resource to the nation; Now therefore be it

Resolved by the Conference of Western Attorneys General in annual meeting assembled on May 16, 1973 at Scottsdale, Arizona, That the Congress is urged to take action to allow the commencement of construction of the trans-Alaska pipeline, under adequate environmental safeguards, at the earliest time possible.

Mr. MELCHER. The committee is now adjourned to meet subject to the call of the Chair.

[Whereupon, at 12:10 p.m., the committee was adjourned, subject to the call of the chair.]

OIL AND NATURAL GAS PIPELINE RIGHTS-OF-WAY
PART II

TUESDAY, MAY 29, 1973

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON PUBLIC LANDS
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:10 a.m., in Room 2359, Rayburn House Office Building, Hon. John Melcher presiding.

MR. MELCHER. The committee will come to order.

This morning we will continue with the hearings on the right-of-way bills. The first witness scheduled is Mr. Stewart Brandborg of the Wilderness Society. Unfortunately, Mr. Brandborg could not attend today and we will reschedule him for a later date.

The next witness the committee will hear from is Mr. Brock Evans, Washington representative of the Sierra Club.

Brock, welcome again to the committee. We have always enjoyed your testimony on whatever particular bill happened to be before the committee, and I am sure we appreciate your testimony again today.

STATEMENT OF BROCK EVANS, WASHINGTON REPRESENTATIVE, THE SIERRA CLUB

Mr. EVANS. Thank you, Mr. Congressman. I appreciate the opportunity to be here. As I think you know, I am presently, of course, the Washington representative for two organizations, the Sierra Club and Federation of Western Outdoor Clubs. As I think you also know, I was the Northwest representative for these two organizations for the last 6 years, up until about February of this year.

That area of my jurisdiction, when I was in the Northwest, included Alaska for most of that time. So I became quite familiar with the places concerned, that concern us, and also the issue we have here today.

It is very important to point out to this committee that the Sierra Club has never taken a stand in opposition to the idea that oil from Alaska's North Slope should some day be removed and used as a source of energy, even though there are compelling arguments that it should either remain in the ground or be used as a source of foodstuffs or for other chemical purposes.

Our position ever since the discoveries were announced in 1968 has been to point out that by every measure, the current route and method proposed for transporting it by pipeline to the port of Valdez, and thence by tanker to the west coast of America, will be

extremely damaging, even disastrous, from an environmental standpoint.

I won't take up your time, except to bring up one point we don't think has been talked about very much, and that is super tanker traffic. One major and extremely serious and unavoidable environmental hazard, for example, is the vast increase in super-tanker traffic along the foggy and stormridden coasts of the North Pacific, which will be the inevitable result of the construction of the pipeline of Valdez.

However much attention we pay to safety features on new super tankers—and we certainly hope that this is done—there simply is no way to compensate for human error. Two tankers collide in San Francisco Bay on a perfectly clear night; A so-called modern U.S.-built tanker breaks inhalf at Long Island a year or so ago; Two drunks forget to shut a valve in Puget Sound; and oil pours into the water. This is the sort of thing that can and does happen all too often, even with the best of intentions. Sometimes safety devices don't work; sometimes they are poorly made; sometimes they are experimental, and don't prove out; and sometimes people just forget or are careless. We all know this, and this is one of the major problems with the present proposed route. In fact, the Honeywell Corp. ran a computer study about 2 years ago and predicted that, if tanker traffic increases in Puget Sound because of the Alaska discoveries, two to four major oil disasters can be assured within the next decade. It only takes one to completely destroy, for a long time, the pattern of life and the resources of a coastal area.

We can avoid all this if we consider other routes and they do exist. And at the very least, we hope we can have a rational decision-making process, so that we do not get stampeded by the oil industries and the cries of "energy crisis"—with the illogical corollary that somehow by immediately approving the Alaska pipeline our energy problems will be solved. We all know realistically that they will not at all.

The Canadian route, on its face, appears to be less damaging from an environmental standpoint. It avoids the major earthquake zones. It avoids the marine leg. If it is properly routed to avoid any contact with the existing Arctic wildlife range, it could conceivably avoid most of the important wildlife—scenic and wilderness resources that are to be found in the general region.

Other possibilities exist also; such as. the proposal for a pipeline which would follow the general route of the Alcan highway out of Fairbanks, or the equally intriguing proposal, now demonstrated to be economical, for a railroad. We should not be locked into any one particular route or alternative just because the oil companies say that this is the only thing to do. We would hope that Congress would use some independent judgment here, and consider the environmental and other factors in a much more adqeuate manner.

We reject the present proposed route, and will oppose it vigorously with all our strength. We would not be a responsible environmental organization if we accepted it. And by the same token, we support a rational decision-making process, with a rational and careful consideration of all the alternatives—not just those pushed by the oil companies. There are lots of bills now, as we know, and some are

complicated, but based on our present brief analysis, Congressman Ruppe's bill, H. R. 7851, has the elements that we can support.

It calls for a study by the National Academy of Sciences, an impartial organization which is not already committed to a certain goal, as is the Department of Interior. It provides for a certain time limit for the completion of the study, so that the issue can finally be resolved, but in a rational and careful manner, not with the stampede and crisis atmosphere that we are hearing so much of today. We can support legislation which will prevent permits being granted for any route or methodology until a careful analysis by such an unbiased organization is made of all alternatives, and which then requires Congress to make the final decision, so as not to leave it up to an administrator whose mind is already made up.

We cannot and will not support any legislation which specifically declares that all judicial reviews and processes are hereby suspended. The judgment of other lawyers has been that the essential requirements of the National Environmental Policy Act will have been complied with if a proper and unbiased study is done, as is already provided in the Canadian study bills. We think it is a height of irresponsibility and dangerous precedent to therefore include in legislations such as this a specific declaration that judicial review is suspended. There are too many enemies of the hard-won policies established by the National Environmental Policy Act waiting out there in the wings with their amendments also if this dangerous precedent is set.

We can't support what amounts to a free hand or blank check, as many of us put it, to grant rights-of-way as he sees necessary. We think this would amount to a giveaway of the first rank. This harkens back, Mr. Chairman, to the whole legislative history behind the Mineral Leasing Act. As you recall, it took three sessions of Congress to consider the present width limitation. Congress finally set the width limitation where it did because, according to the legislative history, it wanted to avoid the blank check it had when it had the railroad land grants in the previous century. That is a very important thing for Congress to keep in mind, to avoid the problem of giving away too much when we don't need to.

The crucial decision over what shall be done with oil from the North Slope at this time, and by what means and in what direction it shall be transported, should be reserved only for Congress. Vast public resources are at stake. The finest remaining wilderness on this Continent is at stake. Some of the finest fishery and wildlife resources are at stake. The most magnificent scenery on the continent is at stake. Congress is the only body equipped under our laws to make such a crucial decision.

If it does not seize this authority, by first requiring that it have access to all of the best information available to it from impartial sources, and if on the other hand it insists upon authorizing the Alaska route primarily because the big oil companies want it, it will have abdicated its authority and will have made a mock decision which will haunt this Congress for years to come.

There has been much talk in recent weeks about the "need" to get Alaskan oil to market "immediately" as if this somehow is the answer to the "energy crisis." We submit that what we really need to ask

curselves is whether we need to destroy much of Alaska to meet these "needs" without even considering other alternatives, or whether there isn't some better and less damaging way.

There are a number of better ways, of which the Canadian route is just one. A recent Science magazine article [1] estimated that we could save at least 25 to 30 percent of the energy we now consume by a series of reasonable conservation measures. It pointed out that a 1-percent savings in energy consumption is the equivalent of about 100 million barrels of oil a year.

Figuring Alaskan oil at the maximum—2 million barrels per day—comes to about 700 million barrels per year. A 7-percent reduction of waste and oil consumption—one-fourth of what Science feels we can easily do—would totally obviate the "need" for any Alaskan oil at all. We are just throwing this point out this isn't necessarily the only way to meet what we see are some of our demands right now.

Another interesting fact comes from the recent EPA ratings of gasoline mileage for cars. We learn from this that a Chevrolet Suburban gets only 7.2 miles per gallon—mpg—while a Chevy Vega gets 21.5; a Plymouth Satellite gets 7.9, and a Plymouth Valiant gets 17.9; a Ford wagon gets 7.9, and a Ford Capri gets 21.6—New York Times, April 26, 1973.

Plainly, our auto industry has the capacity to reduce gas mileage by two-thirds. When we further learn that our automobiles presently consume 6.1 million barrels per day, every day, it becomes apparent that a simple one-third reduction in this amount—the equivalent of driving a Hornet or a Mercedes or a Datsun—would again result in a savings equivalent to the projected ultimate flow of Alaskan oil, and the "need" for it.

These and other options must be considered before Congress makes the vital decision to irrevocably allocate the resources, the magnificent scenery and wildness of Alaska, beyond repair.

Thank you.

Mr. MELCHER. Thank you, Brock, for a brief statement.

I am a little bit confused, though. Ordinarily, I found your testimony to be more explicit and I am confused because I just am not sure where you are at. You state there are a number of better ways, of which the Canadian route is just one. You are advocating the Canadian route, then?

Mr. EVANS. No; I think I say, on its face, the Canadian route appears to be a better way. We have a variety of different information from ourselves, the oil companies, from other parties, too. That is why we are advocating what I refer to as the rational decision-making process, where we have an impartial organization and we all can really evaluate it.

We are not advocating it but, on its face, it appears to be a better route. We would like to have all of the information from an organization we believe in and listen to, as we hope you will.

Mr. MELCHER. You are recommending the National Academy of Sciences——

Mr. EVANS. That is right, or some group like that. I don't think we are locked into any particular group.

[1] December 8, 1972.

Mr. MELCHER. Are they to find out what the Canadians want? Does the Sierra Club. or Federation of Outdoor Recreation Clubs—does anybody know what the Canadian Government wants?

Mr. EVANS. I think that is well put and that is one of the problems we face. We are all talking about what we think the Canadians want; the oil companies have certain statements about what the Canadians will or won't do. I believe some of the bills, including Congressman Ruppe's bill, directs the State Department to commence negotiations to really find out in a serious and direct way.

We would like to see this, too. Let's have a study like this. Let's have the Canadians down here.

Mr. MELCHER. If we are going to have a study, do we first of all have to determine whether the Canadians are interested in it?

Mr. EVANS. Sure. But we can pass the legislation and authorize our State Department to conduct negotiations in the normal way to find out. I think we already have plenty of indications from their public statements of their Ministers they are deeply interested in it. But we can go through the normal diplomatic channels and find out.

Mr. MELCHER. We are very much interested in whether or not the Canadians are considering a Trans-Canadian route, whether or not they have a problem as has been pointed out by Congressman Meeds, our colleague on this committee, which is the settlement of the Canadian natives' claims, and whether or not it is true, as Congressman Meeds conjectures, that there can be no Trans-Canadian pipeline built until that settlement was arrived at, which would be several years down the road.

Now, this committee has invited discussion with Canadian Government officials so we can be advised whether or not there is a possibility of a Trans-Canadian pipeline within the foreseeable future. If they say we are undecided on whether we would grant a pipeline permit across this area, then I think the committee has part of our answer and we must then concern ourselves with the timeframe.

Your position is that you do not oppose bringing oil out of Alaska, if I understand your testimony; it is to the effect that you want to come out of there with the least environmental damage. Is that correct?

Mr. EVANS. In essence, it comes down to that ultimately.

I tried to explain in my statement, we are an environmental organization. We wouldn't be responsible to the land, the thing we care about most, if we didn't try to point out to you, the decisionmakers, what you do. It may turn out from the information that the Canadian route has environmenal problems, too. We can point it out to you.

I think your citation of the Canadian natives' claims problem would appear one to illustrate the things that concern us, too. We heard, contrary perhaps to what Congressman Meeds said, in that in Canada the native claims problems are not subject to go into the court. Canadian law is quite different. I know when I was a lawyer in the Northwest, going up to Canada, their laws were quite different from ours.

It can't be done by the present process, I don't think.

Mr. MELCHER. It hasn't been done up to now to the satisfaction of this committee, and that is the reason why we are inviting direct

discussion before the committee, direct testimony before the committee, by Canadian officials, so we can be advised whether or not there is a possibility of the Canadian pipeline within some timeframe.

Now, if there were a possibility, what is your recommendation on how to bring the pipeline out of Alaska?

Mr. EVANS. If there were a possibility of the Canadian route?

Mr. MELCHER. Right.

Mr. EVANS. I would hope, if we proceed with a rational study process by a group, whatever it may be, that we could all believe in some way or other, we would have some of the answers there. We would know what routes are possible with minimal environmental damage, with environmental interference with wildlife patterns, or whatever.

We would also know, at least, more about other technologies than the present cut-and-fill method. I call it "digging a trench and burying it over gravel." There are many other ways of doing it. I think we would have all of these things before us and at that time we could probably make a choice if we had to as an environmental group.

Mr. MELCHER. There was testimony a week or two ago that the pipeline routing should be through Canada, that in getting it out of Alaska, it should be laid on the floor of the Arctic Ocean and then be taken over to McKinsey Estuary and brought up out of the ocean there and across Canada.

There may or may not be validity to such a suggestion. Others have testified they want to bring it down through Alaska, and I would assume across that wildlife refuge and then bring it into Canada. If we can—well, I gues we can just say this: This committee has two things before it right now that must be resolved.

One is whether there is a possibility of the Canadian route, and get that information from the Canadian Government; and, second, to then evaluate the timeframe. If it is important to bring this oil out of Alaska in a certain number of years, this committee is going to have to consider that and have to make that judgment. Those are the two things I think confront the committee directly.

I have one or two other points that I would like to bring up regarding your testimony, very briefly, and that is, you mentioned super tankers. Do you mean by this the extremely large oil tankers, ocean-going tankers, or what are you referring to?

Mr. EVANS. I see your point. This goes back to a certain extent to a technical definition. We recall in World War II the average size was somewhere around 16,000 tons. That was considered a large tanker. No one even talks in those terms any more. They say it is only a super tanker of 300,000 or 400,000 tons. I think for our purposes in the things that concern us, again speaking from my experience in the Puget Sound, let's say anthing over 100,000 tons is a super tanker.

It is an enormous, huge thing, almost 10 times as large as what they had in World War II.

Mr. MELCHER. We had suggestions made to the committee that radar equipment can be established, both along any dangerous routes from Valdez down to the continental West Coast, and that radar in our ports, continental ports, where the oil tankers would come to and also on the tankers themselves. I am not knowledgeable in this

subject and I just wonder whether you can contribute anything on those points?

Mr. EVANS. I think, to a certain degree, I can. I tried to make the point first in my statement that we hope all of these things are done, but you still have the human error factor which is the basis of the Honeywell Corporation computer prediction, that you are going to have these disasters. We have them colliding on a clear night and breaking in half, American-made, best devices. These things will happen.

The more you increase the traffic, the more they are likely to happen. I hope we do all of these things, but I could get my hands on some of the data and statements on Puget Sound. They were talking about a specific radar system to guide tankers in and out and there are still some problems with it.

Again, you can have a lot of experimental things going on but it just takes one time an done time in an area like the Puget Sound where the current is going south and it takes maybe years to flush out. This is a terible problem many people feel out there.

I hope they do these things but you are still going to have the disasters. Even the Department of the Interior predicts this in their impact statement.

Mr. MELCHER. Regardless of what we do with Alaskan oil, we are going to still be bringing a lot of oil by tanker into the United States. Is there any particular difference—you mentioned Puget Sound quite often and I am sure because you are familiar with that area—but is there any difference on west coast ports where the Alaskan crude would be brought by tanker, compared to, say, east coast ports where Arab countries' crude is brought?

Mr. EVANS. I don't know enough about the subject to have that much expertise in it. But what we are primarily talking about on the west coast is the rate of increase. Granted, there is always going to be some and perhaps always will be oil spills. But do we need to increase and raise the hazard if there are other ways of doing it?

Mr. MELCHER. Quite well taken.

The gentleman from California.

Mr. JOHNSON. No further questions at this time.

Mr. MELCHER. The gentleman from Oregon.

Mr. DELLENBACK. I reserve my question.

Mr. MELCHER. The gentleman from Ohio.

Mr. REGULA. I reserve.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. Mr. Chairman, it has been stated by my good friend here about the Puget Sound. I just came from the Puget Sound this week and have some testimony, as a matter of fact. They have 10,000 movements of oil a month. Ten thousand movements of petroleum products for distribution. They are using the radar system and they are using the modern technology. Yet, as far as they can foresee in the transportation of oil from Alaska—I do believe there is a danger, but I also have a great deal of faith in man in his ability to meet that danger.

I think the good chairman mentioned the fact that if we don't move Alaskan oil with some speed, we will be moving the same amount of oil with foreign tankers and we have no control over foreign tankers, regardless of what legislation we pass.

I also talked to the Navy concerning the new routes that possibly could be used and the use of TELSAT communication, whereby we actually create a highway and with a master control board, they know exactly where every ship is, what speed they are traveling, and every possible ship that is going to be crossing that route. This is just the beginning.

I agree with you, there is human error. There is human error in everything we do and there is a chance of the possibility of mistake. But we have to weigh those chances against other alternatives. The other alternative is no control at all. Anl we are going to use oil, whether the Persian Fulf or Mideast states, whatever it is going to be, and I prefer control over that oil.

I also note in your statement that you say you "cannot and will not support any legislation which specifically declares that all judicial reviews and processes are hereby suspended." In the last sentence, it says that "There are too many enemies of the hard-won policies established by the National Environmental Policy Act waiting out there in the wings with their amendments also if this dangerous precedent is set."

I think possibly, as I mentioned before, if we don't do something as a Congress, that you are in a position of losing everything you won. You may not agree with this, but I have seen people react in some very negative manner when the pressure is put to them and the pressure is being put to them with the lack of fuel. I would hate to see you lose the stride you have made.

I think we could work this out much better if we were to be unified in an effort and desire to move the Alaskan oil the safest way. I am a little interested, probably my bill is considered one of those that would override your accepted "judicial reviews and processes."

This is more of a statement, Mr. Chairman. I apologize for that, but it should be put on the record, the amount of oil moved in the Puget Sound, and I think your statement as far as delaying factors, as far as the time frame, is an important part of this committee.

Mr. EVANS. I appreciate your comments, Mr. Congressman. I know the concern you have. A couple of things struck me. First, if we are having 10,000 movements of oil in Puget Sound right now, why haven't we had these measures before this? I can, if the committee so desires, attempt to put in your hands some data about the amount of collisions and oil spills going on right now.

I recall reading something in the Puget Sound press a year or two ago, something like 15 or 20 spills every month, large and small, most of them quite small, but it goes on with less than 10,000.

Mr. YOUNG. Point of information. You are saying spills and you mentioned collisions. That is what I am referring to. There are going to be spills regardless of what you do, but as far as collisions, where the real danger lies, there has been no collision since they put in this new system. Ten thousand is more movements than we will have, if you are talking about movements from the Alaskan pipeline. That is a lot of movement.

Mr. EVANS. The other part of that, though, as I attempted to point out, there are other ways of doing this. You don't have to have tanker traffic coming into Puget Sound.

Honeywell Corp. does base its prediction on the basis of collisions. This might be good data for the committee to have and I will make an effort to get it.

The other part about the precedent does concern me deeply, as I know it does you, and we just can't win—you are right, we have to disagree with you—we can't accept the idea the way to save everything we gained is by setting up a precedent to lose it. I know that isn't your intention, but this is how we see it, as I pointed out in my statement.

I don't think we meant to say judicial review is suspended. Our lawyers have advised us the requirements will be had. Why do we have to set up a precedent? This is what concerns us and I know you disagree with it.

Mr. MELCHER. Thank you very much, Brock, for your testimony. If you can supply the committee with information on Honeywell's data, I think we would be interested in receiving it.

Mr. EVANS. I will contact the Coalition of Puget Sound and see if I can get it.

Mr. MELCHER. The gentleman from Oregon.

Mr. DELLENBACK. Thank you, Mr. Chairman.

Brock, we are pleased to have you here. I am sorry to have been late getting here from my office.

I would first express for the record a concern over one statement that you made on page 4 of your testimony. You don't say it expressly, but there is a clear implication, that if the Congress does insist upon authorizing the Alaska route at this time, it will be "primarily because the big oil companies want it."

I hope that you don't mean that would be the only conclusion that would be reached in the event the Congress were to decide, as it has the responsibility to decide, as to what ought to be done here.

I am not saying what we ought to do. I just resent, as a Congressman, having the implication laid out that if we go any way but the way you or anybody thinks we ought to go under a given set of circumstances, that somehow there is something improper about that. I may be inferring what you don't mean to imply and I hope that is the case.

Mr. EVANS. I appreciate what you say, Congressman. I guess what I really meant there was we see the vast majority of the pressure, impetus, money for advertising, all of the other pressures we all face and certainly your decisionmakers, coming from that source. I don't think it implies something is improper, but if we remove all of the pressure from that source, we wouldn't have the same issue that we do today.

Mr. DELLENBACK. Let me say subjectively, as one Member of Congress who considers this issue a very important one that I am not particularly moved by what the big oil companies do or don't do in this particular circumstance. I was, frankly, and I say this for the record, intrigued by the fact that about 10:30 last night I got a call at my home from some place in Texas, and it was an oil company conducting a telephonic poll, asking how people react to oil companies.

They named a series of companies and asked what the impression was, from a scale of +5 to −5, on oil companies?

They are evidently undertaking at this time, not because of the Alaskan question at all, but because of the general petroleum question, quite a survey. I don't know how they happened to call my home. They never asked who answered the phone, it could have been my 17-year-old daughter. They just started right in with the questions as soon as somebody picked up the phone.

But it isn't the attitude of the big oil companies that influences my thinking on this. I must say, I am influenced by the fact the Interior Department has made apparently an exhaustive study of this. One may or may not agree with the conclusions but there clearly has been a great deal of effort on the part of other Government agencies and by the Department which has the principal responsibility in this particular regard.

That leaves me still somewhat short at the moment of the conclusion that the Congress ought to legislate, as has been proposed, the whole environmental issue. But my reluctance to have the Congress regulate today the environmental issue is the same thing that concerns me about the Congress making that decision 6 months from now or 9 months from now.

I think that the decision is so important that whoever decides it ought to look very carefully at all of the environmental complications. This takes a lot of technical expertise. It takes understanding of the territory, it takes a lot of things which I, as one Member of Congress, do not have at this particular moment.

I don't expect to have the time to be that kind of an expert 6 months from now with all of the other pressures that get in the way between now and then.

So the same thing that slows me down from going the road that you clearly can't want the Congress to do, namely, to decide right now that we ought to wipe out all environmental issues and say, okey, we put the stamp on everything the Interior Department has done, let's go ahead with it just as it stands, is the same thing that slows me down with the concept of 6 months from now, as one of the other bills which is before us proposes, or 9 months from now, that we then, as a Congress, decide the issue.

I don't see us as having that technical expertise. I think we are going to have to make certain policy decisions and then rely upon somebody. Who that somebody is may be the question.

Would you have any reaction to these series of comments made, really, rather than questions I put to you?

Mr. EVANS. I have several. I think they are well taken. I know it troubles you and all of the others who have to finally make this decision. But one is relative to your point about the Department of the Interior. Can they really make use of data, as we see it, from an agency that has its mind made up already? Had its mind made up in the beginning? How accurate is the information?

Mr. DELLENBACK. And it is not openminded and as objective as you?

Mr. EVANS. Who can say? I am not saying we make the study. I am saying, let's have somebody we can all agree on make the study. I wouldn't necessarily want everybody to believe what we do, just as the Department of the Interior. Let's have somebody else do it.

A flyer went around and said the Canadian route was four times as long. They forgot to say there is a pipeline from Edmonton to Alberta into the United States. That is half of the distance right there. There are other things about river crossings and so on. But let's get the information from someone else. Granted, no one here can be an expert—you, ourselves, or anyone else—on all of these situations. But Congress has taken upon itself the authority for decades now to decide allocations of land, of wilderness resources, scenic resources, wildlife. It has taken upon itself the authority to decide protection of these resources. You are experts to that extent and you do these things. I submit we have the same resources at stake—potential wildlife, parks. fisheries resources.

The fishery unions are upset.

These things we have taken upon ourselves and I submit this is proper and I hope you will look into it even though the final decision may be based on what you have available and what we have for you is the best available. We don't think you have it now.

Mr. DELLENBECK. Your testimony, Mr. Evans, really goes to the environmental issue almost exclusively. Do you raise any questions about the information which has been given to this subcommittee in the field of foreign relations? In the field of economics? In the field of national defense?

Do you take issue with any of the testimony which has been given to us prior to this date in those other fields, international balance of payments, et cetera?

Mr. EVANS. I wish I could claim some expertise in that field. We are an environmental group and we try to point out to you what the environmental problems are. I have my own opinions and have done a good deal of reading. It appears to me evidence has been presented to you better by other experts on both sides of the questions, really.

I think there is compelling evidence to go the way we are advocating on all of those bases.

Mr. DELLENBACK. But your own personal testimony is advertently tied to the environmental issue rather than to these others?

Mr. EVANS. Basically, yes, although others who are also environmentalists have pointed out some of these other issues, too. But I think our job as a responsible environmental group is to point out these environmental consequences of what you are faced with.

Mr. DELLENBACK. I notice your testimony closed with its comments on this issue of conservation, and I find myself in growing agreement with the conclusion that we must do something on the conservation side. We can't solve the energy crisis problem even in the petroleum field alone, gas and oil field, or in this whole area, by just boosting supplies ad infinitum. It just can't be done.

As we move forward in this related but somewhat independent field of conservation of the raw material and conservation of energy, we will look for the sort of strong support that we know you feel your group will be able to give, and as other pieces of legislation come up. we will look forward to seeing you again if it comes before this subcommittee.

Mr. MELCHER. The gentleman from Ohio.

Mr. REGULA. Thank you, Mr. Chairman.

Following up the comment by my colleague, Mr. Evans, do you have a suggestion of how we might accomplish these conservation measures that you touch on in your statement?

Mr. EVANS. A variety of measures that start getting to it have been proposed, various taxing mechanisms, horsepower taxing, if you will, pricing mechanisms for energy sources. I don't have all of these at my fingertips, but I would be very glad to get you copies of recent statements by our new president, Larry Moss, a nuclear engineer living in Washington, D.C. There are a variety of mechanisms here and I will make certain you get that material.

Mr. REGULA. Are you promoting these with your own members?

Mr. EVANS. Yes, certainly.

Mr. REGULA. Another question. You talked to the environmental issue generally. Would you agree that the right-of-way issue is not really involved in the environmental issue and would you object to the increasing of the right-of-way since that does not really go to the environmental issue?

Mr. EVANS. I appreciate that question. I had the occasion to get rather extensively into it in the Senate. Senator Jackson is considering his right-of-way legislation there. As I did so, I was required to get into the legislative history of the Mineral Leasing Act. We became convinced that the right-of-way bills and their granting of authority to the Secretary of the Interior to rights-of-way have deep environmental implications. So we do have some concerns about this.

Some of our people have used the term "blank check," which gives him authority to give whatever kind of right-of-way he wants. I think I got into this a little before you came.

The legislative history points out the Mineral Leasing Act went through three sessions of Congress—1916, 1918, and 1920, before it finally was passed with the right-of-way decision that concerns us. It came out of committee with 10 feet at either site, 15 feet, and back and forth like this. Finally, it was set at 25 feet.

The reason it was set at that point and no higher, and set at a limit at all was because Congress wanted to avoid the previous give-aways—and this is the term they used—in the railroad land grants of the latter part of the 19th century. They wanted to avoid unlimited grants to give away public land. I think it is an environmental issue, too.

Mr. REGULA. Would you object if a right-of-way of sufficient width to construct this line were granted so that that issue could be behind us and then we would deal only with the environmental issue?

Mr. EVANS. I see your problem here. The difficulty I have with that would be that there has been presented to this committee and to the Senate a lot of evidence about other technologies. We don't have to build it. The oil companies say we have to build it right now.

Mr. REGULA. You are still speaking of the environmental issue.

Mr. EVANS. This is an environmental issue, right. So we would be concerned about a grant of right-of-way, let's say, large enough to accommodate what the oil companies say they have to have to build the present pipeline we are talking about right now.

Now, that is environmentally damaging, too. There are other technologies presented before you today and presented in other forms

by other ways of building such pipelines with the same right-of-way we have right now. This is archaic technology, so I have been told. I am not a scientist but I have been told this.

Mr. REGULA. Assuming that the environmental issue in construction is dealt with separately so that just the actual number of feet involved was not the issue, would you then support a bill that would provide the right-of-way and put that issue behind us so the committee could then deal with the environmental issue? As I understand your testimony, that is your real concern.

Mr. EVANS. To provide the right-of-way for this specific pipeline?

Mr. REGULA. Right.

Mr. EVANS. To make sure I understand, you are suggesting that it be right-of-way sufficient to accommodate the road and the gravel pad and construction facilities they are talking about right now?

Mr. REGULA. Right.

Mr. EVANS. Our problem is these very environmental consequences which are unnecessary in view of our technology to build even a pipeline across Alaska.

Mr. REGULA. Isn't that really part of the environmental issue and not the number of feet involved in the right-of-way?

Mr. EVANS. That is right.

Let me try this. Supposing we all agree there is another technology that is on tracks, on top of rubber tires, or whatever it might be to do it, but it is still going to take a larger right-of-way. Would we support something like that? I think we would support something that would deal with it on a case-by-case basis, which is what Congress said in effect in 1920—let them come to us on a case-by-case basis. So we don't have any problem ultimately on something like that.

I am trying to get at your question; I think that is it, or is it?

Mr. REGULA. Do you feel the present environmental protection impact statement is inadequate in its scientific basis?

Mr. EVANS. I have not read it in detail. The parts that I have looked at, and from what the attorneys looking into it tell me, it is very inadequate.

Mr. YOUNG. Would you yield?

Mr. REGULA. Yes.

Mr. YOUNG. If it is so inadequate—Judge Hart ruled it was adequate, did he not?

Mr. EVANS. I recall that is right.

Mr. YOUNG. Wasn't it appealed to the appellate court?

Mr. EVANS. Yes.

Mr. YOUNG. And they failed to act on it and acted on an archaic part of the law?

Mr. EVANS. That is right.

Mr. YOUNG. If it is so inadequate, how come the judges don't deal with it?

Mr. EVANS. Because they deal with what they consider to be the gut question first; that is, was it an illegal thing on its face? They will eventually get at the environmental question.

Mr. YOUNG. Isn't this what Congress set down, a set of rules, stipulations in law? Isn't this what they rule on when it is taken

to court? Isn't this what they are going to rule on in the future when it goes to court again.

Mr. EVANS. The Mineral Leasing Act?

Mr. YOUNG. No. You appealed it twice, have taken it to court twice on the environmental issue, and twice now they have failed to rule in your favor. So apparently it must be a completely good study, according to the law.

Mr. EVANS. I disagree. In the first place, the Sierra Club is not a party to the case. It is not our lawsuit. It is some other organization's lawsuit. I know about it secondhand or thirdhand. I wouldn't say the fact the court didn't act on it the second time around on appeal meant they felt it was well done. That isn't supported by any conclusion of law.

Mr. YOUNG. If you yield one more time. I notice from your testimony that you would support the Ruppe bill, which calls for a nonpartial study. If that study found that the Alaska pipeline was environmentally the sounder of the two routes, do you foresee any future action in court on your behalf?

Mr. EVANS. I think that is a good question, well taken. All I can say is we have not been a party to the litigation so far, that lawyers who are parties advise us the issue is the environmental issue after the Mineral Leasing Act. I wouldn't see any grounds——

Mr. YOUNG. You keep referring back to the lawyers in the environmental study. If the study said the Alaskan route was the best route, then you don't forsee on your behalf, on behalf of your clients, any lawsuits?

Mr. EVANS. Of course, my clients aren't really my clients. I work and believe in the organization. But they would make the final decision. I wouldn't see any grounds to it and I would tell them so.

Mr. YOUNG. Thank you.

Mr. REGULA. Mr. Evans, on page 2, you state: "The Canadian route on its face appears to be less damaging from an environmental standpoint." Then you go on to say, "If it is properly routed to avoid any contact with the existing Arctic Wildlife Range, it could conceivably avoid most of the important wildlife, scenic, and wilderness resources that are to be found in the general region."

What document or what study or what scientific basis do you have available to make that statement and, if so, could it be made available to us?

Mr. EVANS. I will see what I can get for you. I believe that the Canadian Wildlife Federation has done some analysis of the Canadian route. This is what I was referring to here, if it avoided the Arctic Wildlife Range. I think it can be done.

Here, again, this points up what we are concerned about. Let's get that data from someone we can all believe in. I tried to base my statement on what we know right now.

Mr. REGULA. That is all, Mr. Chairman.

Mr. MELCHER. The gentleman from Nevada.

Mr. TOWELL. One question. On page 4 of your testimony, about the middle of the page, "We submit that what we really need to ask ourselves is whether we need to destroy much of Alaska to meet these 'needs' without even considering other alternatives."

In your opinion, when you say, "much", what area are you really talking about when you say "much of Alaska?"

Mr. EVANS. I think, in effect, I am talking about the great bulk of the North Slope and I will tell you why. Last night for dinner we had over some friends from Alaska, in Anchorage. They talked about a number of things, including what they felt was a shifting opinion of the average Alaskan concerned about the economic impact, higher prices, and so on, of building the pipeline itself.

But they also talked about what the pipeline would do, not within the rather narrow corridor, but for further development and further damage to the other resources in the North Slope. He described the area of the North Slope as being as large as the State of California, which is stil magnificent wilderness which has feelings and emotions you have when you go into it. It still supports native culture, still had scenic wildlife and other environmental values very important.

He pointed out if the pipeline is built as presently proposed, this would open up the whole area and we would have another "gold rush" thing like the United States in the last century. That is why we feel the impact is far more than the present corridor.

Mr. YOUNG. How long has your friend been in Anchorage?

Mr. EVANS. Three or four years.

Mr. YOUNG. Does he belong to the Sierra Club or the Friends of the Earth?

Mr. EVANS. I don't think he does.

Mr. YOUNG. I would like to have you check that out, when he says there is a shifting opinion. I am a politician; I want you to be sure. I know how the opinions shift. This is my business, just like your business is to represent this group. We run continually an opinion poll and out of 300 people across the State, including the group you are talking about, the natives that live off this culture, there is an overwhelming 98 percent in favor of the pipeline.

So when you say there is a shift in opinion, maybe one door shifts to the other door, but all of the doors aren't shifting, let me tell you.

Mr. EVANS. That reminds me of an interesting story. Obviously, you are the representative there and I am not. I can only report what was said to me. I remember in Seattle during FST, I thought an opinion poll should have been run on that. As it turned out, from all samples we ever had, most people there were not for that, either.

Mr. YOUNG. I assure you in Alaska, they are for the pipeline.

Mr. EVANS. Okay. We can go on about that.

Mr. TOWELL. Mr. Chairman, no further questions at this time. I yield back the balance of my time.

Mr. MELCHER. The gentleman from Arizona.

Mr. STEIGER. Thank you, Mr. Chairman.

Mr. Evans, I am constantly impressed at the certainty with which your group and yourself are able to predict disaster in the light of your track record. Were you a member, active member, of the Sierra Club when the Sierra Club was predicting the Amchitka disaster?

Mr. EVANS. I was a member of the Sierra Club; right.

Mr. STEIGER. Do you recall that incident?

Mr. EVANS. Sure.

Mr. STEIGER. Do you consider the Amchitka underground explosion as a disaster today?

Mr. EVANS. It depends. If you consider the destruction of 1,000 sea otter disaster; yes. But we have to be concerned about that.

Mr. STEIGER. You are not responsive to my question. Do you consider it a disaster?

Mr. EVANS. Yes.

Mr. STEIGER. I think it is important the record reflect that. If you recall, the predictions at that time called for tidal waves, earthquakes, and at the very least, the slipping of Anchorage into the sea, as I recall.

I will simply tell you that your continued reference to Amchitka as a disaster must then be held as a value point in your predictions of disaster with regard—and your frequent use of the term "disaster"—with regard to the Alaskan pipeline. I will only tell you that the activities of those local Sierra Club members in Colorado, referring to the latest underground shot as a disaster, must also be held in the same context.

I think this group would be irresponsible if they did not recognize that, at the very best, your enthusiasm to predict disasters does not represent a balanced equation with your expertise in this area. Therefore, at the same time that you would cry out for an objective, scientific appraisal, you are apparently far more interested in rhetoric than in fact. This is the reason, frankly, I am going to support very strongly the language that seems as a legislative fact of life, the fact that in this instance, NEPA has been complied with and therefore we should not tolerate any further tampering with the judicial process by well-meaning but apparently misguided groups.

It is a direct reaction and rather an unsavory one, I might add, but a direct reaction to the excesses to the movement you obviously are very much involved with. I would be less than candid with you if I didn't tell you that was the result of your efforts, as far as this Member is concerned.

I have no further questions.

Mr. EVANS. May I respond?

Mr. MELCHER. Yes.

Mr. EVANS. I appreciate your comments, Mr. Congressman, and I hope the record reflects the Amchitka matter; it also reflects there are no references to Anchorage slipping into the sea from our group. We were calling concern primarily to the possible damage, but the real problem we face, and I hope the record reflects this, was first we were losing a wildlife refuge for this area and were concerned about the precedent of it; and second, about 1,000 sea otter killed as a result of the explosion.

These are things that concern us, too.

I recognize we can disagree on what is a disaster, but I hope you understand what our concerns are.

Mr. STEIGER. I am sorry. At this point I must respond to the gentleman. I will tell you I was a member of the committee that sat and listened to the Sierra Club representatives at that time and

I will be happy to furnish the record for you, in which every kind of conceivable disaster known to man was placed in our record then. So I will not permit you to delete that record here in such a cavalier fashion.

I have no further questions.

Mr. MELCHER. Thank you very much, Brock, for your testimony, and for your candid replies to our questions. You are always welcome here.

I would like to note for the benefit of the committee, this is the 10th day of hearings on these bills, and at no time have we hastened ourselves with the witnesses. I propose to continue that process. We have taken our time with the witnesses who have come forward to testify in favor of the trans-Alaska route and I think it is only fitting we take our time with hearing the witnesses who have an opposite point of view, such as Brock, representing the Sierra Club and Federation of Outdoor Clubs.

The next witness we have now is Mr. John Hall, vice president for forestry affairs, National Forest Products Association, Washington, D.C.

STATEMENT OF JOHN F. HALL, VICE PRESIDENT FOR FORESTRY AFFAIRS, NATIONAL FOREST PRODUCTS ASSOCIATION, WASHINGTON, D.C.

Mr. HALL. Mr. Chairman.

I would like to present comments neither pro nor con on the pipeline but to bring to your attention some matters that the bill also affects in addition to pipeline rights of way.

Our organization represents manufacturers of lumber, plywood and other solid prod products throughout the Nation, and we also represent manufacturers who are substantial owners of private forest lands. It is to that point I would like to speak this morning.

We do support legislation which supplies a comprehensive policy for granting rights of way across Federal lands. I would like to specifically comment on H.R. 5524 and title IV of H.R. 5441, both of which are broader than the pipeline issue.

My recommendation to you, first off, is that the bills that you report out either eliminate road rights of way from its coverage and deal specifically with the pipeline, or, if you do deal with road rights of way as these two bills do, that certain amendments be incorporated in the bills.

Basic to good land management, forest lands, and that applies to Federal forest lands as well as private, is personal access, and where these lands are intermingled as they are throughout much of the west, the good offices of both private land owners and the public is involved.

This problem was solved with the Forest Service lands in 1964 in Public Law 88657, reported out by the House Public Works Committee. It has been very effective and has resulted in one system of roads throughout the intermingled landownerships, especially in Montana, Washington, Oregon, and California. It has saved hundreds of millions of dollars for both the Federal Government and private land owners and has provided prompt access, needed access,

at less total cost and less total mileage of roads built which, of course, results in less earth movement and less erosion activity.

The pertinent part of that law as set forth on page 2 of my statement and are attached following page 8 of the statement.

Mr. MELCHER. Mr. Hall, your entire testimony and recommended amendments will be made part of the record if there is no objection.

Hearing none, so ordered.

(The complete prepared statement of Mr. Hall, above-referred to, follows:)

STATEMENT OF JOHN F. HALL, VICE PRESIDENT FOR FORESTRY AFFAIRS OF THE NATIONAL FOREST PRODUCTS ASSOCIATION

Mr. Chairman and members of the committee, I am John F. Hall, Vice President for Forestry Affairs of the National Forest Products Association headquartered in Washington, D. C. Our association is a federation of twenty-five regional and wood products associations representing the forest products industry throughout the nation.

The forest products industry supports legislation that provides a comprehensive Federal lands right-of-way policy to insure immediate and appropriate action by the Government to grant needed rights-of-way.

I am here today to comment specifically on H. R. 5524, "Federal Lands Right-of-Way Act of 1973," and Title IV of H. R. 5441, "National Resource Lands Management Act of 1973," which authorize the Secretary of the Interior to grant rights-of-way across Federal lands.

The provisions of both bills may adequately cover rights-of-way needs in most circumstances. However, specific provisions should be developed to provide prompt and permanent access rights to and across intemingled private and Federal lands.

Basic to good land management and administration is ready access. In areas where the land ownership is intermingled, permanent easements become a primary consideration in effective land management of both private and Federal lands. This fact in respect to the administration of the National Forests and adjacent and intermingled private lands was recognized in the early 1960's. The access problems presented there were successfully resolved in large part with the message of Public Law 88-657 of October 13, 1964.

The following is an excerpt of P.L. 88-657 as it pertains to easement granting authority:

Sec. 2. The Secretary is authorized, under such regulations as he may prescribe, subject to the provisions of this Act, to grant permanent or temporary easements for specified periods or otherwise for road rights-of-way (1) over national forest lands and other lands administered by the Forest Service, and (2) over any other related lands with respect to which the Department of Agriculture has rights under the terms of the grant to it.

Sec. 3. An easement granted under this Act may be terminated by consent of the owner of the easement, by condemnation, or after a five-year period of nonuse the Secretary may, if he finds the owner has abandoned the easement, make a determination to cancel it. Before the Secretary may cancel an easement for nonuse the owner of such easement must be notified of the determination to cancel and be given, upon his request made within sixty days after receipt of the notice, a hearing in accordance with such rules and regulations as may be issued by the Secretary.

Attached to this statement is a copy of the House Report No. 1920 of the 88th Congress on P.L. 88-657 which documents the need for similar provisions in the proposed Federal lands rights-of-way legislation.[1]

The key to effective rights-of-way granting authority is to provide the means for permanent easements for roads that serve both private and Federal lands: thus making it possible for both parties to realize the optimum benefits of long-term management of high value lands. Permanency is often a necessary

[1] Placed in Subcommittee files.

requisite to justify the construction and maintenance costs of high standard roads that can serve the many uses of both private and Federal land resources. Assurance of continued access makes long-term and large-scale investment opportunities possible.

I would like to comment and often two suggested changes to both H.R. 5524 and Title IV of H.R. 5441.

Sec. 2(b) of H.R. 5524 and Sec. 401 (b) of H.R. 5441 define the term "Federal lands" to which the proposed right-of-way authority would apply. Excepted from that authority are several classes of lands administered by the Secretary of Agriculture and the Secretary of the Interior.

We request that the definition of "Federal lands" be amended to exclude National Forests and other Federal lands administered by the Secretary of Agriculture as part of the National Forest System. The Secretary of Agriculture already has the necessary easement granting authority to provide for adequate rights-of-way across intermingled National Forest and private lands. Public Law 88-657 has been effective in promoting the construction and maintenance of a single system of roads for access to intermingled Federal and private lands.

Enactment of H.R. 5524 or H.R. 5441 without the proposed exemption for National Forest lands, will increase the complexity of the existing easement granting authority by involving the Secretary of the Interior. It will not provide the same safeguards of private rights contained in the 1964 Act.

In Sections 5 (d) of H.R. 5524 and Section 404 (d) of H.R. 5441, the proposed provision would authorize the Secretary to revise on a regular basis regulations on requirements to insure that activities in connection with the right-of-way will not violate applicable air and water quality standards and also control and prevent damage to environment, property, and public health and safety. Such revisions would be applicable to every right-of-way granted irrespective of when the right-of-way was granted. Because of possible future changes in requirements that could mean substantial costs to the grantee, a compensable interest must be recognized to assure equitable treatment.

In both Section 406 (a) and (b) of H.R. 5441 and Section (7) (a) and (b) of H.R. 5524, several substantive additions and changes are needed. Subsection (a) should provide for suspension and termination of right-of-way granted by the Secretary by either consent of the owner or condemnation. In Subsection (b), nonuse of the right-of-way for a period of five years rather than the proposed two-year period is more appropriate to determine abandonment. Also needed is a provision that requires the Secretary to notify the owner of a right-of-way of cancellation due to abandonment and provides for a hearing at the owner's request. Attached to this statement are the suggested changes to both Subsections.

Again, I want to emphasize the need for permanent rights-of-way in areas of intermingled private and Federal land ownerships requiring long-term investments that are mutually beneficial to both parties in the total land management program. Also, compensatory provisions must be included in the proposed legislation to assure fair treatment of the parties involved.

SUGGESTED AMENDMENT TO H.R. 5524

Amend Section 2 (b) by inserting the *language in Italic.*

(b) "Federal lands" means all lands owned by the United States except (1) lands in the National Park System, (2) lands in the National Wildlife Refuge System, (3) *lands in the National Forest System,* (4) lands on the Outer Continental Shelf, (5) lands in the National Wilderness Preservation System, and (6) lands held by the United States in trust for any Indian or Indian tribe, and lands held or owned by any Indian or Indian tribe under a limitation or restriction on alienation requiring the consent of the United States.

Explanation of Proposed Amendment

The Secretary of Agriculture already has the necessary easement granting authority to provide for adequate rights-of-way across intermingled National Forest and private lands. This easement granting authority was established specifically in the Act of October 13, 1964 and has been effective in promoting the construction and maintenance of a single system of roads for access to intermingled Federal and private lands.

Enactment of H.R. 5524 without the proposed exemption for National Forest lands, will increase the complexity of the existing easement granting authority by involving the Secretary of the Interior. It will not provide the same safeguards of private rights contained in the 1964 Act.

NOTE—The comparable provision in H.R. 5441 is Section 401 (b).

SUGGESTED AMENDMENT TO H.R. 5524

Amend subsections (a) and (b) of Section 7 by deleting the language and inserting the language *in italic*:

(a) The Secretary may suspend or terminate any right-of-way granted, issued or renewed pursuant to this Act if,- *by consent of the owner of the right-of-way or by condemnation* after due notice to the holder of the right-of-way and an appropriate administrative proceeding,-. *H*owever, no administrative proceeding shall be required where the right-of-way by its term provides that it terminates on the occurrence of a fixed or agreed upon condition, event or time.

(b) Abandonment of the right-of-way or noncompliance with any provision of this Act, condition of the right-of-way, or applicable rule or regulation of the Secretary, may be grounds for termination of the right-of-way. Failure of the holder of the right-of-way to use the right-of-way for the purpose for which it was granted, issued or renewed, for any *five*-year period, shall be presumed to constitute abandonment of right-of-way. *Before the Secretary may cancel a right-of-way for abandonment the owner of such right-of-way must be notified of the determination to cancel and be given, upon his request made within sixty days after receipt of notice, a hearing in accordance with such rules and regulations as may be issued by the Secretary.*

Explanation of Proposed Amendment to Sec. 7 (a) and (b) of H.R. 5524

On Section 7 (a): Suspension and termination of a right-of-way should be effected either by the consent of the owner or by condemnation by the Government. Extensive investments may have been made by the easement holder and should not be subject to unilateral cancellation except as provided by the terms of the grant outlined in subsection (b) of Section 7. This provision has worked satisfactorily for both the Government and private cooperators concerned with rights-of-way across National Forest and intermingled private lands. It ought to be extended to BLM lands.

On Section 7 (b): Determination of abandonment based on a five-year period of non-use rather than two years is more appropriate. This would give the owner of a right-of-way a more reasonable time period to reconsider his need.

Before a right-of-way is subject to cancellation, the Secretary should notify the owner of the proposed action to determine abandonment. At the request of the owner, a hearing should be held to accord the opportunity for complete review and discussion prior to the final determination by the Secretary.

NOTE—The comparable provision of H.R. 5441 is Sec. 406.

Mr. MELCHER. The attachment dealing with roads and trail systems for the national forest reported after a bill enacted in the 88th Congress, will be made a part of the files, since there is already a Federal document.

Mr. HALL. Thank you. I would recommend, rather than undo the work that has been done relative to national forest system in 1964, that the bill we work on not refer to roads rights-of-way at all, but that you tackle that in separate legislation or if you wish to include road rights-of-way, that, first of all, the definition of "Federal lands" in those two bills be amended so that national forest lands are omitted. Those two bills do exclude the national park systems lands, wilderness system areas, and other areas over which it is proposed no rights-of-way be issued.

Since the Secretary already has the necessary authority, we would suggest national forest lands be eliminated from the scope of the bill. Included Forest Service lands would increase the complexity and require the Secretary of Agriculture to go to the Secretary of the Interior to get road rights-of-way across lands he administers, an unnecessary complication.

Secondly, in section 5(d) of 5524 and 404(d) of 5441, the Secretary of the Interior would be authorized to revise the regulations applicable to road rights-of-way long after they had been granted, to reflect changes in air and water quality standards, environmental factors, property, and public health factors and safety objectives. Since these revisions will be applicable to long-standing rights-of-way, we recommend a compensable interest be recognized which would assure equitable treatment to all rights-of-way holders.

Secondly, in both these two bills, some provisions, changes, are needed to bring them into line with the provisions covering national forest rights-of-way as far as abandonment of rights-of-way are concerned. We would suggest nonuse for 5 years rather than 2 years be the standard and also that the Secretary have the obligation to notify the right-of-way holder of the proposed abandonment cancellation.

The specific language recommendations are on pages 6, 7, and 8 of my statement.

In summary, we would again recommend the road rights-of-way be kept separate, or if we are going to tackle both in the same way, make two amendments, first eliminate the Forest Service and change the language that makes the Secretary of the Interior administer land to bring it more in line with that which has proved so highly successful in the application to forest lands.

Thank you.

Mr. MELCHER. Mr. Hall, I very much appreciate, and I am sure the committee does, the testimony you have provided us with regard to these points. I would further hope that during the process of markup, since all of our committee meetings are open, that you would attend those or at least ascertain for yourself at that time whether or not we are paying enough attention to the point you raised here.

Mr. HALL. Thank you, sir.

Mr. MELCHER. The gentleman from California.

Mr. JOHNSON. Thank you, Mr. Chairman.

Just one question. Did you testify in behalf of the bill as reported from the Senate committee?

Mr. HALL. Yes, sir.

Mr. JOHNSON. Have the forest lands been eliminated from the bill at the present time?

Mr. HALL. No; they have not. They have made one amendment which eases somewhat the confusion. Where they provide the lands of only departments are involved, that the Secretary of that Department may make the easement granting right-of-way, and then he will work out the paperwork with the Secretary of the Interior. So as far as the applicant for the right-of-way is concerned, he goes to the Secretary of Agriculture, the Secretary of Agriculture has the paperwork out with the Interior.

However, the Senate bill didn't change the existing language you have in your bill relative to cancellation of easements and the terms for which they are granted, both of which we think are superior in 8861, which you were personally developing.

Mr. JOHNSON. That is all, Mr. Chairman.

Mr. MELCHER. The gentleman from Arizona.

Mr. STEIGER. Thank you, Mr. Chairman. I have no questions. I just want to join with you in thanking Mr. Hall for calling this to our attention, because with the witnesses we have been considering it, we have not touched on it at all, so we are most appreciative and I think generally sympathetic.

Thank you, Mr. Chairman.

Mr. MELCHER. The gentleman from New Mexico.

Mr. RUNNELS. No questions.

Mr. MELCHER. The gentleman from Oregon.

Mr. DELLENBACK. Yes. I would concur in the statement of my colleague from Arizona that we appreciate the comments that are made in your testimony relative to these other features. I would be surprised if the committee at this time, against the background of the hearings we had, was to go ahead and act either on 5524 or 5441, because there are a host of other aspects to each of those bills which we must consider carefully if we are going to deal in that kind of legislation.

As the chairman commented earlier, the committee has been striving to go indepth into the Alaska situation more than the broader context, but we do appreciate the testimony that you have given this morning, Mr. Hall. As it frequently happens, it is very helpful testimony and we are very grateful for it.

May I ask one question that is directly relevant to the Alaska pipeline situation? Do you have any comments other than those we have already made or do you care to emphasize again the question of the right-of-way insofar as it deals with width? If we stay with the piece of legislation that either deals with the authority in the Secretary of the Interior to give more than the 25 feet on either side of this pipeline for purposes of construction, or legislation which gives him broadened right to give rights-of-way, or if we were to deal with legislation that did not only one of those, but also sought to lay the environmental question to rest so far as the Alaska pipeline is concerned?

Do you have any comment on any of those three responsibilities?

Mr. HALL. I would like to respond to the one concerning the right-of-way. Occasionally, some of the road right-of-ways do exceed 50 feet and for those cases the Forest Service has provided a special use permit and that will usually cover the total of a fill or top of a cut, where we would exceed 50 feet.

Mr. DELLENBACK. That is not just on a temporary construction basis but on a permanent basis?

Mr. HALL. Permanent basis is my understanding.

Mr. DELLENBACK. Your interpretation and the Forest Service's interpretation of its authority is that it has ample authority to supplement the normal right-of-way with that kind of additional special use permit?

Mr. HALL. For these very limited applications. It is not too common that we do need more than 50 feet. It is usually in steep country where there is a large cut or fill. I think a special use permit is the way they have resolved the issue. But, again, it may be the one where the private land owner made the application and the Federal Government took care of al of the necessary paper work.

I believe special use permit was the way it was handled.

Mr. DELLENBACK. Anything else?

Mr. HALL. At times, it would probably be simpler or cleaner if there were authority to grant wider than 50 feet. My only comment is 50 feet has been adequate for 99 percent of the applications that private land owners have made across Federal lands.

Mr. DELLENBACK. So far as forest products operation is concerned?

Mr. HALL. Yes, sir.

Mr. DELLENBACK. So far as the pipeline is concerned, you have no particular expertise or knowledge as to what we need to do in this regard?

Mr. HALL. None, sir.

Mr. DELLENBACK. Thank you very much.

Mr. MELCHER. The gentleman from Guam.

Mr. WON PAT. No questions, Mr. Chairman.

Mr. MELCHER. The gentleman from Ohio.

Mr. REGULA. No questions.

Mr. MELCHER. The gentleman from Nevada.

Mr. TOWELL. No questions.

Mr. MELCHER. The gentleman from Alaska.

Mr. YOUNG. No questions.

Mr. MELCHER. Thank you very much. Mr. Hall. We appreciate your help.

Mr. Stephen R. Seater, Defenders of Wildlife, Washington, D.C.

Mr. Seater, we are glad to have you with us.

STATEMENT OF STEPHEN R. SEATER, DEFENDERS OF WILDLIFE, WASHINGTON, D.C.

Mr. SEATER. Thank you, Mr. Chairman.

Defenders of Wildlife does not oppose development of Alaskan north slope oil and gas. We are, however, very much concerned as to how and when this development takes place. Mr. Chairman, we believe there are many questions that remain unanswered and which should be fully aired at these hearings.

The United States is suffering from a lack of fuel, and it has been said by many experts that by mid-summer we will be in a full-blown fuel crisis. The origins of this shortage, however, are not clear. The prestigious British journal of science, "Nature," recently carried an editorial discussing the petroleum shortage and concluded that, "The reasons appear to be more a consequence of a shortage of refining capacity and distribution facilities than of a physical shortage of crude petroleum." If this is true, then development of north slope oil will not in itself alleviate our fuel shortage.

In our view, the committee should also address itself to the question of whether north slope oil ought to be developed at this time from the point of national and financial security. Resource economist, Dr. Charles Cichetti, has pointed out that

> If development of north slope oil today merely postpones the time of ultimate dependence on foreign oil, using up U.S. resources during a period of relative peace may cause the Nation to find itself short of oil reserves in the future. This would be an inferior position from the standpoint of both national and financial security. Thus, the United States might find itself subject to the arbitrary whims of oil monopoly states, as Western Europe and Japan find themselves today.

If such a situation is likely to develop in the future, it may behoove us to postpone the extraction of Alaskan oil in order to maximize the value of these domestic reserves.

If the Congress feels that north slope crude oil should be brought to market now instead of later, then it is imperative that all methods of bringing the oil to the lower States be seriously considered. The Department of the Interior long ago opted for a trans-Alaska pipeline without making exhaustive environmental and economic studies of alternate routes. Nor has Interior given consideration to means other than a pipeline for bringing the oil to market.

A recent study by the Canadian Institute of Guided Ground Transport indicates that shipping North Slope oil by rail to Chicago would be cheaper as well as less damaging to the environment than would be shipment via the trans-Alaska pipeline—tanker route to Seattle and from there via pipeline to Chicago.

Defenders of Wildlife believes that the trans-Alaska pipeline tanker system is not the best way to bring North Slope oil to market. The reasons the TAPS route is objectionable are as follows:

First. The route of the lower 70 percent of the Alaska pipeline traverses one of the most earthquake-prone regions in the world. This part of the State has been hit by 23 earthquakes with a rating of 6 or more on the Richter scale during the last 70 years. It is highly doubtful that earthquake hazards of this magnitude can be overcome by any safety engineering techniques we presently have at our disposal. Even with optimal placement of shutoff valves the maximum spill from a pipeline rupture would be 2.1 million gallons of hot crude oil. Such a rupture would be a major tragedy insofar as fish and wildlife and vegetation are concerned.

Second. The construction of a pipeline in a north-south direction across Alaska wil mean that the engineer must cope with several major physiographic divisions. TAPS would traverse two rugged mountain systems, the Brooks Range in the north and the Alaska Range in the south, which would involve additional environmental risks. A major concern of environmentalists is the great difficulty in containing oil spills and carrying out cleanup operations along a pipeline which traverses such rugged terrain.

Third. TAPS involves serious pollution of Prince William Sound from the transfer of oil to tankers. Additionally, the fishery resources of Prince William Sound could easily be devastated by the impact of a seismic wave or severe earthquake on storage facilities intended to hold some 20 million barrels of oil.

Fourth. A large fleet of supertankers would face great navigation risks through exceedingly rough and stormy waters. U.S. Coast Guard studies indicate that major collisions and oil spills will be a certainty. Irreparable damage will be done to these most biologically productive waters in the North Pacific as well as to the pristine coast of British Columbia.

An alternative route through Canada to the Midwest has the following advantages:

1. It would avoid the earthquake and Prince William Sound problems as well as the dangerous tanker traffic along the Canadian west coast.

2. It would bring the oil to the part of the United States most in need of it.

3. It would provide for a common corridor for both gas and oil.

4. A trans-Canadian route, according to an in-depth economic analysis by Dr. Charles Cicchetti, would supply the higher valued petroleum markets of the Midwest and east coast and would be economically "superior to TAP for the Nation, for Alaska, and, except under certain interesting schemes for the ultimate delivery of oil. for the oil companies themselves."

Many environmentalists have concluded that the major reason the oil companies have opted for TAPS is because of one of the interesting schemes Dr. Cicchetti referred to. This involves an import-for-export plan proposed by the oil interests that would make the marketing of a large portion of North Slope oil in Japan a very profitable business. This plan is discussed in Dr. Cicchetti's study, entitled "Alaskan Oil Alternative Routes and Markets."

Mr. Chairman, we hope that whatever the outcome of your committee's deliberations. the export of North Slope oil to Japan will not be permitted.

Proponents of the Alaska pipeline are pushing the Congress hard to get a law that will permit them to begin construction within the next few months. They claim that because of the fuel shortage, it is necessary to bring North Slope oil to market by the fastest means—that being TAPS. But. it is not likely that TAPS can be built sooner than a Canadian line. Environmentalists are pledged to continue the court battle by challenging the adequacy of the Department of the Interior's Environmental Impact Statement. The construction of TAPS could be delayed for years.

Nor does it seem correct to say that the Canadian government has shown no interest in the construction of a pipeline through Canada. One month after oil was discovered on the North Slope, the Canadian Minister of Energy, Mines and Resources expressed formal interest in a pipeline from Prudhoe Bay through Canada. Since then several high Canadian officials have issued statements in support of such a pipeline. The latest announcement in support of a trans-Canada route was made by Donald MacDonald, minister of energy, mines and resources, on March 18, 1973. We don't honestly believe there has been a concerted effort on the part of the U.S. Government to negotiate with Canadian officials about the possibility of constructing a trans-Canadian pipeline.

We do not think that authorizing the construction of TAPS is the best way to alleviate the fuel crisis. The opposition to this route from environmentalists and other groups will be enormous and we forsee a long delay in its construction resulting from further litigation. A trans-Canadian route. on the other hand. is not likely to meet with such formidable opposition. We believe that in the final analysis, the Canadian Government will grant the right of way for a trans-Canadian pipeline because they are opposed to the shipping of oil along the British Columbia coast.

Recently, there has been talk of constructing two pipelines, first TAPS, then the Canadian line. Defenders of Wildlife is unalterably opposed to this suggestion. While we feel a trans-Canada pipeline

would be less damaging to the environment than would TAPS, we recognize the fact that it also poses certain environmental risks. To build two ecologically damaging pipelines is unthinkable to us.

Defenders of Wildlife would like to make the following recommendations concerning the legislation that this committee will write:

1. Mandate the State Department to begin negotiations with the Canadian government with the ultimate goal of signing a treaty for the construction of oil and gas pipelines through Canada to bring these fuels to the Midwest and East where they are needed most.

2. Commission the National Science Foundation to conduct an impartial study of alternatives to TAPS with a report to Congress. The resulting data is essential if we are to come to a sound scientifically based decision.

3. Reserve the final decision to Congress, thereby removing this power from the pro-oil interest administration and placing it in the hands of the people's representatives.

Rights-of-way provisions:

In addition to the Alaska pipeline question, there are important right-of-way provisions now before the committee. Defenders of Wildlife is favorably disposed to a restructuring of right-of-way laws, but we oppose any bills that would give the executive branch authority which rightfully belongs to Congress.

We are also of the opinion that there is not enough information available on which legislation should be based. We advocate a careful study of this issue. In our view, it is imperative that the impact of broader rights-of-way on public lands be considered. Therefore, much basic information is needed before any action can be taken. We concur with George Alderson of Friends of the Earth, that the committee should obtain testimony from knowledgeable people in the agencies who administer present right-of-way laws and from citizens who have experience with right-of-way problems. We also agree with the idea that the committee should review the environmental impact statement now being drafted by the Department of the Interior before taking any action.

We urge the committee to take these steps and to hold additional hearings on this vital issue.

Thank you for giving us this opportunity to present our views on these matters.

Mr. MELCHER. Thank you, Mr. Seater.

Now, I have a number of questions of you. First of all, the Canadian Institute of Guided Ground Transport is what type of an operation?

Mr. SEATER. They deal mostly, I think, with trains. What they are is a study group. In Kingston, located in Kingston, Ontario. What they have done here, they have studied the train route, proposed train route, from Prudhoe Bay to a placed called Trout River, where the oil would be transferred to a pipeline and from there brought into the Midwest.

Mr. MELCHER. How are they motivated and how are they financed? Are they a railroad group?

Mr. SEATER. I don't know if they are exactly financed by Canadian railroads. I am sure part of the funding comes from Canadian rail-

roads. But they are supported by the Queens University in Canada and also the Canadian Transport Commission, I believe.

Mr. MELCHER. You think they are a public group, or government, or private?

Mr. SEATER. I think they are a private group.

Mr. MELCHER. The point you raise is interesting. I don't believe we have anything in the hearing concerning their findings, do we? If you have any information directly from them that you would wish to submit to the committee. I would be interested in seeing it.

Mr. SEATER. I do, Mr. Chairman. I would be glad to submit it.

Mr. MELCHER. The gentleman from California.

Mr. JOHNSON. I would say there is information in the record relating to the railroad. It was placed in the record during the last Congress, I am sure.

Mr. SEATER. There have been a couple of studies that have just been completed.

Mr. MELCHER. This is the first time I heard of this particular group.

Mr. SEATER. The Mellon Institute, I think, did a study last year.

Mr. MELCHER. If you have any information from the Canadian Institute of Guided Ground Transport, I would appreciate it.

Mr. SEATER. I would be glad to submit it.

Mr. MELCHER. On the point of sales to Japan. I think if you have been attending these hearings, we made it abundantly clear this committee is not, under any consideration, going to pass legislation that would permit sales of Alaskan crude to Japan at a time when we are told and we believe it is needed here for our own purposes. Am I assured from your testimony that you are aware of that fact?

Mr. SEATER. Yes, I am.

Mr. MELCHER. Thank you.

If it becomes clear to this committee that it is our duty to assume the responsibility of judging the environmental questions of the Trans-Alaskan pipeline or Trans-Canadian route, if that is possible, then you are recommending to the committee some group such as the National Academy of Sciences——

Mr. SEATER. Foundation, or some other neutral group; yes.

Mr. MELCHER [continuing] would make a study. Other groups that have testified before the committee, representing environmental groups, have said that they think this can be done within a year's time. Do you believe that that is possible?

Mr. SEATER. Well, I believe it is possible; yes. I can't really comment on the exact amount of time it would take them to do the study. I understand a year is considered ample so I do think it is possible that they could do it in a year.

Mr. MELCHER. Very few people who have testified so far really have gone into a critique of the Department of the Interior's Environmental Impact Statement. They have criticized it in general, but haven't specified detailed points where they differ with the statement. Have you made a study of the statement?

Mr. SEATER. I have not made a detailed study of the statement. The only criticism that I might have, or do have, actually, with the statement is it doesn't seem to go into enough detail about the

alternate routes. The Environmental Policy Act apparently mandates the Federal agencies to do this, to study the alternatives to a project, and it just doesn't seem to me there was quite enough consideration given to the alternate routes.

I might add the statement itself seems to indicate that the environmental damage that would be done by Trans-Alaska pipeline would be tremendous.

Mr. MELCHER. Mr. Seater, you refer to a statement made in March of 1973 by Mr. Donald MacDonald, speaking in his capacity as an official of the Canadian Government. Has this statement in any way affirmed the interest of the Canadian Government in building a Trans-Canadian pipeline quickly?

Mr. SEATER. Quickly—what do you mean by quickly, Mr. Chairman?

Mr. MELCHER. Let's say within 3 or 4 years.

Mr. SEATER. I think it implied that, yes. It was a television interview and the quote that I have seen definitely implies they are interested to go ahead with this.

Mr. MELCHER. If that is true, I find it difficult to understand why we don't get affirmative word from the Canadian Government to that effect, then.

Thank you very much.

The gentleman from California.

Mr. JOHNSON. Thank you, Mr. Chairman.

I have just one question that concerns the right-of-way provisions that are before this committee and that have been placed in effect by the old statute. We have a number of oil and gas lines that are now in operation. Has your organization made a complete study of their operation to find adverse interest to wildlife?

Mr. SEATER. No, we haven't made a complete study.

Mr. JOHNSON. The pipelines that are found in the United States are numerous in number and they carry a number of different products—crude oil, refined petroleum products, oillines, gaslines, slurry lines—and I think by and large they are operating very efficiently, and for the most part, in the Western States, they cross an awful lot of public domain.

Do I understand you to say there is a concern by your organization that these were not properly constructed and operated?

Mr. SEATER. No; I didn't say that. What I am saying in this statement is that—well, that the Congress should reserve the right to actually——

Mr. JOHNSON. We had that right. We granted that right in legislation. The permits have been entered into with the various interests to move crude oil, petroleum products, gas, oil, slurry.

Mr. SEATER. What I would like to see in further hearings held by this committee is that people from the agencies themselves and people that are involved with the problems that have occurred on public lands, submit relevant testimony. I am not an expert in this area.

Mr. JOHNSON. I have witnessed two very large lines built through the Sierra Mountains, one carrying gas, the other carrying petroleum products. They operate very efficiently. They operate throughout the State of California. Most all of our oil and petroleum products, as

well as gas, are now moving. Many of our large conduits carrying water from the mountains to the metropolitan areas are in pipelines and they go through an awful lot of public domain.

I think it is the best way, myself, to transport the various products that are being transported.

Mr. SEATER. I am sure in many cases, the only way.

Mr. JOHNSON. You don't know they are there for the most part. They do a very efficient job. Your outlook on the pipeline and its effect on wildlife, I don't think, is too valid.

Mr. SEATER. Well, in some cases a pipeline can interfere with migration groups of wildlife.

Mr. JOHNSON. I think that is yet to be found to be true. Some people say that. But I have seen highway and railroad right-of-ways affect the wildlife. Pipelines wouldn't affect them that way. Of course, they wouldn't be subject to being killed as they are along the highway right-of-ways at the present time.

Mr. SEATER. Congressman, I don't think I came out against pipelines per se.

Mr. JOHNSON. Pretty much so. We have a lot of them in operation and I think you have to agree with me, the worse killers of wildlife are highways and our railroads.

Mr. SEATER. I agree.

Mr. JOHNSON. I don't think a pipeline ever killed very much wildlife. I don't know of any to my knowledge. And there are thousands of miles of pipelines we operate in the State of California and throughout the public lands.

Mr. SEATER. I didn't really say that, I don't think.

Mr. JOHNSON. That was one of the questions you raised.

Mr. SEATER. In Alaska, I did. What I said here——

Mr. JOHNSON. I think the more we could eliminate the railroad or highways in wildlife areas, we would be doing something, instead of advocating some sort of land transportation, surface transportation.

Mr. SEATER. I wasn't advocating railways. I was advocating this committee look into the possibility of using the railroad.

Mr. MELCHER. The gentleman from Arizona.

Mr. STEIGER. Thank you, Mr. Chairman.

Mr. Seater, I sincerely want to thank you for your testimony. You have been the first official word we have had that environmental groups are pledged to continue the court battle by challenging the adequacy of the Department of Interior's environmental impact statement.

You have given a great deal of credence to my position that we avoid what to many members of this committee is unnecessary gamesmanship in this particular situation. I will tell you that your rehashing of all of the salient points that you feel are salient in your statement, of the problems with the Alaskan pipeline, which the environmentalists can certainly take credit for forcing both the companies and the Government to confront as best they are able, the fact they are confronting these problems within the state of the art and have involved many of them apparently means nothing to you. I assume your group, since you are a spokesman for your group, I will tell you that to me the pledge to continue litigation is a good

deal like playing between the halves of the football game. If you can't have your way, you are going to take your bat and ball and go home. That is a poor analogy, since we don't——

Mr. DELLENBACK. That is a mixed metaphore.

Mr. STEIGER. Thank you. That would be construed as, nose to the grindstone—shoulder to the wheel, trying to work like that with the present situation.

At any rate, I will simply tell you, I thank you very sincerely, and I assume you are, when you are speaking for your group, also when you say you are pledged.

Mr. SEATER. No, I am not.

Mr. STEIGER. Who are you speaking of, then, as the environmentalist pledged to continue the court battle? To whom do you refer?

Mr. SEATER. Well, the ones that are party to the suit now.

Mr. STEIGER. I see. So you feel when this suit is resolved, if it is resolved in a manner that doesn't meet with the satisfaction of the environmentalist, then they will press on in some areas?

Mr. SEATER. The suit?

Mr. STEIGER. Yes.

Mr. SEATER. This suit, I thought, has sort of ground to a halt now, hasn't it? Isn't that why the issue is here?

Mr. STEIGER. If you could look at page 5 of your testimony, the last three lines of the first paragraph. I just assumed that you were referring to your group. The Defenders of Wildlife, are not pledged to continue litigation in this matter?

Mr. SEATER. We have never been a party to any litigation in this matter.

Mr. STEIGER. What are you reporting?

Mr. SEATER. What I have heard.

Mr. STEIGER. What have you heard? What groups are pledged to continue the court battle? I think it is important to know who they are.

Mr. SEATER. I can't speak for any other groups. That is why——

Mr. STEIGER. You have already.

Mr. SEATER. I haven't spoken to any officials of any other groups.

Mr. STEIGER. You made a flat statement.

Mr. SEATER. This is mostly what I heard in Washington and I must admit it is not an official pronouncement by any other group.

Mr. STEIGER. You have made a flat statement—environmentalists are pledged to continue the court battle. Now, are you telling us that you only think they will continue? Which is it?

Mr. SEATER. I haven't spoken to the policymakers of any of the groups.

Mr. STEIGER. Do you know of any individual or any lawyer who has stated that he has pledged to continue this fight in the court? Can you name anybody or any group who is pledged to continue the fight in the courts?

Mr. SEATER. I can't name any lawyer, no.

Mr. STEIGER. Can you name anybody?

Mr. SEATER. Well, as I say, I haven't talked to the policymakers of the various organizations. Therefore, I don't want to commit anybody.

Mr. STEIGER. You have. You have committed the environmentalists.

Mr. SEATER. No specific individual. I know, I feel certain that if this isn't resolved, if the parties to the litigation do not get an impartial study of the alternate routes, I feel certain they will continue the battle in the court.

Mr. STEIGER. I share your certainty. I am asking you who is going to continue the battle.

Mr. SEATER. The three parties—the Wilderness Society, Friends of the Earth, and Environmental Defense Fund.

Mr. STEIGER. Fine. Do you know of no other group at this time pledged to continue?

Mr. SEATER. No other group.

Mr. STEIGER. Does Defenders of Wildlife contribute to the Environmental Defense Fund?

Mr. SEATER. No; not as an organization.

Mr. STEIGER. It does not?

Mr. SEATER. Our organization does not contribute to the Environmental Defense Fund.

Mr. STEIGER. Has Defenders of Wildlife recommended to their members that they do contribute?

Mr. SEATER. No.

Mr. STEIGER. You are certain of that?

Mr. SEATER. As far as I know.

Mr. STEIGER. What is your position with the Defenders of Wildlife?

Mr. SEATER. I am a biologist, staff biologist.

Mr. STEIGER. So you would not necessarily be aware of all of the correspondence that goes out?

Mr. SEATER. No; I wouldn't.

Can you show me some correspondence, Congressman——

Mr. STEIGER. If you don't mind, I will confine myself to the questions and you to the responses, if that meets with your approval.

Mr. SEATER. All right.

Mr. STEIGER. The only reason for this questioning is that I am interested in the Defenders of Wildlife as a group, and I assume you are powered to speak for them on a policy basis, and would support such litigation. That is the purpose of my question.

Mr. SEATER. You mean, financially support it?

Mr. STEIGER. If you would support it either as a matter of policy or financially.

Mr. SEATER. Well, I think as a matter of policy, what I have advocated here is that an impartial study be made. I would be very unhappy if that study is not made. However, as far as actually writing to our members and asking them to support a suit of this sort, all I can say is. that would be up to our board of directors, not up to me.

Mr. STEIGER. Thank you. I have no further questions.

Mr. MELCHER. The gentleman from Oregon.

Mr. DELLENBACK. Thank you, Mr. Chairman.

Mr. Seater, on page 3, you go into a discussion of the lower portion of the proposed Alaska pipeline route. In there, you indicate your feeling that it is, as you say, "Highly doubtful that earthquake hazards of this magnitude can be overcome by any safety engineering techniques we presently have at our disposal."

Have you made an extensive study of that? I am thinking of some of the prior testimony this committee has had before it by those who apparently feel earthquake hazards can be met.

Mr. SEATER. And have been.

Mr. DELLENBACK. Do you have any specific engineering information you can give us on this particular point?

Mr. SEATER. Well——

Mr. DELLENBACK. And I want the information if it can be given to us.

Mr. SEATER. I don't have any specific engineering information. I do know of one or more articles that have appeared about earthquakes in Alaska which show up to 40 feet of displacement in the earth and I really don't see how a pipeline could withstand that kind of a shift on its base.

Mr. DELLENBACK. I would be interested, for the record, in any specifics that you may have on this particular point, because it is clear that we have earthquake hazards. As one Member of the Congress, I am very much concerned about those earthquake hazards. Other statements that have been made to the committee indicate that while these problems are major, they really feel they can be surmounted.

Again, I don't mean to badger or take issue with you, but if we are to take your statements, as backed up by independent knowledge and as an expert in the field of biology, we would expect you to testify as an expert. If you testify outside the field of your own expertise, then we would expect there be expertise of somebody else that you are referring to. So if you have any information of this particular nature that would back up your statement that it is highely doubtful earthquake hazards of this magnitude will be overcome; I would request you make it available to the committee.

Again, I am not badgering your statement. If that is a fact, I want to know it. If it is not a fact, we can strike it.

Mr. YOUNG. Would you yield?

Mr. DELLENBACK. Yes.

Mr. YOUNG. Along this line should be put in the record, if possible, Mr. Chairman. I have had different figures, 6 to 10-inch line from Ames late in 1942 through Fairbanks go through the supposedly most severe quake region. This refers to 40-foot slippage with no breakage at all. This is a very small line. I admit, but laid immediately because we needed the fuel for military operations during the Second World War. It was still in existence until last year.

Mr. SEATER. Could I ask you something? Do you know whether that line was subjected to actual fault shifts beneath it?

Mr. YOUNG. As much as the line you are referring to, is it going to be subject to sliding, too?

Mr. DELLENBACK. In any event, if you have information that will back up the statement, I would welcome our having it for the record. Otherwise, I will consider the statement as a supposition which is not based on engineering knowledge.

You go on further and say, "Even with optimal placement of shutoff valves, the maximum spill from a pipeline rupture would be 2.1 million gallons of hot crude oil." Could you explain that statement?

Mr. SEATER. Yes; I think that information comes from the impact statement.

Mr. DELLENBACK. Do you really mean maximum spill?

Mr. SEATER. Yes; this is the upper limit.

Mr. DELLENBACK. I thought you would mean the minimum spill.

Mr. SEATER. I don't have figures on the minimum spill.

Mr. DELLENBACK. Then it could be with no damage. And I can't understand a maximum in this, because if nobody used the shut-off valves, I would assume they could empty 10 million barrels out of Prudhoe. How do you set this as any maximum?

Mr. SEATER. Assuming the shut-off valves would be used. I can get you the information.

Mr. DELLENBACK. Do you have any information as to minimum spills? Because we could say if we lit a match to this building, the maximum damage could be the burning down of the entire building, and I don't assume that is what you mean. I would assume you would mean, even with optimum placement of shutoff valves, there is going to be some damage and that that damage will be at least a certain amount.

So I would assume that to us the value would be what is the minimum damage that is going to follow. Even with this placement of shutoff valves as engineers would work it out, there would be a certain minimum damage that would certainly follow. That is valuable testimony to us. If you are talking about maximum spill, then you are saying, of course, there is astronomical damage that could follow and the sky is the limit.

Mr. SEATER. Well, I will try to get you the information I have.

Mr. DELLENBACK. You see the point of my question?

Mr. SEATER. I do. It is well taken.

Mr. DELLENBACK. I thought you had inadvertently substituted "maximum" for "minimum" but you don't really mean minimum. I would think the maximum could go way beyond 2.1 million of hot crude.

Mr. SEATER. Well, I may have inadvertently substituted maximum for minimum. But my recollection is I didn't.

Mr. DELLENBACK. I may be in error.

Mr. SEATER. I will check that. Thank you.

Mr. DELLENBACK. That would be helpful to us to know really how much damage is going to follow potentially from earthquakes. Both of those points are important to me and I would appreciate you giving us others you might have.

On page 4, Mr. Seater, you deal with the alternative routes through Canada, and you cite a couple of advantages as you see them. Your point 1 is, "It would avoid the earthquake and Prince William Sound problems as well as the dangerous tanker traffic along the Canadian west coast."

I am not sure it would avoid all earthquake problems. Certainly it would face, from other environmental testimony given to us, certain other hazards such as crossing major rivers and the like, but at least that point has some merit. It would avoid certain of those problems.

You say, "It would bring the oil to the part of the United States most in need of it." I think there is some serious question about that on the basis of economics presented to us. There is some real question whether getting it to the west coast might not, because of the interrelationship to oil supplies and transfers throughout the country,

actually be as much advantage going another way. But I pass that one because I think it is opinion testimoy and we take it as opinion testimony.

But when you get to this matter of the indepth economic analysis, I would ask first, have you read Dr. Cicchetti's economic studies?

Mr. SEATER. Yes, I have.

Mr. DELLENBACK. Have you read Dr. Simon's, or Under Secretary Simon's analysis of Dr. Cicchetti's testimony?

Mr. SEATER. I read his testimony, yes.

Mr. DELLENBACK. Do you know they take issue?

Mr. SEATER. I know they do.

Mr. DELLENBACK. Under Secretary Simon, in testifying before us, raised very serious questions as he saw it about the soundness of this economic study.

I have not yet had a chance to see what Dr. Cicchetti said about Under Secretary Simon's study in reverse, but all we have at the moment is a study by Dr. Cicchetti, a rebuttal by Under Secretary Simon, with some analysis where he points out what he considers the unsoundness of the Cicchetti study. I don't know what the surrebuttal or rebuttal or surrejoinder or the rejoinder would be. But if there is a reply the other way, I would like to have it, also.

Because I think this is, again, a matter of major import to us.

I appreciate your emphasizing this matter of export of North Slope oil to Japan because, as has been commented on by the chairman of the subcommittee a few moments ago, that is not something any member of this subcommittee means to make possible. I am not sure exactly how we can deal with it legislatively, but anything we can do about this, I would be most interested.

I found your testimony helpful. I think there are areas that I would seriously question but, on the other hand, I found valuable the way you have gone at analyzing this.

Let me close with a final line of questioning, if I may.

In your recommendations to us, you suggest that we mandate that the State Department begin negotiations with the Canadian Government. As you say, "with the ultimate goal of signing a treaty", going through Canada.

Which of two things is it that you, Mr. Seater, are recommending to us? That we have an impartial study of alternatives and then, as a Congress, make the decision as to what we ought to do, or we conclude the Canadian route is the proper route and take whatever steps are best to go the Canadian route?

Mr. SEATER. Actually, what I am advocating is that the Congress commission this impartial study and at the end of that time the Congress itself make the decision. I don't mean to imply I want the State Department, or actually say it here, actually said it here, the State Department should have this goal in mind.

I think what they really should do here is simply see whether such a thing is possible, whether the Canadians really are interested.

Mr. DELLENBACK. If we are to take your first recommendation in a modified form, that we explore with Canada whether or not it is possible to work this out, you are not suggesting that we mandate that they begin negotiations leading to a treaty?

Mr. SEATER. That is right. "Explore" is a better word.

Mr. DELLENBACK. So far as the study is concerned, are you prepared to indicate that you and the Defenders of Wildlife will accept Congress' decision and say that that is the proper solution to the problem?

Mr. SEATER. Well, if—let me put it this way. If you follow the findings of the National Science Foundation or whatever impartial body is picked. then we would have no choice but to go along with that. We may have some reservations, but I think we could support that.

Mr. DELLENBACK. When you say you would have no choice, would you say no legal choice or would you say, "Fine, that impartial study is all we asked for. We will go the road you decided, the Congress, and give you our support in whatever decision you now make"?

Mr. SEATER. I don't know.

Mr. DELLENBACK. It is a pointed question. But constantly we face this, Mr. Seater, from all sides. What we constantly get in the Congress is people who come before us on one side or the other on the issue and they say, "We don't like what you are talking about in going that other road; what we want is an impartial study that will come out our way."

And then the real question is—if there is going to be an impartial study, are you prepared to say, "If after the impartial study you determine you are going to bring it in by tankers or you are going to come up with any other solution, we will go with you, or, Congress, with absolution."

But we often get testimony that implicitly says—and I am not putting this on your lap unless you feel it belongs there—"We want you to go the other road but if you go on the other road and don't come to the conclusion we think you ought to come to, we may fight you again on that one." In any case, if that is the way, we might as well know it now.

The value of the impartial study is not to eliminate controversy. The value of the impartial study is, hopefully, going in some other direction than the one somebody has predetermined is the right direction.

I am trying to find out in which category, to the degree you speak for the Defenders of Wildlife, you fit.

Mr. SEATER. As I say, if you follow the recommendations of the National Science Foundation, we certainly would not oppose your decision. How actively we would support you is something else. But we certainly would not oppose.

Mr. STEIGER. Will the gentleman yield?

Mr. DELLENBACK. Yes.

Mr. STEIGER. I think the gentleman has raised a very valid and interesting point. I wonder if I might phrase the proposition in an alternative fashion? Really, I think as usual, the gentleman from Oregon has stated our problem very well.

If the decision before us at this moment were to implement the Canadian route and we had a legislative problem and were wrestling with it, and the TAPS people came in and they had some tame environmentalists and they raised all sorts of economic and environmental problems with the Canadian route, and they said, "We would like an impartial study." Do you honestly believe that the Defenders

of Wildlife would support an impartial study at that point, whose purpose was clearly to hopefully switch from the Canadian to the Alaskan route?

Mr. SEATER. We wouldn't support it, but that doesn't mean we would oppose it, either. If we are going to call for an impartial study in one case—this is hypothetical—a hypothetical thing you are saying——

Mr. STEIGER. Right.

Mr. SEATER. [Continuing] but to be fair, we certainly couldn't oppose it.

Mr. STEIGER. What the gentleman from Oregon has brought out, there are people—I am not saying Defenders are one—but there are people who use the impartial study approach as a device for either delay or sort of last court of appeals. Is that the case with the Defenders at this point?

Mr. SEATER. No, sir. We are trying to be fair and honest in this thing. We believe an impartial study is necessary. We think that such study should be made in many cases when the Congress has to decide something of tremendous importance. Not only from an environmental standpoint but from an economic and also a National security standpoint.

Mr. STEIGER. Thank you.

Mr. DELLENBACK. I would close, Mr. Chairman, by indicating one last feeling that disturbs me, because, Mr. Seater, though I found much of your testimony helpful to me as I tried to think it through, I am disturbed by your third recommendation, perhaps even more than your first, for two reasons.

You say you "reserve the final decision to Congress, thereby removing this power from the pro-oil interest administration and placing it in the hands of the people's representatives."

I am disturbed for two reasons. One, because the Congress. I fear—and I say this as a member of that Congress—does not have the technical expertise to make the detailed decision. It doesn't now, and I am not sure it will 6 months or 9 months from now. We have the right and the obligation to make the policy decision, and while I am prepared to face up to that responsibility, I feel we must also rely on outside expertise. Maybe it ought to be an independent arbitrator or maybe it ought to be the National Science Foundation or Department of the Interior, but first of all. I think it would be a mistake in this really complex matter. which is not a matter of policy but of complex detail, if Congress faced every decision. We don't have the capacity. the time, the knowledge.

Secondly, I personally think your remark about the "pro-oil interest Administration" is unfair. I haven't joined in attacks on environmentalists, largely because some of the people I know within that field who are professionally involved or involved as an avocation, are both able as heck, deeply dedicated. and really make valuable contributions to Government. I may differ with them at times; I may agree with them at times; but I don't attack them.

I may agree or I may disagree with the Department of the Interior in its decision, but to use this type of a title or phrase to characterize them is as unsound and unfair. coming from you. as would the counter be if somebody were to attack the Defenders of Wildlife

with some sort of inflammatory language. I think it is an unfortunate comment and one which detracts from the rest of your testimony, at least as far as this member is concerned.

Thank you.

Mr. WON PAT (presiding). The gentleman from Ohio.

Mr. REGULA. Thank you, Mr. Chairman.

Mr. Seater, you mentioned in your statement the Department of the Interior long ago opted for Trans-Alaska pipeline without making exhaustive and economic environmental studies of alternative groups.

What do you mean by "long ago"?

Mr. SEATER. Well, prior to the litigation, in fact, they had decided to go ahead with the pipeline.

Mr. REGULA. Do you mean before the NEPA statement or after?

Mr. SEATER. Well, I guess it must have been before; yes. That is what I meant.

Mr. REGULA. You are saying the Department made the decision to build the TAPS line before they even had the impact statement?

Mr. SEATER. That is right. It seems to me, Congressman, there were no economic studies made until just recently. I mean, all of a sudden we have Dr. Cicchetti and Mr. Simon with these economic studies. Why weren't these things done years ago?

Mr. REGULA. I am curious as to what your evidence was that the Department of Interior made the decision prior to the NEPA statement?

Mr. SEATER. You mean their impact statement?

Mr. REGULA. Yes.

Mr. SEATER. They had granted the right of way. They were going to.

Mr. STEIGER. The right of way hasn't been granted yet.

Mr. SEATER. I said they were going to.

Mr. REGULA. Secondly, you state in your statement that several Canadian officials have expressed formal interest in a pipeline. Would you supply for the record copies of these statements? [1]

Mr. SEATER. I certainly will.

Mr. REGULA. You also state on page 6, the "Defenders of Wildlife is favorably disposed to a restructuring of the right-of-way laws."

Would you agree the right-of-way issue is not the environmental issue and that we should deal with that as a separate matter?

Mr. SEATER. In what way?

Mr. REGULA. Suppose that a right-of-way, of sufficient width, was granted for the construction of this line, TAPS, and then once that is done we deal with the environmental problems as a separate issue. Would you agree with that?

Mr. SEATER. I don't know. I never really—well, I don't know. I haven't really studied this aspect in depth enough to say. In a sense, it seems to me it is part of the same problem, isn't it? The fact is public lands, right-of-ways and whatnot, they do have environmental impacts and environmental consequences so don't you think both should be dealt with as one issue?

Mr. REGULA. I am asking you that question.

Mr. SEATER. Just right off the top, I would say so.

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[1] See statements beginning on p. 888.

Mr. REGULA. Have you read the environmental impact statement that has been filed on the pipeline?

Mr. SEATER. Part of it. I must admit I have not read the entire thing.

Mr. REGULA. Do you think the National Science Foundation could review this and make a judgment based on the evidence that is in the statement, or would you propose they do an entirely new study with new core drillings?

Mr. SEATER. I am sure much of the environmental impact statement is of great value and they could use it; yes. But it doesn't pertain to the Canadian route, or to any other Canadian routes I have read about. I think we also have to—everything has to be said. We have to have a complete study that considers the alternatives and everything.

Mr. REGULA. Does the law on Environmental Impact Statements require a study of alternatives and, if so, how many?

Mr. SEATER. I understand—it has been awhile since I read NEPA—but the last time I looked through it, it does say that Federal agencies are supposed to give consideration to the alternatives.

Mr. REGULA. That is all.

Mr. SEATER. To a project.

Mr. WON PAT. The gentleman from Nevada.

Mr. TOWELL. Mr. Chairman, I would like to continue with the question a bit about the right-of-way and width of right-of-way, which seems to be our problem. It seems to me if we allow in any situation a variance or enlargement of the width of right-of-way for the pipeline, it is going to allow the builders of any pipeline, in this case Alaska, to build that through an ecologically sound footing. So it seems to me your group and others like it would favor a method by which we can make a variance or widening of the width. That is going to help from an ecological standpoint in the building of a pipeline.

Do you agree with that idea?

Mr. SEATER. Would you mind rephrasing that question?

Mr. TOWELL. The problem is now they say they cannot build it within the 50-foot width. So if we enlarge that width then they would build it ecologically on a very sound basis. So therefore I would think the basic idea of your group and the others would be in favor of enlarging some width of the pipeline.

Mr. SEATER. We are not necessarily against enlarging the width of some of these projects, or the right of ways of some of these projects. I think each case is sort of unique.

Mr. TOWELL. In the case of Alaska, are you for or against enlarging the width of that right-of-way?

Mr. SEATER. Well, I don't know. The Alaskan problem is so complex, that—you see, I would like to reserve my judgment on the Alaska problem until after there has been an in-depth study by the National Science Foundation or some other organization. That is what I have come here to advocate, the Congress also reserve its judgment until such study has been completed.

Mr. TOWELL. You talked a lot about the Canadian route and the Canadians this and that. We have been asked for the names of those Canadians who are interested in this project. I find it hard to believe that the Government or very many individuals in Canada favor any pipeline through Canada, because there are not that many people on this committee. Why haven't they been here? I have not received any phone calls that said, "Why don't you listen to our story?" I don't know whether the other gentlemen have.

Mr. STEIGER. Would the gentleman yield at that point?

Mr. TOWELL. Yes.

Mr. STEIGER. I think the gentleman should reflect, to the contrary, the same Chairman of the subcommittee has contacted the Canadian Government and asked that they appear and state their position.

Counsel, have we heard from any representative of the Canadian Government?

Mr. SHAFER. Not at the present time. We are still talking to them, on an informal basis, but it appears that they are not accredited to appear before a legislative body; they are accredited to the executive. So I think the opportunity or the chance of getting a Canadian official to appear before the committee is probably rather remote for that particular reason. This will be pursued with the State Department.

Mr. TOWELL. Well, we seem to be tied up in that area on protocol and I won't get into that particular issue.

But your group and several of the environmental groups—I would asume that the Canadians have as many environmental groups as we do.

Mr. SEATER. Not as many.

Mr. TOWELL. Are you all in considerable agreement? Are the environmental groups in Canada saying, "Let's build the pipeline through Canada?"

Mr. SEATER. I undersand Richard Passmore has come out in favor of building a Trans-Canadian pipeline. He is the executive director of the Canadian Wildlife Federation.

Mr. TOWELL. Where is he from? From what area of Canada?

Mr. SEATER. I don't know right offhand.

Mr. TOWELL. Could we have that statement?

Mr. SEATER. It was presented at the Senate hearing.

Mr. TOWELL. Are there any other people from Canada that have advocated that in the ecology field?

Mr. SEATER. I can't think of any right offhand; no, sir.

Mr. TOWELL. No further questions, Mr. Chairman.

Mr. WON PAT. The gentleman from Alaska.

Mr. YOUNG. One request, Mr. Chairman. When you say you will provide the committee with the statements of the Canadian officials, I want the complete statement, not taken out of context.

Mr. Chairman, I think this is a fair request. Other than that, I would like to thank the gentleman for his testimony. It has been most helpful. I do appreciate it.

Mr. SEATER. Thank you.

[The information to be supplied by Mr. Seater follows:]

DEFENDERS OF WILDLIFE,
Washington, D.C., June 7, 1974.

CONGRESSMAN JOHN DELLENBACK,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN DELLENBACK: Following my testimony on the Alaska pipeline and rights of way provisions before the House Committee on Interior and Insular Affairs Subcommittee on Public Lands, you requsted that I furnish data to back up several statements I made. I hope the following will serve to clarify those points you questioned in my testimony:

1) To support my statement that "It is highly doubtful that earthquake hazards of this magnitude (6 or more on the Richter scale) can be overcome by any safety engineering techniques we presently have at our disposal," I have enclosed a copy of Alexander Nyman's testimony before the Public Lands Subcommittee as well as a copy of his letter to me.[1] Please note that in his letter, Mr. Nyman makes it quite clear that a pipe rupture and consequent flooding of a large area of Alaskan wilderness is almost inevitable under many earthquake conditions. For a corroborating expert opinion, see pp. 4 and 5 of the enclosed statement of Robert R. Curry.[2]

2) You questioned my statement that "Even with optimal placement of shut off valves the maximum spill from a pipeline rupture would be 2.1 million gallons of oil." This statement came from p. 185, Vol. 4 of the U.S. Department of the Interior's Final Impact Statement. Unfortunately, there is no mention of a minimum spill so I agree with you that the statement doesn't mean much. Moreover, it is unclear just how this figure was arrived at and whether it pertains to one or multiple ruptures. Now, I am not an engineer but I have had some training in the physical sciences and don't really see how one can come up with even a reasonably accurate estimate for spillage for a pipeline the length of the proposed Alaska conduit. I believe we should all focus our attention on the adequacy of the spillage monitoring system rather than on maximum and minimum spills. In other words, do we really have a monitoring system that will detect leaks which may result from lesser earthquakes in time to protect vast expanses of wilderness and wild stream from the hot crude?

3) You also asked me if I was aware of the economic analysis prepared by Assistant Secretary Simon of the Treasury Department which contradicts the in-depth analysis done by Charles J. Cicchetti of Resources for the Future. I am not an economist but I do know some very fine economists who deal with natural resource problems. These men hold Resources for the Future in high esteem. They point out that it is an unbiased, nonprofit corporation for research and education in the development, conservation, and use of natural resources. Interestingly enough, Robert O. Anderson, who is Chairman of the ARCO Board of Directors (ARCO is a member of the Aleyska Consortium) is also on the Board of Resources for the Future; yet Dr. Cicchetti's study did not find in favor of the Aleyska Consortium.

I still believe that the Administration's record speaks for itself and clearly shows it to at least have strong leanings toward the oil industry. Also, there is no doubt that the President has always been a proponent of the trans-Alaska pipeline. Therefore, I must confess to having some doubts about the objectivity of Mr. Simon's analysis.

4) To answer your questions about transportation of oil to markets in the U.S., I have enclosed materials furnished to me by the Government of British Columbia. Hopefully, I will soon receive a copy of a comprehensive study on rail transport of Alaskan oil which I will pass on to you.[3]

In closing, I wish to say that I am sorry you took offense at my statement about the Administration being pro-oil industry. I didn't mean to imply that the President knowingly favored the oil companies to the detriment of the country. I am sure he believes what he is doing is best for our nation, but that doesn't change the fact that he does tend to side with the oil interests. I wasn't questioning his motives. I was merely stating what to me is a fact.

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[1] Mr. Nyman's statement appears beginning on p. 784.
[2] See Mr. Curry's statement on p. 617.
[3] This information will be placed in the Committee files.

Congressman Dellenback, I am sure that you will carefully study the arguments for both routes before coming to a decision. I only hope that whatever action the Congress takes it will be in the best interest of our country from an economic as well as an environmental point of view.

Best wishes,

STEPHEN R. SEATER,
Staff Biologist.

DOVER, MASS., *June 1, 1973.*

MR. S. R. SEATER
Defenders of Wildlife,
Washington, D.C.

DEAR MR. SEATER: Your interesting telephone call certainly needs a much more thorough answer, than I could voice. As you can observe from my testimony I consider the danger from earthquakes in Alaska as an imperative reason against a 48" heavy oilpipe across this land.

You asked for engineering data which substantiate this conviction. The enclosed geological map shows the "faults" and the areas of instability where earthquakes are likely to occur. At present the geologists rate earthquake intensity by a number called "Richter". The department of Interior mentions Richter seven as possible magnitude. Environmental defense Fund mentions 8.5. Actually the visible effects have no direct measure of this number. Recent Anchorage and Los Angeles earthquakes rated above 8. The two sketches which are enclosed show the effect of a Montana earthquake rated at 7.3. Therefore subsidence of 20 or more feet is likely to occur in Alaska. And any of the deep valleys that may be crossed in the unstable area could be filled by debris including enormous boulders, falling from considerable height.

These are the potential dangers that the 4 foot oil pipe must face as a definite possibility. What will happen then?

Previous experience with 8" or even 12" pipe is no criteria for judging the effects except if the dimensional comparison is carried out according to scientific engineering principles.

The first study is on the weight basis. As the size of the pipe is increased the thickness of the wall is also increased. If an 8" pipe needed ¼" wall. than proportionally 48" pipe would be 1½" thick wall. However for each foot of length the 48" pipe will carry 36 time the load of oil. Therefore, if the much heavier pipe support is suddenly removed during subsidence of an earthquake. then. even if the pipe is strong enough not to bend. the mere weight of the oil load and the pipe itself are likely to crack open. The design engineer must take this in account. Evidently wall thickness of 9" (36x x ¼") is not practical. Has the 48" Trans-Alaska Pipeline sufficient strength to take this 6 times bigger stress, for proportionate dimensions?

The second study should be on "inertia" basis. Closing of a tap on a waterpipe produces a shock. If the shutting-off is rapid the moving water in the pipe has to be stopped suddenly. Its inertia produces a hydraulic shock which may be quite considerable. The larger the dimensions the stronger is the shock. The designers of large liquid containers for space rockets. had to provide special shock absorbing partitions within the giant tanks. A simple physical law would state that if dimensions are doubled the mass goes up 8 times for the same speed of blocking the liquid flow.

There is evidently no way to foretell how fast a falling heavy rock will either break the 48" pipe or just squash it and block the flow of oil. There are more than 3 million pounds of moving oil for every mile of the pipeline. With the inertia of this oil travelling at 6 miles per hour, a sudden blocking of flow will undoubtedly rupture the pipe even if it has been previously cracked. Nor can the operation of the "gates" set up at different spaced intervals prevent a complex mechanical build up of rupturing forces.

The nearest analogy in the electrical field is the breaking of an electrical circuit especially if it carries the electrical inertia of a magnetic coil. The spark is strong and will jump over a long gap. even if the low battery power would be isolated by the thinnest layer of air. The hydraulic shock follows the same rules as an electric spark.

I have given you, Mr. Seater, some of the scientific principles which, to me, make the possibility of pipe rupture and consequent flooding of large Alaska wilderness almost inevitable under many earthquake conditions. I am giving this option as an expert in general mechanical and elctrical engineering. It would be possibly more convincing to have my conclusions verified by Geologists -expert in earthquake possibilities in Alaska. I may suggest: U.S. Geological Survey. Dr. Robert M. Hamilton, Center of Earthquake Research, Menlo Park, California.

With regard to the effects of hydraulic shock, any academic organization with advanced courses of Hydraulics could give you expert opinion, especially if they have studied the liquid flow in large pipes as for hydroelectric turbines. These experts could give you some information based on actual mathematical estimates in their expert fields. They should corroborate my more or less intuitive conclusions.

My best wishes to you, for saving the Alaska ecology,

Yours sincerely,

ALEXANDER NYMAN.

QUESTION PERIOD—A CTV PRODUCTION

Host: Bruce Phillips. Ottawa Bureau Chief, CTV News. Guest: Honorable Donald MacDonald, Minister of Energy, Mines and Resources.

Panel: Peter Stursburg, freelance writer and commentator, George Bain, Toronto Globe and Mail. Dave Arlett, Vancouver Sun.

Taped: Friday, March 16, 1973. Air Date: Sunday, March 18, 1973, 4:30 p.m. Release: Saturday, March 17, 1973, 6:00 p.m.

Intro: It used to be a cliche in almost every classroom in this country that Canada was a land of limitless resources. In recent years, of course, we've come to know that this is not so and that we must now take another harder look at just how long our resources are going to sustain this country and how long we can go on expecting them. This whole subject has come very much into the news in the last few weeks with the imposition of quotas on oil exports to the United States, and we're very happy to have on our program today the minister in charge of the whole question of energy and resources, the Honorable Donald MacDonald. Mr. MacDonald is quite familiar to the Canadian people for having served in the Trudeau Cabinet and the Pearson Cabinet before that. I believe Mr. MacDonald, in three capacities. He was the President of the Privy Council at one stage, later the Minister of National Defense, and now he is the Minister of Energy, Mines and Resources. To talk to him, on our panel today—Peter Stursberg, freelance writer, commentator, broadcaster, and what have you; George Bain, columnist for the Toronto Globe and Mail; and, asking the leadoff question, Dave Ablett, the Parliamentary Bureau Chief for the Vancouver Sun.

DA: Mr. MacDonald, you and the cabinet have had several days to study Premier Barrett's proposal for bringing oil out of Alaska by railway and a pipeline rather than by a super-tanker route down the British Columbia Coast. Can you tell us now if the Federal Government will back this plan and say in Parliament if not, why not?

DM: Well, Dave, it's a little early to come up with an answer on that one. The first step we're going to take is to—and it's underway now—is to contact the B.C. authorities and find out the kind of backup studies that they have available for this route selection and for the engineering method to be used. As you know, we have been giving primary attention in connection with a northern transportation route for oil and natural gas to the Mackenzie Valley and we have accumulated a lot of information about the Mackenzie. The Yukon did not appear to us to be a natural route. It doesn't have the advantages the Mackenzie does of being an access route to Canadian resources but we are going to evaluate it and the first step will be to see the kind of work B.C. has done. take a hard look at their figures.

DA: Well, while we're on the issue, how do you feel about Provincial Premiers charging down to Washington to announce major policy proposals involving the Federal Government and this one by Mr. Barrett's division of responsibility for payment involves $1.2 billion in Federal money?

DM: Well, I must say that I don't personally take any objection to him announcing it either in Washington or anywhere else. I think it is fair to say that he accused me of timidity for not having come immediately in support of him on Tuesday after having announced it or at least briefed us on it on Monday. I feel that if you're going to spend $2 billion it might be a good idea to take a look at what you're going to spend it on before you write the cheque and—

GB: But this doesn't really compare with the Mackenzie, does it? This would be an alternative to the tanker route down the West Coast and since it involves U.S. oil which they're going to ship if they want to whether we like it or not, it's really whether it's preferable to have it shipped by sea or by land.

DM: George, it can be comparable to the Trans-Alaska pipeline and the tanker route in the Mackenzie as well. The Mackenzie proposal that I discussed with the American authorities a year ago and which they decided not to go ahead on was basically for a pipeline down the Mackenzie Valley. A branch of it would run off to Alaska, to the Prudhoe Bay Field, and this would be one vehicle. Since then we've had a report by the Queen's University Group on a suggested railway system down the Mackenzie Valley as well and these are two options we're balancing, so the two different options in the Mackenzie route could meet the objective that undoubtedly Premier Barrett had in mind when he put this Yukon one forward.

GB: Yes, but can that go ahead quickly enough? B.C. has a particular concern about environmental risks of a sea route down their coast and they are in fact presenting a B.C. alternative to that which presumably could go ahead in the relatively near future. Can the Mackenzie go ahead fast enough, and is it desirable that it go ahead fast enough, to really be an alternative to what the U.S. wants which is on outlet for its Prudhoe Bay oil?

DM: I don't think that it's clear that the Yukon Route could go ahead in the near future. As I mentioned, there's been a very intensive study by the federal agencies of the Mackenzie Valley, the different soil structure problems, the river crossings, and so on which could apply either to a rail or a pipeline route. So far as we know, there has been no comparable study done about the Yukon Route so that if either route was in a position to go ahead at an early date it would have to be the Mackenzie one rather than the Yukon one. But I shouldn't prejudge. Maybe the B.C. people have done this work. It wasn't clear in their documentation that they had but we're going to go out and find out.

PS: But isn't this really largely irrelevant because the Americans have indicated that they're not at all enthusiastic about this Yukon Route and they are going ahead with the tanker route?

DM: To carry it even further, Peter, they indicated to us a year ago this month and fairly repeatedly since that they weren't interested in any Canadian alternative. They really did want to go ahead with the Trans-Alaska route. The only element that's new in a year is that the pipeline application has run into trouble in the States and some of the opponents of it are now revising in the possibility of a Canadian route.

PS: Do you think that they would ever agree to shipping their oil over Canadian territory?

DM: Oh, yes. From time to time some of the oil companies that are opposed to a Canadian route have suggested there's an insecurity problem but in fact it's not as though there aren't some Canadian hostages to fortune. The two major pipelines supplying the eastern Canadian market both run through American territory, so if they feel there's an insecurity in the fact that they would have one crossing our territory, we've got one with regard to theirs, too. I don't think the insecurity argument is one that is a very serious one.

DA: Mr. Macdonald, whatever the merits of Premier Barrett's proposal, he raises an interesting question about the Federal Government's leadership in this area. He said after coming back from Washington and I quote: "There is no question in my mind that the Federal Government's laxity in presenting a possible alternative has forced the Americans to become very fixed in their present position." He also said you were negative and lacking backbone. Have you been timid about presenting the U.S. with a Canadian alternative for shipping Alaskan oil?

DM: Well, as you know, Dave, when you were in the Washington bureau we did go down there and rather forcibly, perhaps to the irritation of Secretary (Morton) at that time, went down and did put together (audio blank) proposal

of the basically Mackenzie Valley route as a means of trying to protect the Canadian west coast. I suppose it's a matter of opinion. I don't have perhaps some of the bull in the china shop technique that premier Barrett has. It may be a question of style.

DA: Well, at that time when you were there you informed the U.S. and you informed them later in a letter on May 4 that Canada had some thirty studies in the works that would soon be available, before the end of the year, as I recall. Well, we haven't seen any of those studies. What's happened to them? Are you sitting on them?

DM: My colleague, the Minister of Indian Affairs and Northern Development, tabled in the House a list of the ones that have been published and I suppose there must have been about 15 or 20 of them published and also a list of publication dates through the spring when the rest would be made available for general circulation in Canada.

GB: I'm not sure that I agree with the premise of Dave Aplett's question. Are we really considering the Mackenzie route as a means of giving effect to meeting U.S. ?

DM: George, it's a hard question. I think there is a basis for very legitimate concern on the west coast about the risk of a tanker spill which the Trans-Alaska route involves. I don't think prima face the Canadian Government would rush into a Mackenzie route as a possible corridor to bring American products down but faced with the fact that we may be threatened by an oil spill on our west coast, this seemed like a good and more positive approach to offer it to them. The advantage, I suppose, of having American involvement in shipping Alaska product through this kind of a system is that over the long run we can get a transmission system, either a railway or a pipeline, constructed basically at the expense of the American consumer, American producer and consumer. It's clear that in the early years Canada and Canadian needs won't require this kind of shipment of either oil or natural gas down the Mackenzie Valley but if we did construct this kind of a pipeline system basically for their needs in the early stages then we could, of course, phase our own (voice overlap)—

GB: How far ahead do you see that when you say that we have no immediate need for either gas or oil pipeline to bring Arctic (voice overlap)—

DM: To be quite specific about it there doesn't seem to be a prospect at the moment of—and further drilling could determine this—of bringing oil down from the Mackenzie Valley. The finds just haven't been there. The gas finds are substantial and from a Canadian standpoint we can rely with the protection through the National Energy Board. we can rely on western Canadian gas well into the 1980's for our needs.

RP: Is the panel finished with the Mackenzie Valley subject? I'd like to (voice overlap)

DA: One other question: Last May when you mentioned these thirty studies in a letter to Mr. Morton you that Canada is not only willing to entertain applications for a Mackenzie Valley oil pipeline but if there is a delay in delivering Alaskan oil by choosing the Canadian route and this delay causes shortages in the United States, Canada would be willing to supply the U.S. with oil in the interim and then last month you imposed oil export controls and the people I have talked to in Washington suggest that your export control announcement was undermining the credibility of that earlier letter. Does your first statement still stand that said (1) we are willing to entertain applications for a Mackenzie line and (2) supply them with oil in the interim if they choose a Canadian line?

DM: One, yes, and I think that we can meet two, the second objective, as well. Basically the—we are now supplying the Puget Sound refineries on the American west coast through the Canadian trans-mountain system. They are starting to get some tanker shipments from overseas. But I think that we would make every effort to try and meet the increased demand of the Puget Sound system in that period of years before the whole system, the whole Alaskan system could come into operation. I compare that our picture has changed a little, that a fuller examination of our own reserves and so on does indicate that Canadian oil from the Alberta Basin is not as plentiful as many of us had come to think it was. (Voices overlapping)

GB: Since we don't need the Mackenzie route for some time really, what you are measuring here is the cost of that in terms perhaps of an increase in the price of the Canadian dollar versus environmental hazard on the west coast from the United States building a sea link. Doesn't this argue very strongly for people who say that we ought not to be considering the Mackenzie route at this time?

DM: Well, George, I think it does argue—we're talking about either a Mackenzie route for gas or a Mackenzie route for oil. In relation to a Mackenzie route for oil there is this tradeoff. If the Americans came back and said to us, look, we've had second thoughts on that Trans-Alaska pipeline. We would like to take you up on your willingness to entertain an application about the oil line through the Mackenzie route, I think the interests of the west coast would dictate that the Government of Canada should enable that kind of application to go ahead. With regard to the gas line which in my opinion is likely to be the first application with regard to the Mackenzie Valley, really what it gets down to is a decision as to whether or not we would let this kind of pipeline go ahead in the early years really so as to again have the American gas consumer pay the cost of construction so that in later years the Canadian market would have the benefit of a pipeline system.

PS: I'd like to get down to this question of these reserves. Now you say that the reserves are not as great in Alberta as you thought that they were?

DM: Well, basically I think that the—I noticed for example that the Canadian Petroleum Association came out just this week indicating that there had not been—that the production from the Alberta reserves in effect had for the second year exceeded the discovery of additional new fields and it does indicate that certainly we're not in a position to continue to meet indefinitely the demand, particularly from the United States, for Canadian (oil).

PS: But you're speaking now of proved reserves, but the potential reserves are enormous. I mean, if you take into consideration the tarsands, the potential reserves vary, whatever ( ) you want to have, between 385 billion barrels and 500 billion barrels which means that at the rate that we're consuming oil it would last us for a thousand years.

DM: Yes, but I think there's an important difference between potential and actual reserves in place. In order to realize any part of those tarsands, for example, requires the construction of a very expensive tarsands plant. I think the going rate for them is $250 million so that there's a very substantial investment required even to bring on each additional 125,000 barrels a day. In this sense we've, for the purpose of calculating tarsands reserves, the practice I think is now established of if you have a plant in place then you calculate on the throughput that it could put through the plant in a given period and you'd add that on to your proven reserves. Anything beyond that—the potential in Athabaskan tarsands is great but until you have some means to realise it, just as until you have some means to pipeline gas or oil to market, then it's a potential only and it's not an actual thing.

EP: Mr. Macdonald, did you by any chance happen to read a recent article by Professor (?) Wilson on the subject and I think you'd agree with me that his credentials command a certain amount of respect on the whole subject of energy and Professor Wilson was making the case that we really should stop everything now in terms of the exportation of our energy sources. He seemed to draw a picture of people in Winnipeg and Sudbury and Ottawa and other similarly cold climates being forced to, you know, go back to coal or some other alternative energy source within the lifetime of people now alive in Canada.

DM: I think that's an exaggeration. In the first place he didn't really deal with the increased role that nuclear energy is going to have in the total Canadian energy supply and, secondly, I think there are very substantial reserves of both gas and oil to meet Canadian needs certainly for my lifetime. I would agree that we're going to have a careful balance as to how much we're prepared to emport and this is where I think the difficult question comes in because if you can develop a pretty high rate of return from an export market then you're liable to have investment capital to come in to look for additional quantities of the material. But if you're going to lower the rate of production then you're also taking away the incentive to look for more. It's a case in which you're continually chasing your tail or (voice overlap) more to find more and his ultimate proposition that the oil and natural gas resources are finite, well, nobody disagrees with that.

BP: The argument that the petroleum industry has always advanced about exportation is the one that you've just given us that we must sell it to develop the income necessary to explore for more but there is an implicit risk that you're not going to find any more and certainly that's been the case in the United States now where their domestic consumption far exceeds the rate of discovery in the United States.