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HOUSE SPECIAL COMMITTEE

ON THE

SALE OF ROYALTY GAS

Committee Meeting - 1/27/77

HOUSE SPECIAL COMMITTEE

ON THE SALE OF ROYALTY GAS

REPRESENTATIVE CLARK GRUENING:

We will come to order. This is going to be rather informal. This is the first meeting of the House Special Committee to Consider the Sale of Royalty Gas. We have with us tonight Commissioner Guy Martin, who, I think, has been following us longer than anybody, in this room anyway. He is eminently involved in negotiations and what it is to sell this natural resource. With him is Easy Gilbreth who is now head of a new division called the Division of Minerals and Energy Management. And he still has his fingers in the Division of Oil and Gas and knows a lot about the technical aspects of extracting gas and moving it. We also have Fred Boness who is with the Attorney General's office and, as I understand it, is the resident legal expert on the sale of royalty gas and oil.

I think the committee will have some questions, particularly of you first, but we have just received... First let me preface this, that we have lost one of our experts in the House, Willard Bowman, who initially started the interest of the Legislature in this area with his proposal bill which became law. That created the joint gas pipeline committee. With the exception of myself, I don't think any of these committee members have served on that committee although I think they have followed the issue, so tonight I want to cover some of the basics so that we're, maybe, better prepared for the hearings that start on the 31st.

The resolutions just arrived from the Governor and he mentions in them that he wants prompt action on them and that they were introduced on the House side later to expedite the action. Can you tell us, Commissioner Martin, what in particular would require us to speed it up? Is there anything we should know in terms of time limitations and such? It may be our first consideration.

MARTIN: Well, first, Mr. Chairman, I'd say, first of all, I think we've tried to make it clear, when asking for prompt action, that we don't want that in any way to suggest that you ought to act any more quickly than you think you ought to responsibly, pursuant to your responsibilities under the Statute. So we put the matter before the legislature very early in the session. I think either the first or second day, all the materials were delivered and, hopefully, a lot of it was in your hands by various means before the session started. I don't think we mean to at all, pressure the legislature to act more quickly than they think they have to to look at these things closely.

In terms of the need to act on them as quickly as reasonably possible in that constraint. I think it is a series of factors. Let me just put it very bluntly -- the train is leaving the station on the decision on the gasline in Washington. And the timing of the Federal decision is underway now. Now whether that decision is made for practical purposes, in June or July, or September, or at the end of this year, is something that, quite frankly, I don't know. But there is going to be a critical time when the Federal decision comes together and it's going to be a combination of factors that has to do with the ability of the Canadians to really show us whether they have any capability at all, or any willingness to agree to a pipeline through their country. And it is going to have to do with the agency reports, the FPC report followed by the Federal agency reports, and then by the emerging position of the Carter Administration. I don't think we really know when that will be. But we know, now, with some certainty, it will be during 1977. My own view -- I think I can say that I have some acquaintance with what is going on in Washington -- is that it will be earlier, rather than later in 1977 that most of the key decisions are at least forming in a way that will limit Alaska's alternatives.

My major concern is this: That these contracts -- and we can argue endlessly whether they come in response to legislative initiatives last year, public initiatives, or whether they are an immaculate conception of the Administration, which the legislature has just discovered for the first time. But the point is that these things are here, really I think, as a function of the cumulative desire to see this alternative developed. And that's what we've done. So long as it's proposed, and before the legislature, but undecided upon one way or the other, Alaska is in a kind of a limbo with regard to the Federal decision. Our position is clear. We have a strong position of advocacy in favor of the Trans-Alaska route in Washington at the FPC. And the Administration is going to advocate that route so long as our analysis holds up and there is no contrary assertion by the legislature or the Alaska public.

But these contracts are looked upon as something as a watershed, I think, for the pipeline decision. If they are pending for a long period of time, to some extent, I thing that immobilizence, the perception of Alaska's position back East, they are waiting to see how we are going to decide. So I think our preference is the Administration -- is to get a decision on it. Is this alternative something we want to do -- get going on it. Assert ourselves in the fight. Essentially bring on board a full measure of the support of these buyers and their constituencies in the United States. Is it something we don't want to do because the contracts are a bad idea. Because the terms of the contracts are offensive or there is something in the policy that we don't want to do, or don't really want to do them because we now have changed our minds and want to support another route. Any of those decisions, in my view, would be preferable to a lengthy period of indecision while the proposal was before us. And so that, I guess, is the summary of our position.

GRUENING: Okay. Maybe I will be more specific. If there is a need to get into more information, to hold further hearings, do you see any -- In other words, the session could go 90 days and at the end of 90 days, is there anything that is crucial, of crucial importance that we, say within 90 days from now as opposed to something that is going to happen after that 90 day period, later this summer. When you say, "they", these contracts are going to have some affect on "they". I'm trying to determine who "they" might be, and are those persons more likely to be affected later in the year or is it something that requires prompt action?

MARTIN: Clark, that judgement, like a great deal have to do with these contracts, I think has to be made by what I call accumulative subjective judgement. My own view is that every day is important. I was, as you know, the State's representative in Washington during the oil line debate, and you simply can't afford to lose very many days if your position is clear during the decision making process. I honestly can't tell you what days will be the critical days. But I can tell you that if our position is to support the Trans-Alaska pipeline, the gasline route, and our decision is that these contracts are a good idea, the best possible situation would be to have decision right now and start immediately. If there is legitimate doubt, and that is borne out by legislative investigation, we should take whatever time it takes to get there. I know what you are looking for. You are looking for guidelines. Is there something that happens in April or March or June that's very important that you're going to be up against. And the answer is -- I don't think you can go by those guidelines. I think you should ask a lot of people that question and get their view. I think you should start with the delegation in Washington. But I will give you my own views -- that I think the decision ought to be made as soon as possible, one way or the other.

GRUENING: Representative Cotten?

COTTEN: Okay. I have a quick question. It came to my mind that we've got kind of an odd situation here. But if it is the legislature's final decision, as it will be, is it going to bind the Administration's decision? Are you going to do whatever we decide is best, as far as legislation?

MARTIN: Sure. The royalty statute really gives the legislature really two options at this point. That is to approve or disapprove the lease contracts. The way the procedure works: they are put together by the administration; they are approved or disapproved by the Royalty Board; and they must be then approved by the legislature before they are valid.

COTTEN: It is a statutory requirement?

MARTIN: Statutory requirement. If they're disapproved, what I would hope is that the legislature speaks with a very clear voice and a unified voice. Not a series of individuals all indicating what their problems are, but a clear, unified voice as to what the problem is. And then the Administration will undoubtedly seek to be responsive to that. If it is approval, of course we will be guided by that. If it is disapproval, and spoken with a clear voice, we'll have to do whatever is possible to accommodate that. If the disapproval is clearly stated and it has to do with an individual term in the contract, we would then have to go back, renegotiate that term, resubmit it to the Royalty Board, and bring it back to the legislature again. And that's simply a statutory imperative in this case. And that's a -- I suppose it could be done expeditiously but it's probably a one month process, depending on what term it is and what the negotiations are. There are some terms that have been suggested for renegotiation that, in my view, simply could not be renegotiated. Others could be but would take time. Others would probably be reasonable.

GRUENING: Representative Chatterton?

CHATTERTON: Thank you, Mr. Chairman. Commissioner, I have just, hurridly, scanned Public Law 94.586. In trying to help you answer a target date when something must be finalized, and knowing, I guess, by law we cannot lobby the Federal Power Commission -- it's against our statutes -- they've got up until May 1, 1977 before they put it before the President, is that right? And that would be the earliest date that we could start lobbying actions?

MARTIN: Well, that would be a very late date as a matter of fact. Because one of the things that would be most important to influence in that decision would be the Federal agencies which are preparing the recommendations that go to the President. There is a number of targets that Alaska's going to have to look toward. And Congress is the last of them. The most important early target will be the various agencies that will be making recommendations, the Department of Interior, FEA, Transportation, etc. And quite frankly, because many believe, and I subscribe to this view, that ultimately I doubt if the President will send a recommendation to Congress on this issue, that he doesn't know the answer to. I don't think the President would be in the position of sending a recommendation up there wondering what will happen. So I think that our influence is going to be best utilized at the time that they are making the administrative legislative accommodations.

GRUENING: Commissioner, will there be any holding back by these agencies until the FPC makes a decision?

MARTIN: No. So far as I know we are still very early, just in the first week or so of the new Administration, but my information and my belief is that the agencies are going to go all out to try to deal with this issue. The FPC decision is going to be influential, but let me say that my expectation with regard to that decision is that it will be extremely lengthy, it will be a decision which is filled with a number of conditions and a number of conditional statements, and a number of maybe's, in the sense that it will give a number of conditions that must be met for one not to be satisfactory or another. And the agencies will have guides from the FPC but a lot of clear field for themselves to investigate.

GRUENING: Representative Chatterton?

CHATTERTON: Thank you, Mr. Chairman. Commissioner, Guy, help me here. The reason why I ask this question. Now I am looking for when (quote unquote) your lobbying effort wants to start. Actually, these other agencies of the government can only give testimony to the Federal Power Commission, isn't that correct? They can't...

MARTIN: The Federal Power Commission procedure is effectively over with one exception. The decision on it is going to be rendered probably on the first of next month. And following that there will be a brief period during which briefs will be filed and that will terminate at least the hearing at the Administrative Law Judge's part of the proceeding. How the commission acts, the full commission acts pursuant to that is still an open question. And there are a number of theorys as to what they will do. Whether or not they will engage a whole commission proceeding. Whether or not they will defer to the Judge's decision. Whether or not they simply won't render a decision at all and will wait the direction pursuant to that. They are all open possibilities. So I just don't think you can emphasize enough -- and you don't have to have a position on the route to say this -- that Alaska ought to be in the game, pretty fully armed on one side or the other at the earliest possible time. And if what you are looking for from me is some way to tell you how much latitude you have in terms of time, the answer is it would be better if it were done today. I'm saying that the legislature ought to take the full amount of time it needs to responsibly deal with the issue. But you can't carve out a period time and say, "this is a safe time to deal with it." We ought to be going now.

GRUENING: Any questions on timing? Just one on the FPC role. Commissioner, do you think the State is losing any flexibility by not waiting to see what the decision from the FPC is. Or is that decision so insignificant in the total process that it really doesn't make any difference?

MARTIN: No. The Attorney General, in his transmittal letter of our gasline task force to the Governor, made it very clear and with my concurrence, that there were a series of extremely important facts, or actions, or mileposts, that had to be acknowledged. One of them is going to be the decision of the Administrative Law Judge. Now, that is an important decision. Before the passage of the procedure bill in Congress last session, it would have been a crucial decision. But with the passage of that bill, it has significantly diminished in importance compared to the findings of the agencies and the Presidential finding and the Congressional action.

GRUENING: Could I ask you how the procedural act -- you're referring to the Alaska Natural Gas Transportation Act? How does that lessen the importance?

MARTIN: Basically, under the standard procedure that they use in a situation like this -- the Hearing Judge's opinion would simply refer directly to the Federal Power Commission, the five member commission, and they would then make a decision on it and that would be it. The proceeding would basically be over at that point. Under this circumstance they have done what they did, really, in the oil line situation, and expanded it to make it a full blown national decision involving both the President and Congress, which would not be required by ordinary law. So I would say that the FPC decision and the Hearing Judge's opinion becomes one of many factors, nevertheless an important one, but one of many factors that will influence this, whereas before, it would have been probably the major background factor.

GRUENING: Any questions on that? Will the FPC actually, if this contract is concluded, finally approved before their decision, will they make any certification or approval, or take any note of it? Will they officially take any action to certify or approve or otherwise pass judgement on this contract?

MARTIN: Let me make sure that... Clark, what will happen is that they have two roles under the new bill. First will be, produced the Administrative Law Judge's opinion, next week. Then the FPC will take some action on that, which will be one of many inputs into the national decision process that the President and Congress will make. It will be one of many. Then at the end of the entire process, when the decision has been made by Congress ratifying the President's recommendation, the FPC will come back again at the end and effectively "rubber stamp" the decision by issuing a formal certification. But that will be an administerial act.

GRUENING: Will that administerial act have -- this should maybe be addressed to Fred -- have any legal affect in terms of, say, strengthening our ability to take back gas later, or is that covered in some other aspect?

MARTIN: Yes. I'm not sure we're going to that question, Clark, but our ability to take back would have to be approved beyond any appealable state at the federal level for these contracts to ever be valid. Let me give you a case in point: We could conceivably enter into these contracts and gain the support of the buyers, proceed into the fight, and win the fight, and upon winning the fight for the route that we wanted, achieve the route that we wanted, and if the contracts were not ultimately approved, the take off provision, the ability for the State to take back, if they were not approved and we could not have that take back, the contracts would still be void. So that we could conceivably get it both ways in that situation, although you can tell whether or not that is going to happen. But these contracts will not bind us unless the take back provision is ultimately validated by the Federal approvals.

GRUENING: Commissioner, if the Section 13(b) of the Transportation Act is repealed, as we've heard rumored, would that void the contract?

MARTIN: Not necessarily. Let me talk about that for a second. The best way to look at it, Mr. Chairman, is to go back to the situation that existed before 13(b) was in effect. Under that situation, we would have had to have either gone to the FPC for approval of the take back provision

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directly. And this was one of the main reasons, quite frankly, that I was very luke warm about these contracts for a long period of time because I felt that the chances of the FPC approving that take back provision, without a Congressional action, was just extraordinarily slim. So I thought there was something illusory and unrealistic about these contracts. Nevertheless, let's say we had a slim chance of getting them approved by the FPC but they would have had to have been approved there in order for the provision to be valid. Once Section 13(b) was passed, which was something we pursued fairly diligently. It gave a Congressional mandate that such provisions be approved by the FPC. Now, if 13(b) survives we should be in good shape. If 13(b) doesn't survive, we are back where we were before. We still have a slim chance of them being approved but still no risk of loss of the gas if they are not approved because the contracts would fail of their own terms if they are not.

GRUENING: So, if I understand what you are saying then. They are not void, per se, if this is repealed, even before, let's say, approval of a route.

MARTIN: Because we would still be able to pursue the approval of that term that we would have pursued before, and that is direct approval of the FPC, without the Congressional mandate.

GRUENING: But your reading of the contract is that if this should occur then anything less than a clear declaration by the FPC that we had full rights of take back, under the contract, would void the contract.

MARTIN: Yes. That is my reading. And I think you probably ought to follow up that line of inquiry with the buyers as well.

GRUENING: We will. Are there any questions, now that we are just touching on this special provision? I would just like to read into the reco·d the Section 13(b) that we are referring to. It seems remarkable for legislation because it is so clear. It says, "The State of Alaska is authorized to ship its royalty gas on the approved transportation system for use within Alaska and to the extent its contracts for sale of royalty gas so provide, to withdraw such gas from interstate market for use within Alaska. The Federal Power Commission shall issue all authorizations necessary to effectuate such shipment and withdrawal subject to review by the Commission only of the justness and reasonableness of the rates charges for transportation." It seems to me an unusual provision. Is there any other state in the Union that has anything equivalent to it?

MARTIN: It is unprecedented. Mr. Chairman? May I make just a short comment on that. There is a lot of speculation about whether or not an attempt will be made to overturn that. Let me put myself on the record on that by saying that it is just very unclear whether that will be the case. I don't doubt that an attempt will be made. There is just no doubt in my mind that individual Congressmen have made it clear that they are going to do that. John Dingell of Michigan said, "I'm going to try to get rid of that." I don't want to sell the committee or the legislature on the idea that they should act in fear of that repeal. I do think, however, that when people talk about what we get with this contract in addition to what we think is a good price provision for the gas and whatever support people believe will come as a result of it, we also get probably our best attempt to deal, or to take advange of that at this time. And I will tell you just very briefly why.

What we are really doing -- and I think this has been misconstrued a great deal -- is we're telling people, by this contract, in the lower 48, how it is, the terms by which our royalty gas might be made available to them. And we are telling them which system for that to be in, and we are telling them what kind of notice they would get if we were going to take it back. We are being reasonably honest with the people, given the fact that we do want to retain the right to take it back. Really, when you are sitting in Cleveland, Ohio, tonight and you don't have any gas or your thermometer is at 62°, or the gas company can't supply you gas, and you hear the State of Alaska wants the right to take all its gas back to make plastic, it is a difficult case to make. But the only way that you can make it reasonably, is to say, "Alaska has aspirations like any other state and we would like to try to fulfill those aspirations with our share of our natural resources." So what we have done is laid out for them the terms on which we want to do that, without simply being arbitrary and saying, "We want it all and we're going to take it all." We've said, "We will sell it and commit it to these companies in these states, but under these terms -- to take it back at a later time on fair notice." And I think that is the essence of that provision that can be attractive to Congress. And I think can serve as a positive argument that Stevens and Gravel and Young can make, that we've made an attempt to tell them how we've taken advantage of this thing.

GRUENING: Representive Parr?

PARR: You are expressing an argument. This is the fact that the contracts are a positive thing ____________. I think that most of us have heard that these contracts are likely to expedite the deal. Those sections are in there -- are supposedly because we need this gas here. ____________ ____________. I guess ____________ ____________ in giving it to some other people is that we say that we need the gas in Alaska. We've got an Arctic climate, we have real heating problems and all sorts of things. So we need to have ________ (indiscernible)

MARTIN: I think that... I don't accept your characterization of the motive for why it passed. The thing passed, I think somewhat along the motives that you indicate, but it is really along the motive that Alaska asked for this, that the distance problem is quite extraordinary. In other words, don't make resources leave Alaska because of the tremendous amount they have to travel and the amount to return them if we need them. The people who voted for it trust that Alaska will treat that provision reasonably. But I would think that if I were a Congressman from Ohio and I were looking at that, I would rather have the terms of that withdrawal that Alaska might make, including the one and two years notice provisions that we have. And being out front with that, I would rather have those, preferably to having that provision, 13(b), exist, kind of in a vaccuum, not really knowing when it was or how it was that Alaska would exercise that. Under the terms of this contract we at least set some boundaries as to how we would exercise it and we can talk about it to individuals down there. Whereas if we didn't exercise it, it would simply exist and they would ______ some uncertainty as to how we would ultimately do it, and if we would have a full right to do it anyway.

GRUENING: I kind of share some of Representative Parr's questions in the sense that, aren't we telling them that what we are going to do is take 100% of the gas back if we want to? And there is no other criteria for that event? And the reason we are doing that is because you passed this amendment which allows us to do that. Doesn't that kind of challenge them, directly throw it in their faces?

MARTIN: No. I think the only answer I could make is I'm not sure what they would think if we didn't do this. If we didn't do it we would still have clear right to take the 100% back under the terms of the amendment, and to do it without any notice, one year or two years or anything else. We simply have the right to do it. So what we've done is give definition to a right that we have. And in the other case there is no definition, it simply exists without any definition.

GRUENING: Well, my point is that some Congressmen may feel that that right only exists by virtue of the amendment.

MARTIN: Certainly. I think they are correct if they say that it exists substantially because of that amendment. There is no question about it. I think they would know that one way or the other.

GRUENING: You mentioned that certain Congressmen had announced a desire to seek repeal. On what grounds?

MARTIN: They opposed it to begin with. Most of the ones who now say they will try to repeal it, were Congressmen who opposed it in the...

GRUENING: I mean, what were their grounds for opposing it?

MARTIN: Their grounds for opposing were basically that Alaska had no right to deprive the rest of the nation of this gas, whether or not it was royalty gas or not.

GRUENING: Representative Hayes?

HAYES: Just to follow up on that. If one or more Congressmen pursue that idea of rescinding that particular part of the agreement that we can withdraw our royalty gas, what is the timetable on that? How long would it take. Do you have any idea of that?

MARTIN: To repeal the amendment?

HAYES: Yes.

MARTIN: Well, it could go as quickly as it could go through Congress. There is no timetable established.

HAYES: About?

MARTIN: Oh, I'd say that it would be difficult to do something like that in any less than a month. But it could be done at a more reasonable timetable -- a couple, three months. It would depend on whether or not it was taken on as an individual issue, which is somewhat unlikely, or whether or not it would take it on as a part of the gas debate itself, and only happened at the end of the debate. My guess would be the latter would be most likely.

GRUENING: The Governor has mentioned, I think it was in his speech and correct me if I am wrong, his speech announcing the conclusion in the contracts, that one of the considerations for prompt action was that this repeal might occur. The inference being that if we approve these contracts before

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repeal we would somehow be in a better position. Maybe this goes to Fred Boness as an attorney, but I'm questioning -- as a legal matter, is that true? Is there any doctrine or any precedent for being in a better position if they repeal it? After we have concluded these contracts?

MARTIN: Fred should answer that detailed part, but just let me say that just as a policy matter, that the Governor did not mean to infer that we got absolute protection by acting early. He was really speaking of the answer that I just gave you. And that is that we think that we take the best advantage of the existence of that amendment by acting on it ______. Really, with the thought that if it is challenged successfully, it's lost and we have missed the opportunity to do that. So that shows the thrust of that remark. Let me ask Fred to answer the legal aspect of it.

BONESS: No. I do not believe that it is a legal matter. The contracts passed while the statute existed -- we'd have some sort of grandfather rights if the statute were repealed.

GRUENING: Are there any question on that? Representative Cotten?

COTTEN: Can I have you clarify something? It was a question asked earlier, and now it comes back to mind. You said that some people were of the opinion that... You mentioned the word __________ in regard to the contract and the repeal and our ability to take back even if it is repealed. You said there was still a possibility. If 13(b) is repealed, you seemed to indicate that there was still a chance that we could take the gas back.

MARTIN: If 13(b) is in place, we stand an excellent chance of getting the contracts approved for the take back provisions. If 13(b) is repealed, I think it reduces the substantial chance that it will be approved to a slim chance that it will be approved at the FPC.

COTTEN: I don't mean the contracts, I mean the take back provision.

MARTIN: That's what I mean. I mean the take back provision in the contracts.

COTTEN: The FPC would still have the ability to...

MARTIN: If the legislature approved the contracts, and 13(b) were subsequently repealed, we would then attempt to get the same take back provision okayed, but we'd do it through the FPC. And we would do it without the benefit of 13(b).

COTTEN: So the FPC can do it without the statute?

MARTIN: They still could do it. And we think we have, if our argument is reasonable for keeping some of this resource in Alaska, we think it might be the case. If I could, let me elaborate on that a little bit. Let me tell you what might happen in that situation. If we go to the FPC and we say, "We want a total take back pursuant to the terms of this contract," I've always thought the chance that they would approve that are low. So this term may not survive. But putting this contract aside for a second, what is it that we might be able to slide by the FPC? What the most reasonable grounds would probably be is a provision where we maintain some kind of a right to keep resources in Alaska, gas resources in Alaska, for certain priority uses. For instance, we might be able to protect ourselves for the future for things like municipal gas supplies, domestic uses, and so on. But they would draw the line at the point that you're making maybe petrochemicals or something that would be secondary use in the lower 48.

COTTEN: In other words, they might let us keep some of it.

MARTIN: That's right. That would be our...

COTTEN: Where would that take place? At the end of the Congressional decision?

MARTIN: Well, it depends on what happens to 13(b). But it would take place at the end of the Congressional decision.

COTTEN: What happens if the FPC got in there before and had...

MARTIN: It would take place at the end.

COTTEN: So then they would be conducting more than an administerial function, is that ________?

MARTIN: Yes. But if 13(b) were in place, it would probably be administerial, if it weren't, that's right, it would be a very very difficult procedure.

GRUENING: Representative Chatterton?

CHATTERTON: Are we still on the contracts or are we ready to proceed to another question?

GRUENING: I think we will shortly, but I had one question. Representative Meekins?

MEEKINS: Commissioner, in following up what Sam talked about, I don't know the inner workings of these things but it

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seems to me the FPC would be a little reluctant to grant us what the Congress, just a month before, repealed. I know they don't take direct orders from them, but it would be a pretty strong move on their part.

GRUENING: I understand that the State has intervened in a case called the Pacific Alaska LNG, and another case that involves the Public Service Commission of North Carolina and Texas, is that right? And is it one of the purposes of the intervention to establish take back rights involved in those contracts?

BONESS: Not in this contract.

GRUENING: No, I understand that. But those contracts involved.

BONESS: That's correct. Pacific Alaska LNG proceeding would involve certifications of the contracts entered into between the producers and purchasers in Southern California. One of the things we wanted to make sure of was that the producers, their purchasers, the FPC and the public in general, is put on notice that the provisions in our lease which allow us take royalty either in kind or in value. As it stands now, the producers are selling (indiscernible).

We wanted to make certain that they were aware of our recent provision in that the FPC and everybody had notice of it and that we might switch back. That no decision, particularly we are concerned by the decision that would be made on the assumption that all of the gas that is committed and then if the State took its royalty in kind, that somehow or other that would seriously affect, say the economics or viability ______. In which case you might then run into serious federal preemption type questions. We felt that if we give them notice at an early date, the chances of preemption issues being raised would be substantially minimal.

GRUENING: Representative Parr?

PARR: Yes, I guess I got lost there. Would you mind going over that in layman's terms. ________________ was going to sell 8/8s of the gas they were getting out of the Prudhoe Bay area to somebody else. And we felt it necessary to go (indiscernible)

BONESS: Yes. At the time we intervened, there was a case that had been decided by the FPC and was on appeal to the Circuit Court of Appeals. In that case the FPC had held that reversionary interests, the person who leased the land to the oil companies, the land came back to the oil companies. The lease was back in the 20's. The land ca·.e back to the owner of the land. The FPC said that even though he had not been involved in any of the sales by the oil companies, gas to purchasers in other states, even though he hadn't been involved in any of those sales, when the lease came back to him, his gas was committed to the interstate market. And he said, "Now, wait a minute. I wasn't involved in that. I want my gas. The lease is over, it is my land, and I want it." The FPC said no. He was committed. We were concerned that the same thing might happen to us if we didn't make known that our lease allowed us to take back our 8/8s and the producers, that is, our leasees, the oil companies that we issued the leases to, who are producing the gas, sold all of the gas, because at this time we were taking in value. The FPC at some later date, would say, "Now, we certified all of that gas to move in the interstate market and we are not going to let the producer comply with this lease. We are not going to let him comply with your notice."

PARR: Isn't it against the law to sell something that doesn't belong to you?

MARTIN: The confusion here is -- that may be right -- but under oil and gas leases the producers, the people who you sell your leases to, under ordinary circumstances, take the royalty 1/8 in addition to their 7/8, and sell it all and simply give you the money back. So what we are dealing with here is a circumstance where, if they do that (cough) under whatever circumstances, and then we decide that we don't want them to sell our 1/8 anymore, but we take it back and use it some other way, that we were afraid that these cases colored our right to do that. So what we are doing is intervening in every case where what we think our rights might be are colored and attempting to make our point.

GRUENING: The situation then would really describe the problem that the State would have without a Congressional take back authorization without FPC approval. In other words, we could have 8/8s of our gas if we hadn't used it in the beginning when the lease was used, chances are we would lose that 1/8. Isn't that the purpose of your intervention? Is to prevent that situation from happening?

MARTIN: Our purpose is to prevent other cases from coloring that decision. There doesn't appear to be a decision that's exactly on point, but we are intervening in all the cases that would appear to create prejudice against what we might want to do.

BONESS: Right. Our purpose for intervening in Pacific Alaska was to protect the gas that was there, involved, that was Cook Inlet gas, leases that are issued for Cook Inlet. Our purpose for intervening in the Public Service Commission of North Carolina was because that was a case which was not identical but quite similar to the situation which could exist either in Cook Inlet or which does exist on the North Slope. There, Texas is attempting to, under one of its leases, to take some gas, in kind, which in the past it had been receiving royalty payments for, and sell that to the Public Service Commission of North Carolina and transport it by contract over the pipeline that connects Texas with North Carolina. Texas is arguing that it is a state and not subject to the natural gas act. We intervened in that case because that argument will be relevent to the State of Alaska in arguing that our sale of gas is not subject to the Federal Power Commission's jurisdiction. The problem with the take back provision, and the reason why we need Section 13(b) does not come about as a result of the FPC potential power to regulate the sale of the State. Rather, it comes about by virtue of its power to regulate the pipeline, the transportation service in which the pipeline engages in. The Federal Power Commission could and has in other cases, said, "We are not going to allow you to transport that gas because we don't like what the person who wants to transport it is going to do with it." That is the reason for Section 13(b) and the take back provisions in the contracts.

GRUENING: Well, is there any practical difference -- unless you can take it out any other way than the pipeline?

BONESS: There is no practical difference. The importance of the difference is in sort of the chances of winning the case. One, I think, with respect to beating the FPC at their ability to regulate the pipeline, the chances are much weaker.

GRUENING: What I think I was aiming for, Mr. Boness, was if you get a favorable decision in the Pacific Alaska Case, will that give us some precedent in terms of Prudhoe Bay contracts. In other words, do you recall Russ Moody's advice -- earlier advice to the legislature -- prior to any amendment being passed by Congress, his suggestion, if I understand it correctly, if you have knowledge of that, is that we should sell in interstate commerce in order to get an approval of the sale by the FPC in order to establish a take back right. In other words, sell some portion of it. Is this more or less what you hope to arrive at in a favorable decision in the Pacific LNG case?

AGO 799468

BONESS: Clark, let me say, harkening back to last year's discussion with Russ Moody. You are right. I think the answer to your question is yes. That that is what you would hope to accomplish. At that time I think we expressed the same reservations we are expressing now. And that is, he made it clear that that does not buy you protection. He made it clear, on the other hand, that that was probably the best course that he thought you could take to attempt to do that. So that what we think we've done with the royalty contracts is to combine that idea with the idea of gaining whatever additional support for the route we want, plus gaining utilization of 13(b) at an appropriate time. So we are really proceeding sort of on all three theorys. But to be perfectly honest with you, we've always had reservations about the ability of the theory that Mr. Moody advanced to help us a great deal. In other words, it is the weakest link in the things that we get. But sort of about fourth down the list. Yes. We're taking advantage of that and think that it is something worth pursuing.

GRUENING: Could we accomplish that Moody theory or the Moody -- or let's say the approval theory -- just as well with the cases that you're intervening in, by doing it in a direct sale as proposed before, in terms of the Prudhoe Bay sale. And take out of that the amendment. Do you understand the question?

BONESS: Would we benefit by simply having one of those cases win and not need to do anything ourselves?

GRUENING: Yes. I mean, do you see any added benefit, assuming there were no 13(b), of trying to make a sale?

BONESS: I understand what you are asking, Clark. I think, first of all, none of those cases are related to 13(b). None of those cases, even though they are influential, are on point with our situation. I guess our statement would be -- we really don't think we can afford to lose any of those, very many of them. But we don't think that we are the direct beneficiary of any of them winning. We would not gain certainty from victory in any of those cases. But we would gain certainly from getting our contract approved.

GRUENING: Even without 13(b)? The question is...

BONESS: If our contract were approved all the way through the FPC...

GRUENING: I guess what I'm saying is, would you recommend a gas sale of this magnitude... (end of tape)

AGO 799469

...matter of just establishing our right to take it back.

BONESS: I wouldn't recommend it only for that purpose. I would recommend it if you could make a sale of that type that had other advantages for the state. But I didn't recommend it last year and I wouldn't recommend it now, necessarily, only for that purpose.

MARTIN: Fred makes a point that I think sort of brings out what I just said would be one of the problems. Again you go back to the fact that what the FPC regulates is the transportation. So that if you made a big sale like this based on the Moody theory which we didn't agree with, particularly, last year, every transportation arrangement that grows out of that contract would have to be approved. It may not be that everyone of them would be decided uniformly, so that you'd just have to, I guess, face the fact that you are swimming in fairly uncertain waters on a great deal of this. But I would not necessarily recommend, in fact I wouldn't recommend, a sale of this magnitude only for that purpose.

GRUENING: Representative Chatterton?

CHATTERTON: Mr. Chairman, I will make a statement, and somebody around here tell me if I am halfway right. By virtue of the State of Alaska entering into these contracts here, we have them, and they are all signed and everything is happy, we are a year from today, these contracts are in force -- we have then taken our 1/8 gas in kind -- we have opted to do that instead of taking it in value, therefore, I see no similarity between our situation a year from today, these having been signed, and the North Carolina case. Is that a factual statement?

MARTIN: The North Carolina case deals with a question of whether Texas as a state, the owner of royalty gas, must get approval of the FPC to make the sale. The Federal Power Commission -- everytime the owner of gas wishes to sell that gas in interstate commerce resale -- in other words, if he is selling to interstate pipelines, he is going to sell it to somebody else at the other end who in turn is going to sell it to somebody else, and that is the way the whole business operates. The __________ pipeline sells to a distribution company that sells to people who consume it. So everytime you make a sale like that you have to go to the Federal Power Commission to get approval of that sale. The way the definitions are set up in the natural gas act, it appears states do not have to do that. They can sell gas without getting Federal Power Commission approval. That is what the issue is in the Texas case. If Texas wins, there will be no question but that this contract for sale, this contract does not have to be approved insofar as the State making the sale of the gas concerned. If we lose that, this contract must be approved. If Texas loses that and we are unable to distinguish ourselves from Texas, and there are some grounds for doing so, if Texas loses and we end up in the same bag, then this contract will have to be submitted to the Federal Power Commission for approval.

PARR: Mr. Chairman. I'm just a poor old dumb country boy and I have to take this a little slow. Alright, we are contracting to -- if I hear what you just told me -- we are in the process to sign a contract to sell 1/8 of the natural gas existing in the Prudhoe Bay oil pool. There is no contract that I know of for the sale of the remaining 7/8s. Your concern is, if I am hearing you right, that if we lose this North Carlina case, why it's going to be a matter of -- the 1/8 tail does not wag the 7/8s of the dog. Is that it, as far as the FPC is concerned?

MARTIN: Okay. When you jumped from the 7/8 to the 1/8, I think you may be confusing the Pacific Alaska case...

PARR: I don't even know about it so I can't confuse it.

MARTIN: Okay. Let me come at it this way. What happened in Texas was, Texas leased the land and they discovered gas. The oil company sold all the gas...

PARR: Yes, the landowner chose -- if I can help along here, so I am understanding and we get it across -- the landowner there chose to take his royalty share of gas in value. He already exercised his election with his lease, to take it in value. Now, I can readily see where he gave up his option there, at that point in time. I can readily see that we have elected our option to take in kind before the first cubic inch of gas is moved, is that right?

MARTIN: Okay. But the problem from the point of view of the FPC is that every sale -- it doesn't matter whether you make it on the first day that gas is produced or you wait two or three years and then take your royalty in kind. Every sale in interstate commerce for resale must be approved by the FPC. There is one exception to that which we believe exists. And that is states do not have to have their sales approved. That is what is being argued in Texas, and that is what we are arguing here.

GRUENING: I want to mention one thing that if we have any questions of Commissioner Martin -- I didn't want to keep him here too late, he has another commitment. He was gracious enough to come, even with the conflict. We will get him back again. Charley?

AGO 799471

PARR: My question -- I thought I heard Mr. Martin or Mr. Boness say, a while ago, something that may make this whole thing about Texas academic. I believe he said that even if the case _______________ that they don't require FPC approval, that state doesn't, that the FPC still controls all the transportation mechanisms. So unless they were keeping it within Texas it wouldn't make much difference anyway. Is that correct? So if it is transferrable to our case, if we are not distinguishable, then even if we got the right that, okay, they don't control our sale but we still couldn't ship it anywhere without FPC approval. We would have to use it all instate. So it's kind of an academic thing in a way.

MARTIN: That's right. That's the follow up statement to Representative Chatterton's statement.

PARR: Could I ask one more question? The FPC controls all the shipments in interstate commerce. That's where they would have a stranglehold on us even if they couldn't control the sales. And they also control all the shipments that go outside the country without going through another state. Suppose we were to decide to put the stuff in liquefied form and sell it to Japan. Do they have that stranglehold too?

MARTIN: Yes, they do. And there are two reasons for that. One is, that you cannot export gas from the United States without approval of the FPC. And the second is, even though the pipeline would be located all within Alaska, they still control that transportation. So even if we didn't have to get an export certificate, they could prevent you from moving it from Prudhoe Bay to...

PARR: They control intrastate pipeline and they would also _______________ export license. Is that what you are saying?

MARTIN: I am concerned by your use of the word "intrastate" pipeline.

PARR: The pipeline began in Alaska, it ends in Alaska, it is intrastate.

MARTIN: But that isn't the way the statute reads. The statute says somebody transporting gas in interstate commerce. So even though the pipeline is all located in Alaska, because the gas ends up in the lower 48, that pipeline was transporting gas.

PARR: I said it went to Japan. So you would cover that by the export license.

MARTIN: If anybody's gas goes to the lower 48, then they get control of the pipeline.

PARR: The point is, unless we used all that gas in the State of Alaska, then the Texas case, even if it is won, doesn't really mean too much to us. We could have the authority if the Texas case is won, we could sell it to anybody we wanted to...

MARTIN: Let me just say this. I don't think you can say that it doesn't mean anything to us. But it doesn't solve all our problems. It would be bad to lose it. It would be better to win it. But it certainly doesn't solve all our problems. 'There are other hurdles to be cleared even if we won it.

GRUENING: Representative Hayes?

HAYES: Recognizing that Commissioner Martin has to leave, I just want to make the comment that there are some questions that I wanted to ask that are not related to what we are talking about now, so I will defer to a later opportunity.

GRUENING: Well, I intend to go on unless there are more questions in this area, on the FPC.

HAYES: I just wanted to ask one question regarding what we have been discussing so far. Just a little bit of background -- since you were in the last legislature -- apparently there was legislation passed prior to now that essentially directed the Governor to enter into or to pursue selling our royalty gas. Was the thinking behind that legislation essentially what we are talking about right now? To try to preserve the right? What was the motive in asking the Governor to pursue this? To confirm our ability to sell it or were there other motives? I'm getting the feeling so far -- up to this point you get the feeling that the only reason we have a contract before us is because we are trying to preserve the integrity of our right to sell our royalty gas. Is that a true statement? Is that what this was all about before? Is that what we're...

GRUENING: I can't speak for the other 59 members. There was an appropriation of $50,000 made to the Department of Natural Resources to negotiate a contract. But, no, in my opinion, that appropriation was not made for the sole purpose of entering a contract so we could secure before the FPC a right to take back, no. But I think there were a lot of motives for people voting for it and maybe it is appropriate now if we have questions for Commissioner Martin, to ask him. What was your understanding of what you were supposed to do with that $50,000?

MARTIN: It's one of those provisions and it's really one of the reasons I reacted very strongly to statements where each individual legislator or administration official attempts to say what the motive was. It was a mix of motives. There is no question in my mind that many of the legislators believed that we should undertake these contracts specifically to support the Trans-Alaska pipeline. Others believed that the Moody theory was a theory worth pursuing. Others I think, believed that we should move forward and simply take our gas in kind and see we what we could do with it. It think it was a mix. And what everyone has now is the freedom to deny whatever motive they may have felt or expressed at the time. But I personally think that it is undenyable that there was a very strong direction established to, (1) negotiate, (2) seek support for the gasline, and (3) see what we could do to carry out the Moody theory. The fact that Section 13(b) came along is basically an added plus which we were able to take advantage of possibly by these contracts. I think that misses the point of this whole debate though, actually, and it's one that we tried to avoid very early in the Governor's statement and my own, and simply get on with the business of trying to figure out whether these contracts make any sense to us.

GRUENING: I agree with you there. Representative Meekins?

MEEKINS: Mr. Chairman. I have one question. The language in 13(b), doesn't that -- assuming that everything works right and we prevail, our interests are prevalent in the Texas case -- that's not sufficient because we still have to get authorization for the shipment of gas in interstate commerce. But doesn't this language mandate that they allow us to do that? If we are over that hurdle of the sale and 13(b) is not repealed, then it is sort of sufficient...

MARTIN: That's right. If you assume 13(b) is there forever, then this contract may take advantage of it.

MEEKINS: And the FPC can't say anything about the sale because of Texas or other reasons.

MARTIN: That's right. 13(b) -- we agree with the Chairman. It's about as clear as you can write a provision.

GRUENING: Any other questions? Representative McKinnon?

McKINNON: When we are talking about the repeal of 13(b) -- I just ran across it in my notes -- I am wondering what percentage, assuming the contracts are approved, what portion of these companies reserves will our royalty gas represent? I realize it will be 1/8 of the gas coming out of Prudhoe. But what portion of the reserves of these companies, nation wide, will our gas represent?

MARTIN: I can't give you those figures off the top of my head. We can supply them to the committee.

McKINNON: The point I was thinking about was considering if they do represent a substantial portion of their reserves, how reasonable one and two year notice provisions are going to be seen by Chicago...

MARTIN: I do understand your question. Clearly, you could make the attempt to essentially take advantage of the terms of 13(b) as more reasonable and more reasonable. For instance, the most reasonable way to make it would be to lengthen out the notice provision to a great length, five or six years, and then allow the State take back provisions only for certain specified priority uses omitting heavy industrialization and so on in Alaska. There is no question in my mind that it would make it more attractive.

GRUENING: By reserves, I think you were referring to, Joe, the amount of gas they had committed under sales or commitment to sell.

________: Mr. Chairman, for clarification. Joe, are you thinking of the companies who owned the 7/8s of the gas?

McKINNON: No.

MARTIN: You are asking, for instance, if Southern Natural Gas buys a quarter of our gas, how does that compare with what they had. Is that half of their gas or more? The answer in broad terms is -- in a company like Southern Natural Gas, it represents a very substantial amount of their reserves, not half by any means but in the case of both Tenneco and El Paso, it represents a much smaller percentage.

Incidentally, I might just say that I don't know if anyone here is familiar with the advance gas contract and procedures but, it was a way that people bought gas during the past few years until it was finally outlawed at the federal level. What it did was, it took to the ultimate extreme, the sort of ripping off of gas companies by the gas owners, by making them pay huge cash sums in advance of the time they got any gas. And in some extreme cases they paid in advance for gas that wasn't even produced yet and they didn't get their money back if they didn't hit gas. That's how bad it got before they struck the contracts down. So compared to some of the arrangements that have been in effect in the United States over the past years, ours is not exactly the level of reasonableness, but it is very reasonable in comparison to some of them.

GRUENING: Is that FPC decision -- I think it was an FPC decision that said no advance payments...

MARTIN: It was a federal court decision which then mandated the FPC to not allow any more advance payments.

GRUENING: Does that have any relation on the State's ability to get, say, bonus payments for gas sales in the future?

MARTIN: It precludes it at the present time.

GRUENING: Absolutely? There's no way...

MARTIN: Not absolutely. But it precludes advance contracts which would be the most likely way to get a...

BONESS: What it actually precludes is a company putting it in the rate base.

GRUENING: I understand that. But does that, as a practical matter, preclude cash bonuses. Generally, you would think if you sell something now, commit it now as opposed to the future, even though you are getting what the price is in the future, that usually, in other commodities, is worth something. But you are saying in the gas business now, that it...

MARTIN: It would be worth something, but it would be unlikely that in the event that they can't pass it through that it would be very substantial. And largely, as a practical matter, it does preclude ________.

GRUENING: Representative Parr?

PARR: Were you talking about the same thing that I've heard discussed in ___________.

QUESTION: (Indiscernible)

BONESS: The Court of Appeals sent its act to the FPC to reconsider that. Said that the FPC hadn't looked at certain factors. And then they reconsidered it and decided that it was no longer allowed.

GRUENING: Representative Meekins?

MEEKINS: Commissioner, I don't know if Joe meant this, but from what I got out of what Joe asked you and what you said before -- right now, because of the cold weather and the gas shortages, there's is a lot of talk of -- and I don't think they have done it yet -- but there is a lot of talk of even violating the contracts that are already legally made. And some people have paid premium prices for gas and their users are being supplied. In other areas the distributers have not paid those prices and therefore do not have gas available. But in order for sort of an equity where everybody has gas, there's sort of a movement to take it away from where it is already contracted to and distribute it to where it is needed. So that is just this situation now, and if we can expect, I think, in years to come, still to be those kinds of problems, I think if you extend that logic out, if they do that, set that precedent -- and then, as you indicated, it is a very tenuous and insecure situation to say, "Well, you are using our gas and we are going to take it back." And regardless of contractual provisions or anything we may think we have legally, I think those might be overridden. If we try to take our gas back at some future date when it is already sort of committed or at least needed in a certain area, I think it would be, just as a practical matter, it might not...

MARTIN: I can't resist a really obnoxious pun -- that the climate for what the State wants to do is very bad.

GRUENING: Representative Cotten?

COTTEN: Well, just on that point, I heard on the radio that they are asking the President to declare a national disaster area. So under that, if he does declare it, then they can ________ it I suppose something like that would have to happen before they could ever do it.

MARTIN: I don't think that is the necessary prerequisite but that is the kind of situation we'd have to be in.

GRUENING: Is it possible, Commissioner, that these companies that have these contracts -- the three contracts in question -- as soon as we approve this contract, turn around and sell that gas to another company? There is no prohibition in the contract is there, any of them, to prohibit that, is there?

MARTIN: They are under curtailment which would act as an effective prohibition against that.

GRUENING: I don't understand.

BONESS: Curtailment is where the pipeline company doesn't have enough gas to meet all the contractual obligations that have already occurred. When you hear that gas is being cut off at factories and people are getting laid off, that is the result of curtailment. There is a priority category set up in the FPC which involves a section of four categories.

GRUENING: Well what... Maybe you are getting to that, but my question really is, can't... I mean, the FPC would say they couldn't sell their gas?

BONESS: If your're a pipeline under curtailment then you can't sell gas to a new customer until you've supplied all your old customers. Which means, effectively, that this gas, the amount we are selling, isn't going to allow anybody to come out of curtailment.

GRUENING: You are assuming that these companies all have pipelines under curtailment?

BONESS: They do.

GRUENING: Then there's no way that the FPC would approve -- first of all, it wouldn't have to approve any sale if they want to make one tomorrow, for example?

RESPONSE: (Indiscernible)

GRUENING: Mr. Hayes?

HAYES: Are we going to -- are we just asking him questions from random? I don't see any particular line. Before he leaves I want to ask him a question.

GRUENING: Please, if you have any questions of Commissioner Martin, ask them now. I wanted to get into some of the technical aspects later. I don't want to go too late tonight, but as long as you're... Why don't you ask your questions?

CHATTERTON: I want to stay a little bit on the subject that we're just about to take off on, with a question if I may. That is referring back to (quote-unquote) the front end money and exploration costs, interests cost and __________ __________ going to the rate base, and that having, FPC having seen the __________ before they change their mind. Now there is a case in point on the Arctic Slope. What is the situation... I will put it this way, I'll give you the lead anyway, and you tell me where I have been told wrong. I have been told that there is one -- because it was indirect -- one front end payment, if you like, or a loan I guess is a better term, made by Columbia Gas that still is valid. Is that correct?

RESPONSE: Yes.

CHATTERTON: That means that Columbia Gas now has the right to 52% of 7/8 of that gas, is that right?

BONESS: I can't verify that. That sounds much larger than it is.

CHATTERTON: That is my recollection... (indiscernible)

BONESS: I'd have to check that but that sounds...

CHATTERTON: _______________ is still legal, whatever amount it is. It survived all this. I'm through with the question on those points. I've got three more on different subjects.

GRUENING: Okay. We will be shifting here... Senator Hayes?

HAYES: Inasmuch as I think maybe one of the three is going to be what I'm going to ask, I will defer to Chatterton to ask his three questions.

CHATTERTON: I bet it will not be one of the questions. First of all, I have read the contracts, Commissioner Guy, and I think considerable other people have read it, and I am getting a little bit of difference of opinion on this one particular subject, and I would like clarification for it. Let's say that we have gotten all through this mish-mash procedure, the all-Alaska pipeline is approved and these gas sales contracts are approved, and everything else. So let's say it is January 1, 1978 and everything has been taken care of back in Washington -- Do we have any right under this contract to terminate or back out of it? Is there any clause in the contract which permits us from then on til the end of 20 years to back out of it? Let's say we don't want to do business with them. Is there anyway we can do that?

ANSWER: (Indiscernible)

CHATTERTON: The next question that I have, real quickly, is that as I remember, and I couldn't spot it as I ran through here, but there is a little bit of dialogue on whether or not the FPC will include in the rate base the cost of cleaning the gas for transmission. Could you refresh my memory on that. What exposure do we have under that situation, and if there is cost that cannot be passed on because the FPC will not include it in the rate base?

BONESS: If it is a cost which we would not have borne had we taken in value, then our purchasers are obligated to bear that cost, even if the FPC will not allow them to put it in their rate base.

CHATTERTON: Thank you.

MARTIN: Let me just say that this term is one of probably five or six in the contract that were absolutely most hotly negotiated.

CHATTERTON: I'm sure of it. The last question, and I here again apologize, but it sticks in my mind that some while back where Statute 30.05 used to read anyway, that the State to, by law, to sell any hydrocarbons...(indiscernible) Is that still factual?

MARTIN: No sir. The royalty statute specifically provides a procedure by selling by negotiation, and quite frankly, when the legislature appropriated $50,000 last year to negotiate, we were pretty sure they meant negotiate.

CHATTERTON: Okay. Alright. So we don't have to ever worry about it?

BONESS: Our interpretation of the word "negotiate" was to negotiate.

CHATTERTON: That's all the questions I have.

GRUENING: Do you have any questions? Representative Hayes?

HAYES: We're talking about -- the subject before us is the contract to sell 1/8 of our royalty gas. And going along with that we are talking about what is tied in with that is selection of a gas line route. And the public is generally projecting that such and such a pipeline route is ______. We could be under construction by 1978-80-85, whatever, but sometime in the near future. And the thing that I would like to get clear in my own mind before I can really get into it -- you know, I have to clear that up before I can get to the merits of the contract -- is, has the State determined beyond a reasonable doubt that it is in the State's best interests to sell our royalty gas or allow the other 7/8 to flow south, in consideration of the other resources?

MARTIN: Do you mean as opposed to preventing the flowing somehow?

HAYES: Yes.

MARTIN: I think the answer to that might -- I think later this evening Mr. Gilbreth probably will touch on that -- basically the answer is a combination of things. But our powers to prevent it from flowing are not complete. In fact, maybe saying it the other way, they're limited. The conservation statute, which will certainly be a controlling factor in this situation, it will control possibly and probably over our desire to do other things. It is a fairly definitive statute and it will be a controlling statute. That would certainly enable us to do that, if it is consistent with the purposes of the conservation statute and the way that those statutes have been interpreted by legal cases. Other than that, we effectively, have sold the gas pursuant to the leases that we held, and the owners of that gas have certain rights with respect to it, including the right to attempt to build a pipeline to move it. And our rights to negate that contract, or say that we don't want it moved now, are limited by that prior commitment that we made. So to some extent, the State's determination is limited and within those constraints, yes, we think that this is the best approach.

HAYES: Well, I have been under the impression, perhaps erroneously, that the State had absolute power to determine when gas would flow, so that if we needed it _______, reinjection in that field or adjacent fields...

MARTIN: There is really a difference, Representative Hayes, between absolute power to determine it and the second statement you made about reinjecting it in the field, which really alludes to the conservation statute. The statutes have been upheld, in juristictions, have been upheld for the purpose of achieving the maximum efficient production of a very important resource, oil and gas. And the courts have allowed states to have very important powers over the production of oil and gas where it can be shown that your public objective is to ensure that you don't waste oil and gas. That you produce it in a way that maximizes the amount you produce. But where it simply -- an arbitrary judgement by the State for some other purpose, then the State's powers start being limited fairly drastically and you run into what is called interstate commerce problems. So absolute powers are pretty much intrastate.

HAYES: Well, yes. We probably would not be in a position to determine, absolutely, for a number of years. Is that right?

MARTIN: Well, this is one of the things that Mr. Gilbreth is going to talk about but let me say that the determinations under the conservation statute, which is our greatest extension of power _______________, are based now on modeling, computer modeling, and we believe we will make additional decisions based on that, will be based subsequently on the early production history of the field, which will give us a better idea. And it will be adjusted from time to time during the life of the field as appropriate, based on what is happening with the reservoir.

GRUENING: Representative Meekins?

MEEKINS: On the other side of that, perhaps this is better asked of Mr. Gilbreth, but at the same time that in order to maximize the recovery of the reserve by reinjection... ____________ want to reinject the gas in order to

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maximize efficiency in production, and at the same time, there is some sort of a constraint, some sort of limit as to how long you can reinject, also, is there not?

MARTIN: In some cases there is. I'll let Mr. Gilbreth give more details to this but I think it is a safe conclusion now that in the case of this field we have determined that there is no practical limit to how long you could reinject, so at least the problem is not that there is some time at which you are doing damage to the reservoir by reinjecting.

MEEKINS: In other words, if there is a delay of some sort, is what I am getting at, in the building of a gas pipeline, we're not...

MARTIN: We are not doing that type of damage, at least...

GRUENING: Before Commissioner Martin leaves, I wanted to ask -- on terms of the comparative analysis and the merits of the three routes, would we be safe to assume that the administration is relying on all the information contained in the comparative analysis of November 76, that was prepared -- it was kind of a summary of November 1976 by the Pipeline Task Force.

MARTIN: I think that is right.

GRUENING: So all the information in that document is... In other words, that contains all the information that you relied upon, that there is no outside input...

MARTIN: I'm not sure that -- that is a garden path statement, Clark. I think that's true. Fred?

BONESS: I think that's a summary of all the information. We've relied upon all the evidence that the FPC... The various kinds of assessments, environmental considerations. We ran into 26 boxes of material stored over at the Historical Library.

MARTIN: The decision ultimately made by the Governor and the recommendation of the Task Force was a balance of a lot of factors and I'm not sure how you indicate how each individual made his recommendation or so on. You can regard the summary as the total -- it is certainly not the total background that the Governor had, but it is intended to be a summary of that information and I think it can be relied on for that purpose.

GRUENING: Well, in terms of the finding that the highest net economic benefit to the State was El Paso, is that all the information that you need consider on that issue, that you know of, is contained in that document?

MARTIN: I'm going to defer on the question for this reason, Mr. Chairman. Both Bob LeResche, Director of the Division of Policy and Planning and Av Gross, who is Chairman of the Pipeline Task Force, and Sterling Gallagher are going to be at the hearings on Monday to talk about just that subject. And I'm not certain the answer to that is absolutely yes. Generally speaking, it is yes. That represents the summary of the information we used.

GRUENING: These gentlemen might supplement that?

MARTIN: I'm sure they will be able to tell you if there is something that they would want to add or that they thought was particularly persuasive.

GRUENING: But you don't know of anything beyond that?

MARTIN: No. And there have been assertions of items like, for instance, the tanker subsidy idea, or something. But in the case of that one, for instance, the decision and the analysis was made absent that. In other words, that wasn't figured in the decision and then left out of the summary. It would have been an additional backup and included. It was sort of a hypothetical additional case, that wasn't put in the summary. We thought that -- in other words, we concluded that the summary justified the result even without that thing included.

CHATTERTON: Mr. Chairman, I'd like to help the Commissioner out, for his information. There was an addendum to the November 1976 report. I have it here at hand. I believe it came out quite some time after the decision was made to have the... (indiscernible)

MARTIN: It wasn't taken into consideration at the time, but when I speak of the document, I include that being in it. The Governor made it clear that our work on the thing is ongoing. For instance, we take the letter of transmittal from Attorney General Gross and both the Governor's speech and my statements have made it clear that the way our royalty statute works, you have to make certain decisions are locked in time. One would wonder what would be the political climate in the state if these contracts had not been put before the legislature on the first day and we were taking the line that you're essentially taking -- that we are just not sure, and we just want to keep looking at it for a little while. I suspect that we...

GRUENING: I don't think anyone has taken a position. We have a duty to look at the contracts. The appropriation of $50,000 did not require us to approve the contracts. It only required negotiations and now that they are here we

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look at the results of the negotiations. I don't think anyone on this committee has taken a position.

MARTIN: I'm not saying that. I don't mean to. What I am saying is that the way that the royalty statute works, it requires that at a certain point in time decisions be made and that then they be advanced through the process so that they can arrive on the legislative doorstep for approval. And it would be obviously desireable for us to be able to continue to remain flexible but we felt we had to offer the alternative. So it is a way of really addressing that question. But if additional information comes along, or for instance, additional actions like the Administrative Audit Judge's decision, we are going to consider those things and try to judge our actions pursuant to them.

GRUENING: Representative Parr?

PARR: A very simple question. Is it correct that the 7/8 of the non-royalty gas has not yet been committed? Or has it been committed ____________?

MARTIN: There were attempts to commit it through advance sales contracts which were then negated by the decision that we discussed earlier in the evening.

PARR: I thought you said that you couldn't make them pay for it in advance. But you didn't say you couldn't commit it advance?

MARTIN: That was one of the terms of those advance contracts, so the contracts failed by virtue of that term being included.

PARR: It is true that there ________________ against crude oil which is transferred (indiscernible)?

MARTIN: (Indiscernible)

PARR: ______________ as of now the 7/8, which belongs to the producers, is not committed to any distribution companies like ________ Chemical, Southern and so forth? That is not committed to anybody at this point?

MARTIN: With the exception of the Columbia contract that he...

PARR: _______... that is 50... (indiscernible) (several people speaking at once)

MARTIN: Columbia, El Paso, and Tenneco are always among the top five of the gas companies.

GRUENING: Despite the fact that the contracts were negotiated, it still is a statutory requirement, isn't it, or did we find that there is a surplus before the sale is made? Is that correct?

MARTIN: Yes. We attempted to deal with the surplus question. I think we have dealt with it, in the terms of the contract. There are two ways to approach it. It would take a long time to talk about the surplus issue. I won't do that here. One way to do it is to attempt to predict what the surplus would be and then try to match what you sell against what you predict and then see if everyone agrees with your prediction. What we've done is simply provided flat out that we have a right to take back whatever we need. So we have, essentially, a legal surplus. We have a surplus which is protected by the terms of the contract rather than trying to identify it by some quantity.

GRUENING: There are no studies to your knowledge? There are studies?

MARTIN: Yes. We are going to be prepared to advance and have advanced at prior hearings before legislative committees, our work on surplus gas and what it consists of basically is projections of various low, medium and high growth scenarios that indicate what might happen. Because ultimately all surplus is, is whatever you believe will happen in the State, minus whatever we'll produce. And if you believe we will build a petrochemical plant then the surplus is one thing, if you don't, it is another.

GRUENING: Is that a completed study or one to be done?

MARTIN: It is complete. It is completed and it will be ready to be advanced. But it is one that changes constantly, Mr. Chairman, because you learn more about what the reliability of your predictions are. But it is completed and we will be prepared to advance it.

GRUENING: Is it in a form that we could look at?

MARTIN: We will submit it to the committee.

GRUENING: Okay. I think we would all like to look at that. Representative Chatterton?

CHATTERTON: Mr. Chairman, Mr. Commissioner, on the subject of surplus I have this question. First let me read from the transcript of the Royalty Oil and Gas Advisory Board Hearing. It says, "at that time you define surplus" the word surplus, or the Board did, "as the volume of gas available in excess of residential and commercial needs of the state." Now, my question is -- when we speak of surplus in the context of our contract here, is it still by that definition?

MARTIN: I would have to look at the context of the remarks, but I don't I need to to answer your question. In the terms of the contract, if this provision is approved, we have a right to take gas back for any purpose whatever. So the surplus is defined in the broadest conceivable terms. There is only one thing that is not included. And I think I can say this very thoroughly. The onl, thing that is not an instate use is liquefaction for export. That is the only thing that is not an instate use. So liquefaction even for transporting around the Alaska coast to another community is instate use. Anything else is instate use. So a surplus would only be that which is left over after we call it back.

Let me give you the example I gave Representative Meekins the other day in terms of what you can do with this contract. If everything is locked up, and the trans-Alaska pipelines are approved and every term in this contract is executed and we're in great shape. And that happens in the middle of 1978, and we are expecting that the first gas will flow on the first day of 1982. Using our two year notice provision, we can discover that we have a use -- now we have to have a use, we can't make one up -- but if we have a use that would be available for every cubic foot of our royalty gas on the first day that the pipeline would flow, we simply have to give two years of notice to the buyers and they would never take a cubic foot under this contract. So that the contract enables us to take every single cubic foot back with that notice and they would never take a cubic foot. On the other hand, if we never do develop the instate uses, then they would be buying pretty substantial amounts of gas simply because we don't really need what we sometimes projected.

CHATTERTON: So coming full around why our election to terminate...(end of tape)

MARTIN: ...In this case, what is surplus under this contract is determined purely by the will of the State.

CHATTERTON: And also instate use, is only determined by the will of the State?

MARTIN: By the will of the State. Let me say one quick thing about the one and two year notice provisions. The two year notice provision is the one to focus on because it is the one that gives us the total right to take back everything. We simply rewrite the contract and take it back. The one year notice provision was written because we felt that there might be some circumstances were we'd want to act on a shorter time frame. Most people conclude that one year or two years is adequate lead time for any large scale project that would come forward. We will try to demonstrate this in the hearings but one year notice periods built on this schedule, this 25%, 50%, 75%, that curve that is drawn by that 25%, 50%, 75% thing each five years, roughly corresponds in a kind of a stair step fashion to what we would call the moderate growth expectation. It makes certain assumptions in regard to what might happen, so what we have done there is just provided a secondary take back term that roughly follows it. But it is the two year term that is really important.

CHATTERTON: Okay. This is vitally important to me Guy, and I'm serious gentlemen, if I could just hold you up for a minute. You can almost make or br ak me as to how I feel about this contract. So it is imp rtant to me, personally. Do I hear you right, that in effect, we only are giving a two year contract that I can give some type of a notice and two years after the giving of that notice, I can stop the flow of gas through that pipeline and convert it to an existing instate use. And you are telling me that I am sole judge of what the instate use is?

MARTIN: Not you, Representative Chatterton. That's is right. The criteria for that must be that the use exists.

CHATTERTON: If I suddenly decide, then, that I want to use that gas to maximize the recovery of black oil from reservoir X, to geographically remove it from Prudhoe Bay, that is an instate use by the definition that you are saying, and I can just quit selling gas?

MARTIN: That's right.

GRUENING: Any more questions of Commissioner Martin? Representative Meekins?

MEEKINS: Commissioner, just on the exact line of questioning, have you not pointed out that even though that's what's in the contract, there are two considerations, one being the possibility of some sort of emergency gas problem, veto of that provision if there was something going on that if we were trying to take back a large portion of our gas...

MARTIN: Yes, I doubt if it is possible. Assuming that this provision is approved and we begin to operate pursuant to it. I doubt if we can get anything that's more reliable.

MEEKINS: I understand that, but I don't understand...

MARTIN: There are imponderable problems. And you can't foreclose the possibility of a simple national emergency.

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GRUENING: Representative Parr?

PARR: The term used in the contracts, meeting the intrastate industrial needs of the State of Alaska (indiscernible)

GRUENING: Are there any more questions of Commissioner Martin? I want to thank you for showing up tonight and I think we are going to have a lot more questions of you. This is just touching the surface really.

MARTIN: I appreciate it. Let me say that I think that this kind of format is exactly the way to do it. Looking at two offers, I'm perfectly willing to come in any amount of time it takes to have meetings like this, largely informal, and just do it because these are very serious and important questions. The second thing is that I have determined in talking to a number of legislators that there are a lot of misconceptions, people have firm and vivid beliefs that the contract does something that - we just want to try to show you that it doesn't or that it's different. I've had some very successful conversations with some of the people at this table and others and I'm perfectly willing to spend any amount of personal time just, policy aside, explaining what we think the thing does. Don't hesitate to call me or have other collegues call me or just come over and talk for a while. Because it has really been useful to do it and we don't want anyone to vote based on an assumption or a...

GRUENING: Representative Parr?

PARR: Mr. Chairman, I appreciate Mr. Martin's willingness to do this, but I want to say one thing that I said to somebody who came in and told me ________. And that is a lot of these questions should be raised and answered on record at a public hearing.

GRUENING: I agree fully.

MARTIN: I would not hesitate to answer the same questions at a public hearing.

GRUENING: Thank you and I'd like to call a short recess and we will carry on with the remaining later.

(BREAK)

GRUENING: We will come to order here. Mr. Gilbreth has offered to give us a real short course in some of the technical aspects of oil and gas, particularly natural gas and maybe that will help us direct questions.

GILBRETH: Mr. Chairman, I'm sure most of these people here are not too familiar with what happens in an oil and gas field and oil and gas reservoirs. I will take just a few minutes and start in on some of the basics and work up on it.

Of course a lot of you have heard that we have a big field of crude oil. It is a large field... (end of tape)

We have other pays at Prudhoe also. The main pay that you all hear about, the big pay, is the one that contains 9+ billion barrels. That occurs around 8,000 or 9,000 feet. Then we have a shallower series of sand stones, Nika Park River Pay. They are characterized by high productive wells. They flow real easily to start with but expected to drop off very rapidly. Those go to the west of the main portion of the Prudhoe Bay field and could extend as far as 20 or 30 miles out to the west.

Lying underneath the main pay vents to the east side, we have the Lisbourn Pool. And the Lisbourn had been tested in many, many wells, but not found to be commercially productive in very many. It covers a large area and if it should ultimately be economic and give up enough oil in commercial form, it could be a sizeable field, but at this stage it doesn't look like it is a sizeable field. So what we are generally talking about is the main Prudhoe reservoir, the big reservoir. And the operators are trying to unitize the reservoir now so that, in effect, the entire reservoir will be operated by two operators on behalf of everybody else. They would operate the whole field so that you would get advantage of the economies of operation, you don't have competitive forces operating and ________. Now the operators have submitted preliminary draft agreements to us and we have gone over them and they have proposed a unit outline of what area this unit is to cover. The outline has not been or the boundary around the unit has not been decided yet. There are some wells that still fall within the confidential status under our two year confidential statute and the operators themselves are not even trading information on these. So we find ourselves in a sort of a touchy position where we can talk to one operator and we can't talk to another operator across the table because they don't want to exchange information.

So we don't know at this stage just exactly what the unit area is going to be around this unit. It will be decided sometime in the next couple, three months probably. But the gas contract had been written so that it will correspond to that area, whatever it finally turns out to be. So we're talking about gas that will fall under the ultimate unit area for the main reservoir only. I wanted to point that out because in later testimony we will tell you that there are other reserves that are not committed to this contract and these are the reserves in some of the sands up above, reserves in other pays that are out away from the main reservoir.

In the Prudhoe Bay field, of course, we have oil and we have gas on top, and then water on the bottom. Within the oil zone, very near the bottom of the oil zone, there is a big, very heavy, oil accumulation. We loosely refer to it as a tar matt sometimes. And this can be 60 to 80 to 100 feet thick. It is fairly impervious. Now to produce oil out of the well, you have to have energy or pressure to force it into the well bore and up to the surface. And in Prudhoe Bay, because it is buried under several thousand feet of sediments, they have a weight or pressure forcing down on the oil. The reservoirs originally under a certain pressure. And the free gas then, or the gas cap which is free gas, is also under that pressure and this is around 4500 pounds, depending upon where you are in the reservoir. The oil itself, also has gas in solution within. Just like you popped the cap off a Cocoa Cola and it bubbles. The carbon dioxide comes out of solution. And we have gas in solution at Prudhoe the same way. We have free gas, solution gas, and then we have oil. And under that we have a salt water area and this underlies nearly all oil fields. I don't know of one anywhere in the world that doesn't have salt water at the base of it. The water reservoir or aquavoir if you please, as a lot of people call it, extends out over many, many miles and we have mapped it as far away as 65 miles from Prudhoe Bay.

Now to get the energy to force the oil up to the surface we have the pressure from the gas cap, the original pressure in the oil zone, and the water zone is originally under the same pressure. So something has to push fluids to the well bore, and the ease with which the fluid goes through the formation is a technical term we call permeability. And the higher the permeability, the easier it will go over to the producing well. The lower it is or the tighter it is, the greater resistance it is, the less likely you are to get good float. You'll have a horizontal characteristic in your permeability and a vertical characteristic. Obviously, from gravity forces, fluids and pressures can act down, they can also act horizontal. And our characteristics at Prudhoe are such that we have very good vertical permeability characteristics and particularly so on the gas. So that the reservoir simulation work that we have done leads us to believe that the gravity drainage system or the effectiveness to (cough) will be very effective.

And just some ball park figures -- Mr. Chairman, let me point out that any figures I throw out here tonight about recoveries and rates and so forth, are subject to later correction and refinement by Hoyle Hamilton, the Director of the Division of Oil and Gas. He is in Denver now doing simulation work to try to bring our figures up to date based on the latest plan the operators have told us about. Some of our earlier work, I'm sure, will be changed somewhat but not significantly. But we are trying to get a refined position now to try to determine what the production rates in Prudhoe are likely to be. Up until this time, we in the Department have taken a very firm stand in not committing to any production rate because we have not had enough information to tell what would be a good rate. We have had some ballpark figures based on early data but we didn't know what the operators were going to do. Now, along with the unit, the operator is required to submit a plan of operation, what he plans to do in the way of drilling additional wells, and putting in projects or increased oil recovery pools. So the operators have filed information with us, we have gone back and requested more information on a couple of occasions. We have had several meetings. We have had meetings with our engineers, with their engineers, and I will say this, that the operators have very graciously, if you please, given us proprietary data to help us in our analysis. We now have enough information that we can put into the computer and get some sort of a reasonable prediction on what probably will happen with what the operators plan.

Because of these characteristics that I mentioned, the permeability characteristics, the recovery that we anticipate based on what we see right now, without anything, would be probably in the order of 30% to 32% to 33% of the original oil that's in the reservoir. Now to give you an idea as to how this might compare in the Cook Inlet field, some of those which do not have gas caps, do not have ________ water drive, we are looking at recoveries in the order of 14% to 16% to 18%. So without doing anything at Prudhoe Bay, we will have a fairly efficient recovery mechanism. Now this recovery is achieved by the gas pressing down or working on the oil, if you please, furnishing pressure energy there and also by the water furnishing pressure energy on the bottom side in an upward direction. Now with the good vertical communication we have, the gas cap looks like it will do an excellent job. But with the permeability that we have and the tar matt that we have, or the heavy oil zones that we have, there is quite a bit of question about how effective the existing water drive will be and how much the operators are going to have to supplement this water drive. Therein is where most of the discussions are being held now days.

Just some ballpark figures -- if we take the reservoir and produce it just as it is, we'd have in the order of 30%, 32%, 34% recovery. If the operators during the life of the field, would return all the water that is produced back into the reservoir, we could probably increase that by 2%. If the operators put in an efficient secondary recovery program, they might increase the oil recovery from 5% to 7%. So we could get up somewhere from 37% to 39% to 43% ultimate recovery out of the reservoir depending upon how its ultimately produced.

Now our latest runs, they are still analyzing them, and I talked to Mr. Hamilton by phone to see if I could get any advance information, and up to this point the only thing he can tell me is that it doesn't look like, on first analysis of what he got out, that there would be any advantage to requiring gas to be returned to the reservoir indefinitely. There is no increase recovery as a result of this. But there are other variables from there back. So that is all I can tell you about that one thing and then he will have to tell you how some of these variations work.

The water injection program could be small or it could be very large. We anticipate that it would require the injection of a very large volume of water over the life of the field. And the water, in all probability, would have to be obtained from the Arctic Ocean to furnish a volume of this kind. Tests have been run. It looks like the water is compatible with the oil at Prudhoe Bay.

The type of project that would be required would be, as you can imagine, the largest in the world. And it is not a cheap project. I haven't talked to the operators, I don't know what kind of cost they'd be looking at but I would say it would easily exceed a billion dollars. It is a large project. Something that can't be done overnight. Now the scale and direction such a project would take, would depend on how the reservoir performs under actual production operations. And all we can do right now is look at the computer output and it says, well, weighing one factor against another, this looks like it is probably the best way to go right now. But then as we get actual data from the field and feed into the program and start refining it and try to line the two up, we may get slightly different answers. So it is going to take, probably, two to three years of production operations in the field, actual operations, before you can, with any degree of accuracy, define a water injection program for that field. You can have some ideas and you can make estimates, but when you start spending money of that type, you've got to know pretty well what kind of ______. So to get water in the field, we are looking at something that is going to take a couple of years to figure out what kind of a program we really need. And then it is going to take two or three years to design it, finance it, install it and put it into operation. So from the standpoint of water injection, we're probably looking at something four, five or six years down the road before an effective water injection program can be installed in the field. We are incorporating timing of this type into the computer program, in terms of ultimate oil recovery, to see what the effects are of delaying water injection. What could we do if we started now. And what could we do with large volumes, small volumes, and intermediate volumes, and so forth.

So about the most I could tell you in terms of rates are that the operators are planning to start out, and in the not too distant future, get up the rates in the order of 1.6 million barrels of oil a day. These, with the gas production in the field -- there would be gas available to sell as much as two billion cubic feet a day. Now we don't have a gas line. We don't have a gas line authorized. And we don't have facilities in the field to process the gas to get it in to _____. So it is going to take quite some time and as Commissioner Martin said a while ago, we are looking at least to 1982, we think, before a line could even be constructed to take the gas. So during this interim then, we have a tremendous volume of gas that is going to be produced on a daily basis that something has to be done with.

So the operators have des_gned an injection plant or program to return this gas to the reservoir during the interim period, until such time as they are permitted to sell gas from the reservoir. Let me reiterate again a point that Commissioner Martin made. Under AS 31, we have a waste prevention statute which says that you can't waste oil or gas in the state, and the Division of Oil and Gas Conservation has authority, under that statute, to regulate the flow of oil or gas or both for conservation purposes to achieve maximum recovery. Nothing in this contract that we know of, and we have been very particular to see that nothing _________, would interfere with that or in any way relinquish any of the State's authority to make that determination. That determination will be made exclusively under AS 31, and regardless of what this contract says, the field will be operated at the MER or most efficient rate of production. Now this contract is set up to sell any gas that is produced and sold. If the Conservation Committee permits them to produce at such rates that they could sell gas, then whatever that rate is, then we are committed that volume. If they could only sell 100 mcf a day, then that's what we sell under this contract. It is only what can be produced under this section at the MER.

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GRUENING: If the committee members have any questions that they don't want to slip by, please ask them. You mentioned 1982, as the date the gas pipeline would be completed or started or what?

GILBRETH: No. That is about the earliest that we could expect any deliveries from a gas pipeline. If you go into all the approvals that are necessary, the lead times to order, the contracts that the companies have to go through, the right of ways, the clearing, the studies, and so forth, about the earliest that we can see would be 1982, to have one completed to take gas.

GRUENING: Representative Chatterton?

CHATTERTON: Thank you Mr. Chairman. So we all understand, here is the same thing. If you say that by the earliest that you can see we can start selling gas in 1982, that is based upon how long a construction period? I guess what I am asking is, how long prior to 1982 would a private enterprise have to make an economic determination and put cash on the line to start the procedure for the permits and so forth and so on in the ultimate construction of the line? How far do we back down...?

GILBRETH: I don't know just how the overall timing would fit in on that. Some onversations that I have had would indicate that -- and here Mr. Chairman, you will have to talk to maybe El P o or someone else on that but -- I am led to believe if the approval finally comes from the federal nment late this next fall or early winter, that t ies that they could do anything would be a lit he following summer. Now, I am assuming that the ge ng to be able to arrange financing or any ntil approval is given. And I don't know what th e , between that point and the time they actual r construction. You know, from the standpoint tt g financing and so forth. But if you consi om reasonable time in there considering the seaso ffects and logistics and everything else, you will ming into pretty close to 1982. Any reasonable set su ions you make regarding financing and ord and starting construction and then construction ti

GRUENING: Re ntative Hayes?

HAYES: I understood you correctly, it is going to take a l e while to determine what kind of a commitment can made for the sale of gas?

GILBRETH: s, sir.

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HAYES: What I don't understand is -- how can a prospective owner and constructor of a gasline get financing to start construction when he doesn't know until the time he knows what he is going to be able to get? Nobody is going to loan him the money.

GILBRETH: That is true. This is a real problem in the area. What we hope will come out of this, we hope that there will be some clear cut information what will say to us and, of course, we are going to have hearings on this and make a determination but, we are hoping that something can come out that we can say, alright, based on the best information we have -- and I am going to use two billion a day as purely an example, I don't want to write that in concrete -- but let's just say that we hope that our information will show us that if you sell 1.75 to 2.25 billion cubic feet a day, you are not really going much difference in the reservoir, at least within the experimental error or engineering error that we can see in our model, in our data, and our figures. And we will be in a position to say to the operator, if they so request, if they want to produce enough to sell 2 billion a day, say, alright, we will give you a temporary authority to produce for two years, or three years, depending receipt of reservoir data to confirm it. And the first time that we get reservoir data that says that is too high, we are going to have to cut it back. And thir is going to make it rough on financing because nobody can guarantee that we are going to let them produce two billion or three billion or four billion cubic feet a day for the 15 or 20 or whatever years that they need to finance the loan.

GRUENINC: Representative Parr? And then Mr. Meekins.

PARR: (Indiscernible) ...Well, what I am leading up to Mr. Chairman, is in the contract __________ maximum use would be committed for, one trillion, 300 billion. Was that... (indiscernible)

GILBRETH: No. It is. What we are committing through all three contracts is 2.6 million. And the one you happen to be looking at is one that -- that company gets 50% of our royalty gas, so they get the maximum of 1.3 billion.

PARR: Okay, that's ... So we are actually committing everything we would reasonably expect to be produced according to (indiscernible)

GILBRETH: No, this is from the 1/8. This is not the...

PARR: I understand that. I'm sorry I ______________.

GILBRETH: Okay. But the 2 billion a day is 8/8 of the gas. It is not our 1/8.

PARR: No. It is 250 million of ours.

GILBRETH: Yes. And there is also a time limit on it that's 1.6 trillion over a certain number of years. It is not the whole life of the reservoir.

MEEKINS: I have a question back on the geology. The reason it is important, I understand, is because these questions are yet to be resolved as to what kind of recovery you are going to get and how much gas we are going to need to reinject. As I understand it you have a water drive but you also have gas drive. Say that the horizontal and the vertical permeability is good, so what you are really concerned about is the water drive is really a function then of the ____________ of the oil or something like that?

GILBRETH: Yes. The permeability of the reservoir and the __________ of the oil. There are a bunch of factors that go into it, but those are two of them.

MEEKINS: The question is really how much the tar matt going to impede the water drive, right? And if it impedes it a great deal then we have to reinject a lot more water in order...

GILBRETH: Our computer runs lead us to believe that the reservoir is rate sensitive, by that you can very ultimate recovery depending upon the rate that you take it out. But they do not indicate to us that it is very rate sensitive on gas withdrawals. It is more sensitive to the amount of water to be injected, to determine the maximum efficient rate of production. Here again, Mr. Hamilton will have to give you more detail later, but we think that the rate of gas production is not nearly as critical on the ultimate recovery as the rate of water injection. And that the rate of water injection is what is going to really ultimately determine the rate of production ______. I am talking about the rate of oil production.

Now, I didn't talk about the oil and the gas as it comes out. As our oil and gas comes to the surface, of course the gas comes out of solution with the oil when you release the pressure, you get it on the surface and you have vessels there to release the pressure and the gas is taken off the top and the oil goes on the bottom. The gas that is taken off, it has a lot of other hydrocarbons in it, referred to in many cases as liquids. These gases can go through other types of containers which condensates or liquids are settled out and called condensates. These are generally fairly stable and in most cases will be put right back in with the crude stream right there and go on down and be sold as crude oil. The remaining gas that comes off after the condensates drop out, still have liquids in them, and they are liquids that you have heard of -- propane, butane, penthane, ethane, hexane -- and the composition will depend on the separation characteristics as you go through each of these steps down the way. Initially, the plans are -- and I didn't tell you that Prudhoe Bay gas has about 10% or 12% carbon dioxide in solution with it, it is there, and it is an impurity, and it can't be burned, it is a pain in the neck. It has to be removed before it gets to your kitchen for fuel. But initially, until a pipeline and other cleaning systems are installed, the plans of the operators are to go through the separation stages, take out the impurities, and anything that is not stable and then just recompress the gases and reinject them right back down into the reservoir. This would include what we call natural gas liquids or ngl. The condensates will be taken off and sold as crude oil during the interim period. And anything that can't be dropped out.

Now, once a pipeline goes in, however, it is a little different story. The condensates will still be taken out, but there will be some additional equipment installed and as of this morning the operators have not designed the equipment and not ordered it and not installed it. It is gas conditioning equipment to take care of the natural gas liquids, or to extract these liquids out of the gas stream. Their intent at this stage is to take out as much as they can that is stable enough to go down the crude line and meet pipeline specs, and then any of the other products that come out during the stabilization and cleaning process, where they take out the carbon dioxide and the water and so forth to make it of pipeline quality. Anything that can't go down the crude stream, at least initially until there is some market for it or some need or some way to use it, will be pumped back into the reservoir. It will go into the reservoir as a liquid and will obviously revaporize. It will go in under high pressure and will be there for ultimate recovery later. But at this stage there is not a plan to take all of those liquids out and try to send them down a third pipeline or try to do something else with them. They are unstable. It is not feasible to put a lot of gas down the oil line and it is not feasible to put too many of these down the gas line. It can be done, and under the right conditions, might well be done. But I just wanted to point this out to you that the plans right now are very indefinite on what to do. Some of the operators propose to have their purchaser extract these products. Some of the others do not.

In the contract before you, provision has been made that the State will reserve the right to take those out where-ever __________.

GRUENING: Mr. Parr?

PARR: Mr. Gilbreth, what is a gas cleaning plant? Now is that the first kind of thing you referred to where the condensates drop out or is that where you take out the liquids and the...

GILBRETH: This is where you would take out the liquid that won't fall out under just the ordinary means.

PARR: So you'd take out the liquids, the last one you were talking about?

GILBRETH: Yes.

PARR: I guess they are talking about the plant costing them a billion dollars in 1975 and in four to six years from the time of design and construction. And further than that, they can't even start the design until they know the characteristics of the pipeline. And further that the characteristics of the proposed Arctic, Alcan and El Paso pipelines were different. So that decision has to be made first before they can start designing the gasoline plant which is going to take them four to six years.

GILBRETH: That's right.

PARR: In general, this is a very general question because the circumstances may change it. Are the liquids as valuable as, less valuable than, more valuable than, the gas itself?

GILBRETH: It depends upon what you want?

PARR: You mentioned a lot of names a while ago. Like hexane. I've never even heard hexane. I'm not kidding.

GILBRETH: Your strain of liquids go all the way from aviation gas, automotive gas, butanes and propanes and on down to your oils and asphalts. You have got a whole ray and in some cases you can bury the recovery of them. But, generally, you get your gasolines and your napthas, and your diesels from the oil. You get your propanes and butanes from your gas.

PARR: The propanes and butanes then are a part of this natural gas liquid that you were talking about?

GILBRETH: Right.

PARR: Okay. Presumably these are valuable because the State retained the right to receive them. If they weren't worth a thing, we wouldn't want that right. I have somebody who is supposed to know something about this subject, which I don't, and who felt this contract was very deficient because it didn't refer to residue gas. If I understood him correctly, residue gas was the gas after the liquids were taken out, and that we should have been in the contract only agreeing to sell residue gas, still the one thousand btu. Only residue gas -- it is important is it not -- why...?

GILBRETH: Okay. Let me go back just a second if I may to our original lease and Fred may have to help me here, but our original lease, we sell the right to an operator to explore for, drill for, produce, sell, and market, oil and gas produced on the property. And as a consideration for that, he gives us a 1/8 royalty when it is produced at the surface and so forth. Now our rights are to take that at the wellhead on our lease. Which can mean the hole coming out of the ground. We are talking about gas sales here that are occuring through many millions and billions of dollars worth of equipment. There is a question -- well if we don't sell our royalty gas, it goes through the separation process and the condensates are knocked out, and it goes ultimately through the conditioning plant and then the tail gas, or the output of that plant is what would be going in to the pipeline, after those liquids are knocked out. Now, there is a long step between the wellhead and wherever that point is going to be. And we don't know at this stage, where it is going to be and the operators don't know. We have written the operators to please tell us and they say, we don't even know yet where the delivery point is going to be. Whether they will deliver it to us back at the wellhead or after it goes through one of these separation facilities. We want it where it is free to us. We don't want to have to pay anything. Now if we get it, ultimately, at the wellhead and we sell it to somebody as tail gas out here, we are going to have to pay for the processing going on through all these plants. So what we did here to insure that we didn't get stuck with some of that, was to say that we're going to reserve the liquids, wherever they are taken out. If they are taken out in the field, if they are taken out at Fairbanks, or if they are taken out at Valdez or if they are taken out in California, the State of Alaska wants to reserve those liquids. And the gas purchaser is going to pay the price of taking those liquids out wherever it is. That is something that we would have gotten had we not taken it in kind. If it is something that we would have had to pay for anyhow, then that is a different story. So what I am saying is, in essence, selling the tail gas, we are not calling it tail gas. We are selling the gas and reserving the right to take the liquids out of it. Am I confusing everybody?

GRUENING: Mr. Chatterton?

CHATTERTON: I am going to try to help him. Very simply, his contract -- we are going _______ energy out of our 1/8. Now I can promise you that. The contract is beautiful from that standpoint. As the liquids drop out, we get 1/8 of all the liquids that drop out, wherever they drop out. We get 1/8 of all the pretty ________ units that pass from the wellhead. And we don't have to pay to get it. The processing is going to be paid for by the summation of these three companies.

GRUENING: Yes. Maybe you can help the question -- get out what you are saying -- but I'm not too sure -- if there is no use that the State has, let's say, at the wellhead for... The likelihood, is it not, that these liquids will go with the gas, wherever the gas happens to go. And if there is some market along the way that the people that are purchasing it will probably try to sell it, which point, if I understand it, we could say we want to claim it in kind at that portion. But don't we have to pay for any costs that are incidental to that?

BONESS: First of all, there are two separate provisions in the contract which I have gotten a lot of questions back that apparently confuse people about what we did reserve. Article 9, Section 9 refers to propanes, butanes, ethanes and things like that.

Gas, as it moves through the pipeline, once it goes through all the cleaning processes and separating processes that Easy has explained, it comes out of that last plant, the cleaning plant and is put into the pipeline, it will still have some propanes, butanes, ethanes, maybe a few higher but not very much beyond that.

GRUENING: Most of it will be left behind?

BONESS: Most of it will have been left behind and will either be reinjected into the reservoir, put into the oil stream...

GILBRETH: But the basic plant we are talking about is going to take out most of this in the field.

GRUENING: The reason this is going to be done is because it is not practical to ship this in the gasline?

GILBRETH: No. There are certain specs in the pipeline -- the requirements of the pipeline itself -- to transport the gas down. You are limited on the type of liquids that you can have in it. Well, you've got dew point measurements to take water and impurities out, to keep it from freezing in the line. And if you don't take these other products out, every low place you go in, in real cold

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weather, why the liquids will drop out in low places. They are called the sludging of the fluid in the line and the gas and so forth. So the gas companies require that you put the gas into the line with a certain quality. And the gas conditioning plant that we are talking about that's going to take four or so years to construct, that plant will take out everything that is required to get it to pipeline quality. Most of these liquids that we are talking about will be taken out in that plant and the ones that are not stable enough to go down the oil line, if there is not a market for them, will be pumped back into the reservoir.

GRUENING: And the cost of this cleaning is borne by the people that are buying this gas, is that right?

BONESS: I would like to interject something here. Our lease says that if we take royalty in value, the lease is silent with respect to cleaning and dehydrating the gas, either oil or gas. But it says if we take royalty in kind, we agree to pay actual value or actual cost of cleaning and dehydrating the gas. There is some question as to first of all, whether that term can be in the lease at all. Whether it exceeds statutory authority of the Commissioner in terms of issuing the lease and even if it does, whether therefore it can bind us. There is also a question of what it means by actual cost. These were debated in the oil pricing case in Cook Inlet and that case was settled. We don't have a legal judgement on those. That question with respect to three of the people in the Cook Inlet case is still open. And we may get some litigation. We may get a court decision on what that means or not.

If we incur that cost solely as a result of taking in kind, and would not have incurred it had we taken in value, then our purchasers would pick up that cost. If it turns out that we must pay that cost, even if we take in value, the lease is silent in that matter, then our purchasers are not obliged to pay that cost. And the reason for it is, we didn't want to be in a position where we would have gotten less revenue by virtue of having taken in kind than we would have gotten had we taken in value.

GRUENING: In other words, the uncertainty in the lease is in the contract as well?

BONESS: That is right. There was no way to contract out uncertainly in the lease.

GRUENING: Why is that? Because they wouldn't buy it?

BONESS: They essentially did buy it. They are going to pay the costs if it would have been put upon us.

GRUENING: Well, couldn't you have stated in the contracts that they will pick it up regardless? In other words, we announce by contracting, do we not, that we are taking in kind? In other words, the contract assumes that we are taking all this in kind? Okay, can't we say that whatever costs...

BONESS: We tried that.

GRUENING: But they wouldn't buy it?

BONESS: No.

GRUENING: Okay. So we might have to end up picking up this billion dollar cleaning plant, in other words? Is that correct?

GILBRETH: The actual cost of cleaning and dehydration, if we were ultimately liable for it, we would have to pay 1/8 of that.

BONESS: Yes. The answer is if we are going to end up doing it, we are going to end up doing it whether we take it in kind or in value. The contract doesn't affect whether we have to do it. I might add that nobody believes we have to do it. It is our legal judgement and the legal judgement of other people that have looked at it, that we cannot be held liable for that. But if, indeed, we are, we are going to be whether we take in kind or in value.

GRUENING: Mr. Parr?

PARR: I don't want beat this to death... (indiscernible)

What part of the contract is it that says we get the liquids regardless of where and when they take them out and so forth?

BONESS: Both of those terms in fact say it. 4.4 says it with respect to...

PARR: 4.4 says it but 9.1 doesn't unless I read it wrong. It says the right to process the gas and have the gas processed, is not exactly the same as saying you can get it after (indiscernible)

BONESS: It means that you get the liquids. If you process the gas, once it has been delivered to the pipeline, the only thing you get by processing the gas is the liquids, is the propanes and butanes out of the gas. That is what it means to process the gas.

PARR: (Indiscernible)

BONESS: Yes.

PARR: Mr. Gilbreth never really answered my question exactly a while ago, and I guess I didn't state it clearly. I said somebody who is an employee knows something about this and he said that the contract was wrong because it _______________ say residue gas. You didn't answer that (indiscernible)

GILBRETH: I'm sorry. I don't feel that it is important because I think we have covered it in essence in the wording by saying that we have the right to take the liquids out of the gas. And that is all that happens between the time that you initially separate it and it goes to the pipeline, you take the liquids out of it. You can call it -- there would be no problem...

PARR: Residue gas, I assume, is a standard term. What does it mean?

GILBRETH: It means the gas that comes out of the gas conditioning plant. In essence. Residue gas generally is a term that is applied when you put gas into some sort of a treating plant. And it doesn't have to be a conditioning plant like we have. It is just the gas -- the residue after the treatment. It is a fairly well understood term. If you come out to any plant, you can have the residue gas.

QUESTION: (Indiscernible)

GILBRETH: In this case, yes. The gas coming out of the gas conditioning plant, the residue out of that, would be what goes into the pipeline. But the residue out of one of the other plants, the injection plant or something like that might not be the gas that goes down the pipeline.

GRUENING: Mr. Meekins?

MEEKINS: I just have a technical question, as I understand it, the names for these different things are related to the number of hydrogens associated with the carbon atoms. Is that correct? Like hexane would be six hydrogen, right? Which ones are which? Does propane mean one and butane mean two?

GILBRETH: Methane, ethane, butane, propane, penthane, exane, and haptane. Methane and ethane are your two very lightest ones. And then as you go down, they get heavier.

MEEKINS: And all those are gas, right? And then octane would be oil, right?

GILBRETH: No. Not necessarily. I don't know the real character of octane, whether it is oil...

MEEKINS: But as you get heavier then you get into...

GILBRETH: Yes. But your lightest ones are methane and ethane are what you generally run in your stoves in your house...

MEEKINS: So you've taken out the heavier ones like propane (end of tape)

GILBRETH: ...they are taking out everything, taking out about 96% of the butane and propane. I believe it is 98% of the propanes and 96% of the butanes. And then leaving the methane and ethane. And it will depend on the design of the plant up there, whatever they take out.

GRUENING: Mr. Gilbreth. What percentage -- you say that not all the propanes and butanes will be cleaned out if this thing goes as according to plan -- what percentage will go with the gas and what percentage will be in...

GILBRETH: That is the point I just made. I don't know. It will depend on the design of plant that the operator puts in. They may take...

GRUENING: But your earlier point was that they are trying to take as much out as possible?

GILBRETH: I'm sorry. I might have misled you there. What I was saying is that they will take out as many of the heavy hydrocarbons as they can to go down the crude stream, those that are stable. And they will take out the others that will make it of pipeline quality, whatever that turns out to be. And they may have to take out 95% of all the propanes and heavier or 98% or 91%. I don't know at this stage what the design of the plant will be. But they will be taking out most of the liquids, leaving, basically, ethane and methane, and some small fractions of some liquids.

GRUENING: Now, what determines what is of pipeline quality? It depends upon pipeline design, does it not?

GILBRETH: And the quality of the gas.

GRUENING: Okay. Well, that's fixed someplace. But the pipeline...

GILBRETH: Wait a minute. Gas can be of a different quality, from everywhere, from every field...

GRUENING: But within the Prudhoe field, it is likely to be of the same quality, right?

GILBRETH: Yes.

GRUENING: Okay. The question I want to get at...

BONESS: Mr. Chairman, I think I can answer your question. Each pipeline by tariff says what the gas has to be, sets the pipeline specifications. And they will say you can have so much propane, butane, ethane in the gas. And you cannot have a higher percentage than they tell you. They will determine that by engineering characteristics.

GRUENING: Right. What is the relationship - If you examined the three proposed routes. And what can you tell us about the different characteristics in terms of gas quality that they can take. Is there a substantial difference between those three lines? I only say this...

GILBRETH: I have not examined that myself.

BONESS: I have examined it slightly, but not having Easy's background, cannot tell you very much. But I can tell you that because the El Paso and Arctic Gas pipelines are higher pressure, they are able to carry a higher percentage of propane, butane, ethane, than the Alcan, which operates at a lower pressure and therefore is not able to carry as large an amount. I believe I could supply you with the pipeline specifications that were submitted in the tariff if you are interested.

GRUENING: Yes. The question is, why the difference -- as a result of pressure? Is that...?

BONESS: Easy could explain to you, but it has to do with the dew point. If there is greater pressure the heavy hydrocarbons will not come out to form a liquid as easily as if...

________: I understand that, but why is there pressure differences between Alcan and those...

BONESS: The Alcan proposal makes use of existing pipeline facilities in Canada, whereas the other two build all their own facilities. So, those in Canada are low pressure and they have to be compatible.

GRUENING: Mr. Chatterton?

CHATTERTON: Mr. Chairman, because this may be important in the lives of some people, I'm not too sure what is important, I would like to have Easy and I caucus but I guess we can't do that. But I have a hunch, if my memory serves me, and so I guess it is a question to Easy -- is that generally liquids will vaporize more easily at lower pressures than at higher pressures, therefore, a lower pressure line -- and I am asking this as a question, as to whether it is right or wrong -- lower pressure lines will carry more of the heavier hydrocarbons in the gaseous stage than a higher pressure line would.

GILBRETH: As long as you have ample pressure and temperature, but...

CHATTERTON: Constant temperature, yes.

GILBRETH: But under the pressure conditions you can keep more liquids in that phase at the high pressure.

CHATTERTON: In which phase?

GILBRETH: The gaseous phase. As you flash your pressure, the liquids drop out.

GRUENING: In terms of, let's say, the tariff on the pipeline -- is the fact that it has got more liquids in it likely to result in a lower tariff? In other words, having liquids in there, is that an advantage to the pipeline owners?

GILBRETH: No. They want to keep the liquids out.

BONESS: I believe the tariff is set up on a price per mcf, so that wouldn't have any significance.

GRUENING: But don't they charge for taking the liquids through?

BONESS: No. They charge for the space in the line.

GILBRETH: They are interested in transporting mcf of gas. They don't want to transport liquids if they can keep from it.

GRUENING: Unless they own some -- have a chance to sell those liquids at the other end.

GILBRETH: Well, that could be then.

BONESS: Having the liquids in, of course, increases the btu content of the gas. And if the tariff were set up on a btu basis, that might have some effect, but I don't believe the tariffs are set up that way. There is also a minimum btu requirement in the tariff, which I believe is a thousand btu.

GRUENING: Well, in terms of the people who are buying -- or are contracting to buy this gas from us -- wouldn't they prefer to have a situation in which they could have the liquids? At least available for shipment through the line? And they could, in other words, as I understand it under the contract, unless we chose to take them out at some point, I mean, they have the right. They pay us for it, but they have the right to sell those liquids. Right?

BONESS: Yes. If nobody takes the liquids out of the gas, the liquids will just be burned as part of the gas stream. You will have a higher btu content gas stream. If somebody choses to take the liquids out, and we don't chose... The one way that this is very likely to occur or at least could occur, is all of the different people who own the gas may get together and decide to build a processing plant and take the liquids out. They will share in the cost and share in the percentage of the liquids that come out. We elected not to do that, but if the purchasers of our gas did elect to do that, yes, then they would own the liquids.

GRUENING: Are you aware of any plans on the part of the purchasers to do that?

BONESS: No. There are no purchasers for the other 7/8, with the one exception of Columbia Gas.

GRUENING: Which constitutes over 50% of the 7/8? Right?

GILBRETH: I heard that 50% figure...

(All talking at once)

GRUENING: 37% of the 7/8. What is the percentage?

______: May I answer for you because I was the one who made the statement. And I find that I did not know there are two participating areas. One is for crude oil and one is for natural gas. So on the basis we are now told that about 37% of 7/8 is committed. (indiscernible)

GRUENING: Well, was it Commissioner Martin's statement that that was his understanding of the amount of gas committed?

______: I thought that Commissioner Martin said that he was aware that some had been committed but he didn't know what the percent was.

GRUENING: Any questions?

______: I have a question, Mr. Chairman. (Indiscernible)

GRUENING: Do you have any more questions right along this line?

PARR: You were talking a while ago about, when you were going through and explaining to us __________ about the use of gas and water and so forth, furnish the pressure to get the oil out. If I understand you correctly, they use either gas or the water, obviously they prefer to use water in some cases because they can sell the gas. And they are apparently considering, not just produced water that comes out of the well, but also source water and you said the Arctic Ocean, to be specific.

GILBRETH: Yes, sir.

PARR: I assume that the Department of Environmental Conservation or somebody like that is looking at this to see if this is going to be environmentally feasible so that (indiscernible).

GILBRETH: No, it is not possible to use gas for this. It has to be water or ethane water.

PARR: (Indiscernible)

GILBRETH: No, not for the area that we are talking. I made a mistake when I said there is water in ethane. That's not quite true. But it in all likelihood will be more efficient to use some sort of a liquid mechanism.

PARR: Why is DEC looking at this business of taking that whole Arctic Ocean up there -- that ocean is very very shallow for quite a long ways out. And if they take a large volume of water out, there might be environmental considerations. Is the DEC looking at that now?

GILBRETH: I am not aware of it right now. Right now the studies under way are to see if the water could even be used. And, of course, they are obviously going to have to meet all the environmental criteria and everything else to use the kind of volumes that we are talking about here, we obviously would have to lay a source line to deep water somewhere. They couldn't do it within the island area there except in a few limited places, because of the shallow water depth and it freezes in the winter.

PARR: __________ the amount of gas that is going to be used for reinjection or something, anyway,...

GILBRETH: No. At least our tentative runs show us that recovery due to the water are almost independent of the gas part itself. The gas stands fairly well on its own and you have to put the water in to supplement the energy...

GRUENING: Mr. Hayes?

HAYES: I have a question of a non-technical nature. Maybe this should have been directed to Commissioner Martin. Does or would the FPC allow, it is on your royalty gas, or its selling gas to a purchaser, do they allow unusual restraints against getting a premium, selling the rights? If we had found a willing -- if people had been so inclined -- would it have been possible to get everything -- what we have in this contract is they are going to buy this gas at the best rates and there other considerations which support the all Alaska line. Could we have, also or instead of, got a billion dollars __________? Are these the figures? Are these the only figures around here? Is it a consideration?

GILBRETH: Let me take one shot and then let Fred take one. I know some of the discussions that were had on it. The purchasers pointed out that any payment that they made would not be recoverable through their rate structure and it would have to come out of their own back pockets. And they could pay something, but it would be relatively small because it would come out of their pocket. Fred?

BONESS: To my knowledge, there would be nothing unlawful about that.

HAYES: We do sell oil and gas leases. And we get a premium and that comes out of profits. ______________ we could sell... You'd finally have something in your hands... we could have done it if we could have found somebody willing to do it?

GILBRETH: Well, you are talking about two different types of companies, now. You are talking about selling oil and gas leases. Those people are in the drilling exploration and they are not controlled, whereas the purchase is our control on their properties.

GRUENING: As I understand it though, nobody was ever asked to bid on the gas on a cash bonus or premium basis. Is that correct? To your knowledge? Either of you.

BONESS: There were some early discussions. The very early offers. These offers were made actually before the price, or advance payment ruling came down. There were offers to put up front end money. I believe all of those were withdrawn after the advance payment ruling. There was no other bidding...

GRUENING: There have been no... any bids invited?

BONESS: That is what I mean. That's right.

GRUENING: Mr. Meekins?

MEEKINS: I hate to go over this again but that advance payment -- how did that relate to that, I mean... Was there some way that, before that was prohibited that they could take it not out of profits, or something? Is that somehow easier for them to do it?

BONESS: Right. They would have been allowed to pay the money and put it immediately in their rate base.

MEEKINS: Oh, I see. Right.

_______: What kind of profits would they (indiscernible)

BONESS: The rate of return is regulated by the Federal Power Commission. I don't know what...

GRUENING: On the pipeline but not on the other end of it. Well, that isn't true either, but. You do distinguish between the rate of profit that the owners of the pipeline can make and that that these purchasers could make. That is two different ball games, isn't it?

BONESS: Well, perhaps you ought to explore that with them, more than me, but let me... Pipeline companies, gas transmission companies, the companies we sold the gas to, makes no money on the purchase of the gas. That is just given. They buy gas for a dollar an mcf or 20¢ an mcf, but they sell the gas for the same price. Where their profit comes is on the capital investment, the pipeline they own. They are allowed certain rates of return on that capital investment.

GRUENING: But there is no law that requires them to sell it for the same price they buy it from us?

BONESS: Yes, there is. The FPC regulates them so that they don't make any money on that. They make money by moving gas, not by buying and selling gas.

GRUENING: But they could sell to somebody else and make money on that, couldn't they? Or not?

BONESS: Not for resale. Interstate commerce. They could sell the gas to a direct consumer.

GRUENING: Well, that's what they are going to do, aren't they?

BONESS: The principle customers of all of the major transmission companies are distribution companies. Those are all regulated sales.

_______: The people who are buying royalty gas (indiscernible)

BONESS: They are pipeline companies. They make money by having -- the only way they make money. And you ought to explore this with them in greater detail. But the only way they make money is by owning a pipeline and moving gas through the pipeline.

GRUENING: Mr. Meekins?

MEEKINS: And for doing that they receive a certain return on their rate base because the cost of building that pipeline or whatever?

BONESS: That's right. All of the sal's in the natural gas industry except direct sales in interstate commerce, are regulated, either by the Federal Power Commission or by State commissions.

_______: (Indiscernible)

GILBRETH: Their ownership in the pipeline, percentage, would be greater than...

BONESS: If you were moving one cubic foot through a pipeline, that means you'd have to distribute all of the fixed capital investment over that one cubic foot. And you wouldn't be able to sell that one cubic foot for the hundred million dollars or whatever it was that it cost to build the pipeline. So you have got to have gas in the pipeline in order to distribute it. A lot of gas in the pipeline, to distribute the cost.

GRUENING: I think what everyone is struggling with is trying to find out what is the probable value of what we are selling here. And along that line, can't these gas companies that we are proposing to sell gas to, they can sell it to someone else, not for resale, can't they, and get whatever price they can, that the market bears at that time? How does that relate to the price we get?

BONESS: I believe if they were not in curtailment they would probably be able to do that. In the curtailment situation that they are in, I don't believe they can do that.

GRUENING: Yes, but, we are talking about seven or eight years from now. With deregulation there may be no curtailments. Is that a safe assumption?

BONESS: That is a possibility. I'm not sure if it is likely.

GRUENING: Mr. McKinnon?

McKINNON: Curtailment _____________. What is it based on?

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BONESS: Basically it is based on the fact that they don't have enough on the average, I believe, to supply the customers, their firm customers. It is based on firm customers.

HAYES: Well, some way or another they -- there is a value that can be put out on the front end for their right to our royalty gas in addition to what the FPC might allow because under the terms of this contract these companies are going to spend a lot of money just lobbying. A tremendous amount of money is going to be spent so right there - there is some money there, so there is room for additional value for the sale of our royalty gas, whatever that might be. In addition to the terms of this contract which generally have to do with whatever regulations allow.

BONESS: Although the question may hinge on whether -- the value may be related to whether it can be put in the rate base or not. The cost associated with the lobbying that may be associated with this contract may be included in the rate base, and if that is so, then they could put the money out.

GRUENING: Let's just forget about the pipeline for a second and if the State just sold it today -- I don't know if you can do that -- but what value does Administration put on the -- present value -- does it put on the 26 trillion cubic feet? Is there any figure there? How do we even approach this unless we've got some idea of what the value is? If we chould ship it out today?

BONESS: Let me try and give you some ideas. I don't think I can really answer your question.

GRUENING: Is there somebody who is in the Administration who has looked at that?

BONESS: Well, one way of looking at -- If resources weren't what you could sell it for, nobody has come in and offered to give us a fixed sum for all of the gas. So I mean to that extent I don't believe anybody can put a number on it saying, today it is worth half a billion, or two billion dollars. No one has offered to buy the gas that way. The FPC regulates the price of gas in the lower 48 that's sold for interstate, in the interstate market for resale. That price was, a year ago, I believe 51¢. The new order, I believe, said a $1.51. That's the wellhead price of the gas. That is on one basis. Something you might explore to see how that relates to... That price, by the way, does not apply to Alaska, it applies only to exploration in the lower 48 states. Another thing you might be interested in is unregulated gas. That is, gas sold in the intrastate market. In Texas and Louisiana and places like that, it is selling anywhere from $1.75, $2.00, maybe even a little bit more than $2.00 mcf contract. There is something called emergency sales. Which means for a short period of time, or under certain other kinds of conditions, gas can be sold in the interstate market, in an essentially non-regulated fashion. It is not completely unregulated, but it doesn't come between the price that is otherwise applicable. I believe contracts there were going for about $1.50, $1.60, before the new rate took place. I don't know if that really answers your question, but maybe it is some help.

GRUENING: Mr. Gilbreth?

GILBRETH: Also, I believe that the volumes of gas that we're talking about here are significant volumes without a known use for it now in Alaska, necessitates that it go to the south 48. All of the companies who have talked about it, to the best of my knowledge, would be regulated by the Federal Power Commission and they are regulated on what they can pay for it. So you are talking about FPC regulation, whatever that turns out to be.

GRUENING: If we are not a person -- you might want to follow this up - if we are not a person under the natural gas act, and we sell to somebody who isn't going to resell, say an industrial user is going to turn it into something or do something with it right there, what kind of price could we expect to get? Do we get a premium price for that?

BONESS: If there would be no FPC restriction on them paying the premium price, whether we could or not, I can't answer you.

GRUENING: Okay. Has that question been explored in terms of...

BONESS: The Royalty Board made a number of solicitations that you may be aware. I don't believe any responses came in from direct purchasers.

GILBRETH: Commissioner Martin would probably have to answer that.

GRUENING: Mr. Meekins and then Mr. Hayes.

MEEKINS: I just have a short question. What is the total volume of gas included in the sale in the contract?

GILBRETH: 2.6 trillion for the three contracts.

HAYES: I'm just trying to get a handle on this value. What the value __________. The value of having the opportunity to buy the gas. I think there was testimony here to the effect that if Columbia loaned Sohio somewhere around $300 million, in a tight money market, which was interest free, for what periods of time I don't know, for the opportunity of buying 37% of the gas at some price.

GRUENING: That is a good line of inquiry. I'd like to follow that up. Maybe not tonight. Mr. Boness?

BONESS: I think that is a good observation but you do have to realize that that has to be discounted by the fact that it can be put in the rate base. Because they came in before the advance payment decision.

HAYES: The point I am trying to explore is what are we giving up in potential dollars for lobbying effort for a line ___________ what we read about?

GRUENING: Does anyone want to answer that? No comment?

GILBRETH: We'll let the Commissioner take a shot at it. There's as many evaluations that can be made there as there are people to look at it.

GRUENING: Yes, but is there a stab at it?

GILBRETH: Not to my knowledge.

GRUENING: I don't want to go too late. I think we are getting a little tired. Maybe we could follow this up. Mr. Meekins?

MEEKINS: Yes. I'm trying to do this calculation right. When you talk about $1.50 per mcf, are you talking about million cubic feet? Is that what that stands for?

GILBRETH: Thousand.

MEEKINS: Good.

GRUENING: Mr. Chatterton?

CHATTERTON: Several people have made various estimates of what the wellhead value might be and there are some figures thrown around. I don't know what the validity of them are, but we're going to need a wellhead value in the order of 55¢ mcf for the operators to obtain an adequate return on their investment. I wonder if there is some information on that around. (Indiscernible)

GRUENING: Somebody outside Administration?

CHATTERTON: I think so.

GRUENING: Does that appear correct to you or...

GILBRETH. __________ says __________, Department of Interior.

GRUENING: Mr. Meekins?

MEEKINS: Mr. Chairman, if you say the new rate if $1.50 -- just assuming that, I think the logical assumption is that the price is going to go up, simply because there is a possibility of deregulation, there is a scarcity, all sorts of combinations like that. But if you don't even take in all the things you should consider and just multiplied volume times the price, you get four billion dollars and that is not considering increases or discounted value of it for the future and all that kind of stuff. But just how much it is worth sitting there, I guess. Right now the current price is four billion at ______________.

GRUENING: Mr. Chatterton?

CHATTERTON: Mr. Chairman. I have a series of questions that would be completely within Mr. Gilbreth's discipline. And depending on time, why I can ask them to my satisfaction now or, I don't know what his schedule is...

GRUENING: Let me ask the committee -- What are your wishes? It is quarter after ten, now. There are going to be long hearings next week and we've been told by all these gentlemen that they will be happy to appear. Mr. Gilbreth are you going to be staying through til Monday?

GILBRETH: I have to go back for a meeting tomorrow and one on Saturday. I will be back Sunday.

GRUENING: I think it is kind of late. Are there some immediate questions that are left hanging that you want to cover? If anyone wants to stay and talk to Mr. Gilbreth, and he wants to stay, that is fine. Mr. Gilbreth?

GILBRETH: Mr. Chairman, I'd like to say that in our little discussion between Mr. Chatterton and I about the pressures, I will do some checking. I think we are talking about two different things and we both may be right.

GRUENING: Mr. Parr?

PARR: Let me ask one very quick question. Mr. Boness, something has been said about the possibility that the State of California might want to buy the gas from us ________, they're not regulated by FPC either. (indiscernible)

BONESS: Probably Commissioner Martin is the person you ought to... I don't think I know really any more than any of you do. I know that there was some discussion in California introducing legislation to create a gas purchasing authority. The thought was that the purchasing authority could then purchase the Alaskan gas and other gas, resell it to the utilities of California. Beyond that, I'm afraid I really don't have any additional...

PARR: Such a sale, though, even if ____________ and California is not subject to the regulations and we are not subject to the regulations, transportation is still a problem?

BONESS: That is right.

GRUENING: Would it be fair to assume from our recent comments -- from a little while ago -- that one of the things we are giving up, perhaps, is the difference between the regulated and unregulated price for selling... Under this contract we're going to receive the regulated price. And a sale to California, as Charlie mentioned, or a sale to some hypothetical industrial user, could bring a higher price?

BONESS: I would agree with that with one ________. And that is if you are talking about a sale outside of Alaska, you still have the problem of the FPC regulating the transportation of that sale and prohibiting that sale. In fact, that would be almost exactly the facts in the Transco case which is the leading for the proposition that the FPC can regulate...

GRUENING: That is the one you have intervened in?

BONESS: No. The Transco case is a 1960 case which really establishes the doctrine that they can get at the wellhead price by virtue of the authority to regulate the transportation. A little bit earlier you said, as long as we are not a person, we can get this sale. Actually you can get that sale even if you are a person. Direct sales in interstate commerce are not regulated. If A sells to B and B is going to use all of the gas himself, that is not a regulated sale, even if they're in different states. The problem is, if you want to move that gas, you've got to go through an interstate pipeline, and the FPC can then regulate the sale and decide yes or no whether they are going to let you go through it. The Transco case was a case where the FPC said, you have exactly those facts, they wanted to move the gas from Texas to, I believe, New Jersey. And the FPC said, no, we don't like what you are going to do with the gas, we don't like the price it is being sold at, and we are not going allow it. You would always have that problem if you are talking about direct sale in the lower 48 states.

GRUENING: Any questions you want to hit tonight? I want to thank you both Mr. Gilbreth and Mr. Boness, for sticking with us tonight and we thank Commissioner Martin for being here for a short time. Thank you.

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VOLUME I - APPENDIX

CONSULTANT PRESENTATIONS

MR. KILGORE: All right, thank you, Senator. My name is Richard Kilgore. I'm Director of Research for W. J. Levy Consultants Corporation. Our firm has been economic advisor on matters of oil and gas to the Legislature since, I believe, 1969. We are also consultants to a number of oil companies, domestic and foreign, small and large. We also are consultants to a number of chemical companies on feed stock procurement and feed stock availability and so on. We're also consultants to a number of major oil users such as electric utilities, mining companies and the like. In addition to the State of Alaska, we are consultants to a number of other governments, at the present time the Province of Alberta, for example, and Pertamina, the state oil company of Indonesia, among others.

As for myself, I'm an economist by training, a Bachelors Degree in Economics from Rutgers University, and a Masters Degree from Carnegie Mellon University. Senator, you've been calling me Doctor; that is incorrect. I'm one of those who passed Ph.D. exams and never wrote a thesis, so I would like to correct that.

I've been with W. J. Levy since 1963, just about fourteen years now. Prior to that I spent two years with the National Bureau of Economic Research, which is a major non-profit research organization. I was also with the

Econometric Institute for a short while, and also did some work for the Committee for Economic Development.

I would like to make what I hope are relatively brief opening remarks, and they really have to do with how we, as your economic advisors, view what you're trying to achieve through these contracts. At least my opening remarks today are addressed primarily to the underlying reasons for sale of Prudhoe Bay royalty gas.

I'm going to cover such things as what are the interests of the State of Alaska, what issues can Alaska properly decide for itself; set against these, what are the broader national interests; and how do Alaska's interests fit into the national decision making process on this gas pipeline. And we'll try to put these in the context of the contracts before you.

As I said, my initial remarks will have relatively little to say about the contracts themselves. As an opening statement, our view ca. be characterized this way: if Alaska decides that sale of royalty gas is essential to support of an all Alaska pipeline route, we feel that the contracts, in general, are carefully conceived to protect the State's interests.

The primary objective in entering into agreements for sale of Prudhoe Bay royalty gas at this time is to provide support for an all Alaska route. We would like to review briefly the reasons for Alaska's interest in that route and the importance of these reasons. As we see it, there are basically two types of benefits to the State in an all Alaska route. First, there appear to be certain fairly clear-cut economic benefits, although probably offset to some extent by some social costs.

And second, there is the question of the potential availability of gas for State use with the El Paso route.

We would like to provide some perspectives on both of these potential advantages. Among the pipeline alternatives there are certain economic advantages to the State that can be reasonably established. These were reviewed by the Governor's Task Force, and then the report, Comparative Evaluation of Prudhoe Bay Natural Gas Pipeline Systems.

An all Alaska route, together with its liquefaction facility, does appear to provide the greatest economic advantages in certain key areas. Employment is an obvious one; resulting income flows to Alaska's labor force, although all these will obviously not be State residents, there will be migrants too. Employment and income should be higher, both in the construction and operating phases of the El Paso facility, as against others. The greater length of the line, and the LNG facility virtually insure this will be the case.

Tax revenues to the State treasury should also be higher, largely through the operation of your property tax. Again, it's the greater length of the line and the LNG facility that make this possible for you.

Now, another major source of State revenue from Prudhoe Bay natural gas will be royalties and severance tax, both of which are based on wellhead values, as you know. The Governor's Task Force concluded that these revenues would not be affected by alternative routings; that is, that higher or lower transport costs to markets would not bear on wellhead values.

Now, we agree that as long as sales of Alaskan gas in interstate markets continue to be regulated by the Federal Power Commission, this is likely to be the case; that is, that wellhead values will probably be established on a basis other than a net-back from markets, that transportation would probably be added on to a regulated wellhead price, and the final price would be rolled into the final cost of gas to distribution companies and to ultimate consumers.

The FPC staff, I believe, has recommended the rolling in of high-cost gas supplies such as foreign LNG and Alaskan Arctic gas, and I understand that Judge Litt has also recommended this approach for high cost sources.

Under deregulation this is not necessarily the case, that the costs of transportation would not bear on prices. Transport costs, in that case, would have an ultimate bearing probably on the value of Prudhoe Bay resources. But we basically feel that deregulation is not a too likely event for some years to come.

We would caution, however, that Alaska cannot always assume that the value of its resources will be unaffected by the routing of its exports. In the long-run this may be the case. I think Prudhoe Bay provides a current example of some of the problems of transportation costs on wellhead value. As you know, there is a problem of potential crude surpluses on the West Coast, the major market to which Prudhoe Bay crude will move. And there is a possibility that some volumes of Alaskan crude may have to move to quite distant markets, that is, beyond the West Coast, around to the Gulf and East Coast of the United States, and this would be at very high tanker transportation costs since the oil must move in U.S. flag vessels and the distances are very substantial.

And if this is the case, if Alaskan crude does move in this direction in any kind of substantial volumes, there will inevitably be a question of the value of Alaskan crude in Alaska; that is, what market is its value established in. We feel that over the long-run it is not in the national interest, and probably not in Alaska's interests either if its wellhead values are affected, to funnel ever larger and larger volumes of Alaskan energy supplies through California; that is, larger and larger volumes beyond Alyeska crude and beyond the El Paso route, if that is chosen.

If major oil reserves are found in Petroleum Reserve No. 4 on the North Slope, for example, a strong case will be made for a pipeline to move that oil through Canada I think, despite the fact that you have a pipeline corridor southward. Incidentally, if the gas Arctic pipeline is not built and an oil line moves in that direction, it would then be pioneering a corridor rather than following a corridor which might be established had the gas Arctic pipeline been constructed.

But this is somewhat aside. We believe it is reasonable to assume that the value of Prudhoe Bay gas will most likely be unaffected by the cost of alternative pipeline routes, at least for many years ahead. And let me also say that we've looked at the various studies that have been made on the costs of transportation, what the FPC has done, what other people have done, and we are not entirely certain in our own minds which system would, in fact, have the highest cost of transportation. It looks like a very uncertain thing to us. A lot of the cost estimates are based on probabilities of delays, cost over-runs and so forth, that are very, very difficult to assess, in our view.

Against positive advantages in terms of employment, income and tax revenues, there are other factors to be considered as well by the State; and, as the Governor's Task Force concluded, some of these may be negative to the State in an all Alaska routing if one looks at such things as social impacts, the effect on the cost of living, prices in Alaska, and so on, and also looking at environmental factors which are, obviously, very difficult to assess. The all Alaska route also involves an LNG facility, movement of LNG tankers out of Alaska, and these pose new environmental concerns, and ones we feel are very, very difficult to assess.

However, these are all factors that the State and its citizens must evaluate and weigh with the more clear-cut economic advantages from taxes, employment and so on. Your own Task Force concluded that the positive advantages outweighed the negatives, as you know.

The second reason for supporting an all Alaska route is the potential availability of natural gas for in-state use, and it is very clear -- I've been through all the -- I've sat also through all the hearings -- it is very clear from your questions that many of you consider that aspect very vital.

It is obvious that the potential availability of gas is quite different among the three pipeline alternatives. El Paso moves to tidewater, and this could be very important for uses of gas in industries which involve export of their products to Lower 48 markets, obviously; being on the water, near water transportation, is important.

Alcan, of course, moves gas to Fairbanks and then moves off in a southeasterly direction, and in directions which run through areas that are, obviously, not very populated.

Gas Arctic route, of course, provides gas essentially just on the North Slope.

It is difficult, however, to assess how much value to be placed on this greater potential availability of gas for in-state use. We should point out first that there may well be other gas availabile in the State over the years ahead. Exploration is beginning now in other areas, the Gulf of Alaska, Lower Cook Inlet, Bristol Bay and so on. Gas may be discovered in one or more of those areas, and it is possible also that gas may be available for in-state uses from these areas at lower costs, lower transport costs and the like.

As an aside, I think we should also mention something that we have before, that to the extent that the State of Alaska feels that in-state use of gas is very important to it or may be important to it in the future, they might consider in their leasing policy, perhaps changing leases so that what they have available to them, to the State, is not simply a royalty which can be taken either in value in kind. Perhaps the State should consider some sorts of options in leases which provides the State's future ability to buy back gas if the State feels that's necessary. This is not what is under your consideration now, but I think I should say again one should consider this if use of gas, you feel, is important in your State.

In any event, all may not be lost in terms of future availability of gas if the Gas Arctic route is chosen. As for now, however, it is Prudhoe Bay gas that is becoming available, and other potential supplies are obviously very speculative. And El Paso clearly has the potential to make more gas available to more locations in the State of Alaska. But what then really are the advantages in using gas within the State of Alaska?

You have major oil resources in the state, as you all know, and you're obviously not an energy short region. I believe we've pointed this out before, but we would like to again: there is likely to be an economic advantage to using gas versus oil in an area such as Alaska, which is a major exporter of energy and also an exporter which is remote from its major markets. The reasons for this is that the economics of transportation clearly favor movement of oil over gas.

Gas transport costs per btu are roughly three to four times that for oil when the gas is moving overland by pipeline. Gas transport costs are roughly ten to fifteen times higher when the gas is transported over water as against transportation of crude oil over water. Thus gas, which carries very high transport costs, tends to have a lower value in an area such as Alaska, an exporting area such as Alaska; and oil, a higher value.

In general then, the economics tend to favor use of gas in Alaska and export of oil. To put it another way, gas is a better btu bargain locally, oil a better product to sell nationally. But we want to caution you and point out that gas transportation within Alaska is also, obviously, expensive if distances are very great over which gas must move; it's possible that the general economic advantage of using gas internally could be wiped out. But in general, the distances that you're likely to move gas to markets are likely to be comparatively short, at least as compared with the distances you would be moving it to export markets in the Lower 48. Thus, in general, we would expect that gas will be a relatively attractive fuel for use in the State, as against oil.

While there can be significant cost advantages to using gas in Alaska, the potential volumes that might actually be consumed, we believe, are very elusive. We've looked at a number of studies that have been done projecting these volumes, and we think it is by no means certain that the volumes would be very large, especially any time in the near future.

It is even difficult to estimate what future residential, commercial and conventional industrial fuel uses might be in Alaska. Realistically, as I said, we believe that the volumes are not likely to be very, very large. We would note that in the Anchorage area where gas has been available for many years, as you know, and which is the area's most populous region, Alaskan consumers are now consuming something like two hundred million cubic feet a day of natural gas. Your royalty share of Prudhoe Bay gas might be on the order of three hundred million cubic feet a day, or about fifty percent more than is currently being consumed in Anchorage, where it has been available for many years, and where a large part of your population lives.

Now, new industries are possible. Copper, iron ore, nickel were pointed out by the Governor's Task Force, but they also were very candid in admitting that, and I quote, "At the present time there have been no large-scale, serious and detailed proposals by the private sector to utilize Prudhoe Bay gas for in-state use."

Non-conventional uses of gas, and we've heard some testimony about these, such things as using gas as a feed stock for petrochemicals or for methanol are even more uncertain, we believe. If these do materialize it seems likely that it would be many years down the road. While the resources are available in Alaska for these types of operations, the economics of scale and of transport of products to other areas tend not to favor Alaska and tend to work against the economics of these industries in Alaska. We don't mean to say nothing of this sort will ever come about, but what we are saying is that one has to look very carefully at the economics of these things, and it is uncertain, quite uncertain as to what volumes would be used in the foreseeable future for these unconventional uses.

So, as we see it, the State's interest in an all Alaska route depends on, first, reasonably clear-cut net economic and social benefits; second, the potential availability of gas for in-state use which, in principle, could provide economic advantages as against other fuels, notably oil. But the volumes that might be used, and their importance, is very difficult to judge and uncertain.

But it is up to the State and its people to decide how important these factors are to their interests, and how vigorously, and by what means it wishes to pursue these interests. We do not, however, feel that the State of Alaska can really be the judge of what pipeline route is in the best overall national intersts. There are a great many factors that bear on this beyond the interests of the State. Alaskans should be aware that other routes than an all Alaska route might have greater overall advantages to the Nation.

On the other hand, if Alaska feels strongly about what it sees are important advantages to the State in the all Alaska route, what is important is that these interests are considered and weighed in the national decision making process that is now taking place as to the routing of the pipeline.

We were struck, in reading the FPC staff report, which strongly recommended the Gas Arctic route, that the interests of Alaska and potential benefits to the State were apparently not really considered at all. Judge Litt, in his decision, and I haven't read it all, I haven't read it in its entirety, acknowledges that -- and again I quote, "Alaska's views are entitled to substantial weight." However, I suspect that he is not as convinced of the validity of Alaska's arguments and gives them less weight than most Alaskans might wish.

If Alaska feels strongly about what it believes are the interests of the State in an all Alaska gas pipeline, it will want to work to insure that its views get a very careful hearing in the nation's decision-making process. The sale of Alaska's state royalty gas is one way of attempting to do this. If this approach is chosen, we believe that the contracts before you are, in general, as I said before, carefully conceived and effective in protecting the State's interests.

We are not legal advisors to the State, I want to caution, and we have no legal expertise, and there are others here who do. But I would like to make the following general comments on the contracts.

Some questions have been raised about the pricing provisions, and you will obviously have to consider these very carefully. You obviously are by the nature of your questions. In the end, it seems to me, you will have to assess the likelihood of these contingencies that are spoken about; that is, the likelihood that the State might be able to get a higher price if it didn't sign this contract. Various alternatives have been thrown out. Some of them seem to involve sales of emergency gas to industrial users, questions of whether the State would be caught on a vintaging problem if it signed the contract now, and get a lower price, and so on. From your questions it's obvious also that you are taking the approach that we would recommend, trying to assess what the possibilities of these things happening are. I'm sure you're going to ask me more questions on this.

In general, I've looked at these possibilities; I think they're relatively unlikely. And second, if you conclude that these things are possible, that is that it's possible that the State might get a lower price by entering this contract, and even if you assume that that possibility is very small, you might want to consider how could one protect oneself against this possibility. You'll have to ask yourself, could you write contract terms or modify this contract in a way which would protect you from these eventualities. Well, I don't know whether I have the answer to this, but I suspect it's probably doubtful that you could. I think there are probably other witnesses who may be able to give you a better answer to that.

Now, as to the other provisions, the recall provisions seem to us to be very strong. It is difficult for us to see how they really could be improved upon very significantly.

We are also pleased with the State's ability to get access to liquids under the contract. We have always felt that liquids could be very important to the State, if not as a petrochemical, or a feed stock, or for methanol, or something rather exotic, we think that they could be especially of value as a fuel to local residents, especially to businesses and residents in remote areas. So that we feel that liquids, in the end, could perhaps be of even more benefit to the State for in-state use than gas itself. It's a possibility, and we're very pleased with the provisions of the contract in that respect.

In sum, the Legislature will have to consider carefully what its interests are and how to pursue those interests. In the end, only you can decide whether the contracts before you are an effective mechanism for achieving your objectives. Thank you.

SENATOR RADER: Thank you, Mr. Kilgore. Any questions? Mr. Gruening.

REP. GRUENING: Mr. Kilgore, when you mentioned studies that you looked at for in-state use of royalty gas, which studies were they?

MR. KILGORE: Well, there was one prepared by your Division of Natural Resources.

REP. GRUENING: Could you identify it specifically?

MR. KILGORE: I think I have it with me. "Analysis of Prudhoe Bay Royalty Natural Gas Demand & The Proposed Prudhoe Bay Royalty Natural Gas Sale" dated January 1977. It's a study done by the State of Alaska, Department of Natural Resources, Division of Minerals and Energy Management.

Now, I don't want my remarks to be construed to mean I quarrel with this study. It's very difficult, all I'm saying -- estimating future requirements is an extremely difficult and uncertain thing, and this may be as good a job as can be done, but the results are still highly uncertain.

REP. GRUENING: Did you do an analysis of what projected uses might be?

MR. KILGORE: No, we have not.

REP. GRUENING: In that regard, the testimony yesterday from Mr. Thomas Stahr was that the Anchorage utility saw that in 1985 their needs in Cook Inlet would be exhausted. In your readings or studies have you established that to be true?

MR. KILGORE: No, I really don't know whether that is true. I do not know how much gas is committed to that pipeline.

REP. GRUENING: But the major part of that would be that
two hundred million cubic feet per day that you referred
to that's used there?
MR. KILGORE: Yes, a significant part of that does go for
generating electricity in the Anchorage area.
REP. GRUENING: And the total royalty share at peak capacity
is about two hundred-fifty to three hundred million
cubic feet per day?
MR. KILGORE: I said very roughly three hundred million cubic
feet a day. That's an eighth of 2.4 million cubic feet
a day, a very rough number.
REP. GRUENING: Did you run across a date at which at least
the present known reserves at Cook Inlet are exhausted?
MR. KILGORE: No, I haven't. The gas reserves data are
available. The American Gas Association has estimates
of reserves in the area.
REP. GRUENING: Do you recall whether that study of January
'77 covers that point?
MR. KILGORE: No, I don't recall. As I recall, it was
basically an anlysis of potential gas demands along the
route of the pipeline.
REP. GRUENING: But it didn't take in total the gas demand
in the State?
MR. KILGORE: I believe not.
REP. GRUENING: Are you familiar with the provision that

allows the companies that are purchasing to take one and a half times new reserves that are discovered to replace gas that we call back?

MR. KILGORE: Yes.

REP. GRUENING: Do you see any economic disadvantage to the State in doing that? It was raised, I think by Mr. Dallas, yesterday . He pointed out that, say, reserves were found in Cook Inlet, new reserves or, say, Copper River Basin, that we would be giving them lower priced gas. In other words, because of the lower transportation costs we would be giving them gas at a lower price than we should.

MR. KILGORE: Well, frankly, I don't know the answer to that. As I originally read the contract I thought it referred to gas which traversed the whole length of the pipeline, that this was gas they would have a call on. I was thinking in terms of North Slope new discoveries or more gas on the North Slope. I really don't know the answer to that question.

SENATOR RADER: Representative Parr.

REP. PARR: Mr. Kilgore, you mentioned a while ago that one of the possibilities was gas from OCS, you mentioned the Gulf of Alaska, etc.

MR. KILGORE: Yes.

REP. PARR: And that this might be cheaper than what we could get from the North Slope actually. As you know, of course, the Supreme Court has held that all belongs to the Federal Government and we don't have a claim on it. So I suppose we would have to buy it from the producers. Even considering the fact that we would be buying it rather than using our own royalty gas, do you think the economics are still such that we would do better by taking OCS gas, assuming it is produced in reasonable quantities?

MR. KILGORE: I think the answer to that is very uncertain. It's impossible to really know. One doesn't know the pricing of this gas, one doesn't know the physical circumstances under which it would be produced, what sort of costs would be involved in bringing it to shore and so on. I think the answer is, one cannot really determine in advance whether that gas would be cheaper. It could be.

REP. PARR: Is it also possible, Mr. Kilgore, that the Federal Power Commission could decide where the OCS gas would go, it might say it would all go to Pennsylvania rather than staying in Alaska at all?

MR. KILGORE: Yes.

REP. PARR: Thank you, Mr. Kilgore.

MR. KIGORE: Certainly.

REP. PARR: Two different points. You said a while ago it didn't seem really that there was too good a potential at least at the present for use in the State of the gas. At least it seemed to be highly doubtful as far as you were concerned.

MR. KILGORE: What I said was, it's very uncertain, it's elusive, and we suspect that the volumes would not be too large.

REP. PARR: Does that mean what you're saying is that you don't anticipate, at least in the foreseeable future, a sufficient demand; is that what you're saying; or are you simply saying you can't tell? I'm not sure.

MR. KILGORE: What we're saying, it's very difficult to tell. If you want a judgment, I suspect it's lower volumes rather than higher volumes.

REP. PARR: Has your company ever done any kind of a study as to the lowest economic threshold at which petrochemical plants and so forth will become feasible, of the kind that might be built, let's say, in Alaska using the royalty gas?

MR. KILGORE: No, we have not made formal studies of that. We know some of the problems of the economics involved and so forth but we have not done a formal -- this is from broad knowledge chemicals and so on. It is not from a detailed study of the potentials for petrochemical uses in Alaska.

REP. PARR: Could we assume that the use of natural gas in other communities in Alaska would be roughly comparable to that being used in Anchorage? I'm not talking absolute terms, of course, but in, say, relationship to the population? Fairbanks, for example, is roughly -- the Fairbanks immediate area is roughly one-third the size of Anchorage. Now, do we anticipate that they would use about one-third as much as Anchorage, or does that vary quite a bit?

MR. KILGORE: I think, if one has to make a guess, you might guess that it might be lower per capita. Don't forget, Anchorage is a populated area, you have a density of population, and this provides advantages, economics of scale of putting in distribution systems and things of this sort. If you were going to put gas into Fairbanks there would be a very, very high expense of putting in a distribution system. If you look at other more remote areas, the economics of just getting it there and the scale of population, or the users in those areas, is quite small and tends to work against the advantage of gas use.

REP. PARR: That was going to be my next question. You did say, I believe, something about the possibility of using, I believe, butane and propane, which are the liquids from the natural gas, especially for remote areas. One thing you really didn't touch on very much was the liquids. You said you thought it was desirable to the State to have them. Do you have any idea of the economic feasibility of taking liquids out in the State, let's say propane and butane, and shipping those to remote areas of the State to use?

MR. KILGORE: Some liquids, obviously, have to come out, I guess there's been testimony here. On the North Slope there will be some taken out for pipeline reasons. The answer is no, we have not done detailed studies on the economics of the use of propane as a fuel in areas. The statements I made really come from our broad judgment and from our knowledge of the industry, not from detailed studies.

REP. PARR: Thank you, sir.

SENATOR RADER: Representative Hayes.

REP. HAYES: Mr. Kilgore, yesterday Mr. Thompson of the Alcan Pipeline testified that in his opinion one of the advantages of the Alcan route over the El Paso route was an approximately Eight Hundred Million Dollars of additional revenue to the State. From your testimony I conclude that you don't agree with this, and if my conclusion is correct is that because you don't agree with their projected construction costs or you don't agree with his statement that if construction cost is less it will result in a better price to wellhead?

MR. KILGORE: It's the latter. I don't quarrel with his or anybody else's construction costs because I don't have my own estimates. What I'm saying, we really don't know what the circumstances of pricing of Prudhoe Bay gas are going to be. If it's still regulated by the Federal Power Commission we don't know quite how they're going to regulate it. We don't know whether there will be regulation and so on.

We think the most likely thing is that we will have continued wellhead gas regulation by the Federal Power Commission and that it will set prices independently of what the transportation costs are. That's the most likely thing to happen.

If you're looking down the road and we really have deregulation, then the cost of transportation could have an impact on the value of gas at Prudhoe Bay.

REP. HAYES: If I might continue on that, we have had testimony here that we can expect deregulation of some sort down the line. Would you agree with that?

MR. KILGORE: Well, if far down the line is a very long period of time, yes, I think you can't rule it out. We think it unlikely it would come anywhere in the near term.

REP. HAYES: Anytime during the life of the contract?

MR. KILGORE: The life of the contract is?

REP. HAYES: Twenty years.

MR. KILGORE: Twenty years. Well, near the end of the contract I suppose the probabilities get higher.

REP. HAYES: But in any event, in your opinion, you don't anticipate any regulation that would be beneficial to the wellhead price in the next ten years.

MR. KILGORE: I think that's most likely, there will not be.

SENATOR RADER: Senator Sumner.

SENATOR SUMNER: My concerns lie primarily in the area, say, of economic development potential, whichever line is chosen. Which line, in your view, would provide more economic development opportunities for the State of Alaska?

MR. KILGORE: Well, I think the all Alaska; I think that's reasonably clear.

SENATOR SUMNER: Do you think that petrochemical manufacturing is a potentially viable interest for our future?

MR. KILGORE: I think it may be. I don't know at the present. I think it might be and I think obviously this is something you want to look at. You will want to get people, chemical companies who do this kind of thing to look at it very, very carefully for you. I don't want to imply, anything that I've said, that you shouldn't pursue economic development.

SENATOR SUMNER: There seemed to be some doubt in your mind as to whether it might not be feasible, and yet the primary interest in using the Alcan line, or the all Alaska line, would be for that primary benefit. Yet you seem to have a fair amount of hesitancy as to whether that's ---

MR. KILGORE: I think this is something that you're obviously interested in. I guess, yes -- what I'm really saying is I wouldn't overdo my expectations as to what you will get because you have gas available.

SENATOR SUMNER: If we don't get the all Alaska line what opportunity in the future do you see where there might be a possibility of getting gas to tidewater or an Alaska line bringing the gas down?

MR. KILGORE: Is your question where else one might get gas?

SENATOR SUMNER: What is the opportunity of getting gas to tidewater in the future if we don't get the Alaska line that's proposed?

MR. KILGORE: That depends on what the chances are of finding gas in the area close to tidewater, and there are a number of prospective areas where gas could be found. But there isn't anyone, including myself, I'm not a geologist, but one who really knows geology, who can tell you for sure exactly what the probabilities are of finding gas in these areas because there has been, as you know, virtually no exploratory work in many of these areas. So you just can't assess in advance how much you might get or what the chances are.

SENATOR SUMNER: Are you aware of any interest at the moment from different chemical companies that might have an interest in Alaska in the petrochemical area?

MR. KILGORE: No specific knowledge. In the past -- as I say, we have some chemical company clients -- we have very broadly suggested they might want to look into this possibility. But I don't know of any detailed proposals of looks at the present time.

SENATOR SUMNER: And if I've drawn the right conclusions, you're saying that the Arctic line provides virtually no economic benefit or development benefit for the State of Alaska except money; the all Alaska line provides the most opportunity of the three lines; is that correct?

MR. KILGORE: In terms of economic advantage and potential availability of gas.

SENATOR SUMNER: Thank you very much.

SENATOR RADER: Senator Butrovich.

SENATOR BUTROVICH: Mr. Kilgore, in your work for the State, have you people projected changes in population down the road?

MR. KILGORE: No, we have not, Senator. We have not been asked to do that.

SENATOR BUTROVICH: Are you aware of what is happening in the way of population in Alaska?

MR. KILGORE: I know that it's growing rapidly, yes.

SENATOR BUTROVICH: Can you see any difference in shipping a product by water, say, from an Alaska port to the South 48 than from Alaska to Japan or from South America to the United States?

MR. KILGORE: Well, obviously the costs of transportation depend upon the distances involved, but in the case of Alaskan shipments to the Lower 48, they also involve the use of U.S. flag vessels, which are considerably higher on cost than foreign flag vessels. Shipments from Alaska, for example, to Japan would not have to move in U. S. Flag vessels.

SENATOR BUTROVICH: You are aware, however, I assume, or are you aware that when the consumer in Alaska buys something he is generally paying the freight up and the freight back because of the fact that there is no back haul?

MR. KILGORE: Yes, sir.

SENATOR BUTROVICH: Wouldn't you consider the possibility of a petrochemical industry in Alaska greatly reducing that span of cost to the people living up here if, indeed, there was a back haul?

MR. KILGORE: Yes. I think it's obviously something you have to look at. It's an important objective for you to pursue. You see a problem and you obviously should pursue it. The problem may be that -- I said may be -- certain types of chemical processing, you're talking about a plant on a very large scale, and a very small part of the output of that plant may be consumed locally in Alaska, which means that a very large part of the output may have to go to other markets, and you have to look very carefully at how competitive that big part that goes elsewhere is with supplies from other sources. I don't want to prejudge the answer.

SENATOR BUTROVICH: No, I'm sure you don't. It's awfully hard for me to reconcile, in this day and age, why it is not as practical to ship by water from Alaska as it is to ship by water anywhere else. There's no such thing anymore anywhere that I know of where such a thing as cheap labor exists. That used to be a great argument, but it certainly doesn't exist in the United States today. I, for one, don't think that enough emphasis and enough study has been developed on the petrochemical side of this question.

MR. KILGORE: I would agree with that.

SENATOR RADER: Senator Huber.

SENATOR HUBER: Mr. Chairman, I do have a couple. Dick, do you believe that the contracts that we have before us are attractive enough to disregard the earlier admonitions of Walter Levy and Milt Lipton to be very cautious about committing our future oil and gas supplies before delivery systems actually exist that are able to transport them? We've heard that many times from Milt and Walter, and can you expound on it?

MR. KILGORE: I think, as a general proposition, I would probably agree with that, but what one has to do is -- here you have a new objective, something else which you are trying to do with these contracts. You obviously have a purpose for doing it; it's to help promote a line which you seem to be quite interested in having, and you just have to assess that against a more general position that perhaps waiting is better. You really have to assess the value of it.

SENATOR HUBER: Leading to my next question, Dick. Do you believe the contracts will decide which route is chosen, and would you please try to give us a percentage of chance for El Paso against Artic Gas, for instance?

MR. KILGORE: Senator, I'm really not able to give you that kind -- it obviously provides some positive support. I really don't know what the odds of it are. I think that's beyond the scope of my competence as an economic advisor.

SENATOR HUBER: My last question fits in with it. Leaving political considerations aside, if you remove the political considerations from the contracts, do you believe we could get more money if we held off selling our gas until a transportation system is ready instead of using it for political clout? If so, what magnitude would you project?

MR. KILGORE: As I said before, we don't really know what future pricing is going to be like. We don't know whether it's going to be regulated pricing, or deregulation and so on. So there is an uncertain future. It has been suggested there is at least a possibility that the State could get a higher price by not signing this contract and waiting. But when I look at the circumstances under which this possibility might happen, I think it's unlikely.

SENATOR HUBER: You think it's not the most likely scenario?

MR. KILGORE: That's correct.

SENATOR HUBER: Thank you, Mr. Chairman.

SENATOR RADER: Any further questions? Mr. Chatterton? It's about time for a break. I assume we're just about. through with this witness, but go ahead.

REP. CHATTERTON: There are three questions, and I don't know how long he's going to take to answer them.

SENATOR RADER: Why don't you go ahead, let's try it.

REP. CHATTERTON: Sir, Mr. Kilgore, let's take an assumption that here last week there was a natural gas transportation system between Prudhoe Bay and the South 48 and, at least we will take that premise right now. Now, apparently a crisis occurred in the northeastern sector of the United States that has led the President to take near national emergency situations, at least for transporting liquefied methane between American ports in foreign bottoms and Heaven knows what all we are doing, quite an upset. On the premise that that straw existed, do you believe that the President might even have been able to legally, and I'm sure he would have, demanded Alaska gas from Prudhoe Bay even though it might have made the people of Alaska suffer?

MR. KILGORE: Yes, I think it's a possibility. In an emergency situation you can't rule out that if he doesn't have the power now that the Congress will legislate such powers.

REP. CHATTERTON: Without that straw he can't do much about it, can he?

MR. KILGORE: No, there's no way he can move the gas to the Lower 48.

REP. CHATTERTON: You indicated, when you were giving your reasons for being hired by the Legislature here and so forth and so on, that you did do consulting work for, I think you said, transmission companies, other foreign governments. I don't know whether I singled out of context transmission companies, but would any time, keeping in mind the powers of the Alaska Oil and Gas Conservation Commission, would you recommend to a client or do you think that a client, even if you recommended that he proceed to look for financing, could possibly get financing for a Six to Nine Billion Dollar pipeline in view of the powers of the Alaska Oil and Gas Conservation Committee?

MR. KILGORE: What your're asking, are these powers likely to be an important stumbling block to ---

REP. CHATTERTON: To the financing.

MR. KILGORE: To the financing? No. I think those powers, in and of themselves, no.

REP. CHATTERTON: Even though they can turn the valve and shut the gas off in two years?

MR. KILGORE: I think if the lenders were reasonably assured from their own looks and so forth at the reserves and so forth, and carefully considered what they felt were reasonable flows of gas without loss of pressure and so on, without loss of oil, I think they would go ahead, yes.

REP. CHATTERTON: You, yourself, or your associates have not so done, have you -- made that determination?

MR. KILGORE: No. We are purely economic consultants.

REP. CHATTERTON: One more question and I'll close. Do you think, by any chance, that the transmission system between

Prudhoe Bay and the South 48 would be financed by public money?

MR. KILGORE: Do I think is there a possibility that in the end public money or some sorts of guarantees, or something?

REP. CHATTERTON: Yes.

MR. KILGORE: I think there is a possibility, yes.

REP. CHATTERTON: Thank you, sir. Thank you, Mr. Chairman.

SENATOR RADER: Representative Hayes.

REP. HAYES: Thank you, Senator Rader. I want to get back on the question that I was asking you about, the timing for deregulation. I didn't quite pose the question correctly. I think you said that you didn't think there would be deregulation in the next ten years, but within somewhere between ten and twenty years from now. The contract actually starts on the date of delivery, isn't that correct?

MR. KILGORE: Yes.

REP. HAYES: So that during the first ten years of the life of the contract we might expect deregulation, going back to your previous answer?

MR. KILGORE: It's possible, yes.

REP. HAYES: Thank you.

SENATOR RADER: Any further questions?

SENATOR HUBER: I have a short one that comes from a question Mr. Chatterton asked.

SENATOR RADER: Go ahead, sir.

SENATOR HUBER: I just wondered, Dick, I thought maybe you might have some idea. Well, here's the question. How much is the reasonable flow of gas without reducing oil recovery? That's in answer to the way you used it in answering Mr. Chatterton.

MR. KILGORE: Would you repeat that, Senator?

SENATOR HUBER: In your opinion, how much is the reasonable flow of gas without reducing oil recovery in the content that you used it in answering Mr. Chatterton's question?

MR. KILGORE: As I said, I'm not an engineer, I don't know technically the answer to that. My answer to the question was, if the lenders and other people in their own analysis were assured of this fact that they probably would be willing to go ahead. I have no opinion of my own as to what the volumes would be.

SENATOR HUBER: I thought it indicated to me you had some knowledge that we didn't have, from your work with other companies.

MR. KILGORE: No, sir.

SENATOR RADER: I think you stated, Mr. Kilgore, when you started, that you've been in attendance constantly during the hearings which started Monday, and that the value judgments you have given us today, you have taken into consideration the testimony that you have heard at these hearings thus far?

MR. KILGORE: Yes, Senator.

SENATOR RADER: Are there any other questions of Mr. Kilgore? Mr. Kilgore, will you be available the rest of the afternoon?

MR. KILGORE: Yes.

SENATOR RADER: We'd appreciate it very much if you could keep yourself available for the committee if they have any questions.

MR. KILGORE: I intend to. I'll be happy to do so.

SENATOR RADER: We'll take a break and then hear from Mr. Rush Moody. Ten minutes.

(Whereupon the hearing recessed at 3:45 p.m. and reconvened at 4:00 p.m.)

SENATOR RADER: The committee will come back to order. Mr. Jerry McCutcheon has handed me a two-page document dated April 4, which he has asked to be inserted into the record as an extension of his remarks as Exhibit 18 instead of requiring him to verbally testify. Unless there is objection, we will have those remarks placed in the record as Exhibit 18.

REP. CHATTERTON: Objection. Would you change the date to February 4, please, from April 4?

SENATOR RADER: I'm sorry, did I say April 4? It's February 4.

(Whereupon Exhibit 18 was duly marked.)

MOODY

Our next witness -- before he starts to give us his own statement of qualifications, I just thought I might direct the attention of the people present, as well as for the record, that the February 7, 1977 Newsweek entitled "The Gas Crisis" in the National Affairs section, Mr. Rush Moody, a former Federal Power Commissioner, is extensively quoted. So I want you to know that Mr. Rush Moody has a national audience for sure and perhaps a national constituency. I don't know about that.

MR. MOODY: If nominated, I will not run.

SENATOR RADER: But, at any rate, I want to say one thing about the Alaska Legislature; we go first-class when we hire consultants. That's February 7, 1977 on page twenty.

Mr. Moody, would you please -- as many of you know, Mr. Moody was first retained by the State of Alaska last year by the Joint House-Senate Gas Impact Pipeline Committee, which was a statutory committee chaired by myself and Representative Gruening as Co-Chairman. Mr. Moody gave that committee extensive testimony last year on some of the same matters that we're considering now. The committee went out of existence as of January 1 of this year, the statutory committee. As I say, he was retained by that committee, as was Mr. Swanson, from funds appropriated to that committee, with the thought that some committee of this Legislature would need his advice and his counsel in this matter.

So, Mr. Moody, with that, would you please read into the record first, sir, your background qualifications, and then I assume you will make a statement and open yourself for questions.

MR. MOODY: Thank you, Mr. Chairman, to both Chairmen, and to the Members of the Committee, I wish to express my appreciation for the opportunity of being here. I have been most impressed over the course of the past five days with the attention and the concern which each of you expressed. I wish that the Congress of the United States would take as seriously some of the problems they have as you obviously take seriously this problem before you.

I am a lawyer by trade. I attended the University of Texas, with a Bachelor of Business Administration, University of Texas Law School, licensed to practice in the State of Texas in '56, in private practice from 1956 until 1971. I was appointed to the Federal Power Commission as a Democratic member by a Republican President. I served on the Federal Power Commission from 1971 until March 15, 1975. I was Vice-Chairman of the Commission for two of those years.

I resigned from the Commission in March of 1975 because of my belief that the structure of Federal regulation was injuring the consuming public of the United States and that very serious regulatory reform was necessary if the country wasn't going to get in a lot worse shape than it was already in.

Following my resignation I represented the

Governor of the State of Texas in Washington, as his special counsel on energy affairs. In January of 1976 I became a managing partner of the Washington office of the law firm of Vinson and Elkins. The firm, of which I am a member, has offices in Houston, Washington, Fort Worth and London.

I hesitate to claim to be an expert in any area, but I am more than fifty miles from home and I do have a briefcase, so I guess I qualify.

Mr. Chairman, I would start out, I suppose, by saying that I attempted to prepare for the committees a summary of the contracts together with some analyses, or attempted analyses, of what I perceive to be the major strengths and major weaknesses.

SENATOR RADER: Let me interrupt you, Mr. Moody, so we be sure we don't miss that. Make certain that the remarks, your analyses and your covering letter of January 28 is entered in full as an exhibit to the hearings, and that would be Exhibit 19; is that not correct, Reporter?

MRS. SANDERS: Yes.

SENATOR RADER: Be assured that your full remarks are in the supplement.

(Whereupon Exhibit 19 was duly marked.)

MR. MOODY: Thank you, Mr. Chairman. I realized after I got here and after I listened to the course of the hearings over the past several days that, in many instances, the issues that were being explored related to whether or not any contract should be signed, whether it was appropriate use of the State's resources to commit to these contracts, these particular purchasers, under these particular circumstances at this particular time.

I will, if I might, go through the more formal part of my contract analysis first and then turn, if it is the committee's will, to some of the other issues that have been addressed during the course of the hearing, and then finally respond to whatever questions the committee will have.

With respect to the contracts themselves, I should start out by saying that it is very difficult to make a comparison with any other gas sales contract because you have a unique situation, and much of what I can offer to you, other than with reference to the technical side of the contract in terms of measurement, metering, and that sort of thing, I can tell you whether that's standard or whether it's not standard. But there's much that's in the contracts that reflect the unique nature of the transaction, and so when I offer thoughts on that I hope that you gentlemen and ladies will understand I'm having to offer you value judgments of a sort. I didn't perceive it to be my job to say this is the best of all arrangements that could be made, but rather to take what the Administration had negotiated and brought to you and try to offer some thoughts as to where those contracts seemed beneficial and where there might be questions.

I would speak first on the positive side with reference to the contracts themselves. I find four areas where I think an excellent bargain has been struck, in several instances much better than I would have expected in trying to plat out what course this all might have taken when we first started discussing it a year ago.

I think one of the principal strengths of the contract lies in the provisions that the State will not suffer monetary loss by reason of an in-kind taking, compared to what expenses the State would be out, which would be none, if it just took in value. When the State takes in-kind there has to be a point in the production cycle when title to the gas passes. It cannot be, in my judgment, at a point after all of the processing has occurred and all liquids have been stripped out, and the State just walk in and say, "All right, we want one-eighth of the residue gas and we want one-eighth of the liquids free of any costs."

I don't believe that's the way it's going to work under your leases and under the practicalities of the arrangement. But since the gathering lines haven't been built and the processing plants have not been designed or constructed, no one knows what those costs will be, and I think it very important that the contract negotiators realized that there was a risk, a substantial financial exposure on the part of the State, and that they undertook to protect the State against those costs. This, in my judgment, they have done in Article II, Sections 2.2 and 2.3 wherein, in effect, the buyers say whatever it is that the State is out in terms of out-of-pocket costs by reason of this in-kind taking, that the State would not have been out if it were value taking, then we, the buyers, agree to reimburse the State in full.

I think that was a significant concession on the part of the buyers to the State, and I think it's an important element of protection in the contracts.

Secondly, I think it is very much in favor of the contracts that the arrangements have been structured so that the State is selling one hundred percent of its present deliverability, but not one hundred percent of its Prudhoe Bay reserves. You will notice as you go through the contracts that of the three buyers, one is to receive twenty-five percent of the gas that flows that belongs to the State, another twenty-five percent, and then the third fifty percent.

Well, obviously, that's the full one hundred percent of the deliverability as it is produced. But because the volumetric limitations are written into the contract in Article III, what we have is a situation that the State is not selling what it really believes that it has in totality. In this instance I operate on the strength of what I was told last year when I was up here, that the State's royalty share of recoverable reserve was anticipated to be in the order of 3.2 trillion cubic feet, and these contracts obviously sell less than that. So it's less than a complete sale of all of the royalty gas that the State expects to recover from Prudhoe Bay.

Personal judgment, I think that is prudent because it gives you an opportunity to have some operating experience behind you, it lets you see what the market conditions are like at that point in time when the total volumes have been delivered under these contracts, and permits you the flexibility and freedom to make new contractual arrangements if that appears to be in the best interests of the State.

Third, I think the arrangements for withdrawal of gas for in-State needs are very favorable. I think the protection there is quite good. I will express to you the view that these provisions may almost be too good wh[illegible] comes time to try to finance construction of a pipeline. It's going to be a little bit hard for a financial institution to look at a situation where the State has a right to pull back out one hundred percent of one-eighth of the gas stream, so that that throughput is not available to stand behind the generation of revenues for the line.

From a contractual standpoint, I see no reason in the world not to insist upon this bargain as far as the State is concerned. What I'm suggesting to you is that there may come a moment of truth further down the line when the financial institutions come to the State and say, "If you insist on this we can't finance it." To me, I'm trying to underscore what I believe to be the strength of the withdrawal provisions because I think they are very favorable to the State.

I am impressed with the provisions in the contracts relating to the retention of the State's rights in natural gas liquids. You've heard a number of people say, and certainly I agree with them completely, that the liquid content of this gas may be of greater value to the State than residue gas itself. I do think that the State has retained fully the right to remove the liquids, process them and do with them as they will.

You're not forced to do that. It's an option under Article IX. If you leave any part of the liquids in the stream the buyer has to take them; you, the State, will be compensated on the basis of the increase in btu content of the gas that comes about by reason of leaving the liquids in the stream. So you, in effect, have an option as to whether to pull the liquids out or to leave them in. If you pull them out, they are yours to sell on the open market or to devote to uses within the State. If you leave them in you will be paid for the btu content. I think those provisions are quite protective of the State's interests.

Finally, I read with interest the different places in the contracts where the State has the right to withdraw or terminate because, since we are dealing in such such a flexible fluid situation, I would think it important to the State to know that they were not forever bound to these contracts, that if certain things happen that you might walk away from them without incurring any obligation or liability.

There are, I believe, four instances where the State can withdraw from the contract without penalty. It may do so if it is prevented by a Federal action from taking its royalty gas in-kind. The contracts may be terminated if a decline in production results in non-profitability to the State. The sales agreements may be terminated by the State if the State so elects after the FPC makes a routing decision that is adverse to an all Alaskan line, and finally, the State may terminate if by January 1, 1979, all approvals necessary, authorizations, that the State feels necessary to get the benefits under this contract, if all of those approvals have not been received.

I think the latter quite a good provision. I think it lets you look at the decisional process at the Federal level. If it's something that the State could live with, you may do so; if you don't like the way it's structured, you've got the right to terminate the agreements. I think those provisions are all quite sound, quite protective of the State, and I think they are major sources of strength in the contracts.

The principal areas of difficulty that I have with the contract all relate to Article VI, dealing with pricing. There are several problems here. I've tried to be as exhaustive as I could in thinking up the problem areas that you need to be aware of. In the course of talking about them though, I'd like to give you an assessment as to whether I think they're problems of great magnitude or problems of lesser magnitude -- because any lawyer can find anything in a contract, you know, and say, "This might not work out too well." So I'll do the best that I can to give you an assessment of how bad it is as we touch upon each one of them.

The first one relates almost directly, Representative Gruening, to the line of questions you were asking about the possibilities of a deregulation bill or any action that would result in a vintaging situation that would be hurtful to the State. The structure of Article VI is such that there is a proviso in Section 6.1 which has overriding effect on the pricing structure. I'm sure that each of you have read these contracts carefully, and you will recall that Section 6.2 provides a pricing mechanism if regulation continues.

6.3 provides a pricing mechanism if there is no Federal regulation, and 6.4 provides a pricing mechanism if Federal regulation starts, deliveries commence, and then Federal regulation terminates. So there are three alternatives, really, in terms of pricing, and then you pick up Section 6.5, which is important and which gives redetermination rights.

But Section 6.1, the last clause makes it clear that there is one condition that cuts across all of the pricing alternatives, and it is that so long as the pipeline buyers are subject to the jurisdiction of the Federal Power Commission, so long as their rates are subject to the jurisdiction of the Federal Power Commission, then the price that they will pay to the State shall be no higher than the price which they are permitted to recover in their jurisdictional rates at the FPC.

I'm not surprised to find that the pipelines wanted that, because certainly you can understand that they don't want to pay you more than they can get back from their customers and, indeed, I would be surprised if all pipeline purchasers didn't bargain most strenously for this type of provision. But I do want you to be aware that the effect of it is to say that so long as deregulation does not occur the Federal Power Commission is going to be setting the price for your gas.

So far the State has taken the position that it is not a person within the meaning of the Natural Gas Act, that it is not subject to direct rate regulation by the FPC. I concur in those positions, but the effect of Article 6.1 is to consent to indirect rate regulation by the FPC because you are saying that the pipelines do not have to pay to you more than the FPC will permit them to flow through in their jurisdictional rate structure.

That problem disappears if appropriate deregulation legislation is passed. But if it does not pass, if we are with substantially the same form of pricing that we now have for some period into the future, then it seems to me that the 6.1 proviso does override the other pricing alternatives that appear in the contract. Because of that, Representative Gruening, you can postulate a situation where a deregulation bill passes that deregulates the producer but does not deregulate vintage of gas that the State would be selling under this contract. That would occur if a deregulation bill were drawn so as to deregulate gas sold under a contract dated after a certain date.

I offer you the value judgment that that is a most unlikely occurrence. The Commission moved away from contract date vintaging in 1969 in the Southern Louisiana Two decision and has never returned to it. I believe that I have read every piece of gas legislation that's been offered in either House for the last four years, and I can recall no bill offered in either House that went to deregulation on the basis of contract alone. They are mostly cast in terms of new gas being defined as gas sold under a contract or delivered after a certain date, and it's an "or" delivery test. I don't really think it's likely at all that a deregulation bill would be cast so that it would be harmful to you.

As a practical matter, so that you will understand why the Congressional reasoning and the FPC reasoning seems to be moving in this direction, away from contract vintaging, it is simply because if you permit a deregulated price to a producer on the basis of when he contracts to bring the gas to market, if that producer has been guilty of withholding his gas from market in anticipation of deregulation, then you have rewarded his wrongful conduct.

So, to me, it's not likely that people are going to go back to contract date vintaging as a test for deregulation. So my answer to the line of questions you posed is that there is, yes, a theoretic possibility that the State could be hurt by contract date vintaging in deregulation, but I do not believe that that possibility is substantial.

I do think that the present language of Section 6.1 is unclear in one respect. In my opinion letter, on pages six and seven, I attempted to spell out why I thought there was an ambiguity. I think, from my discussions with Mr. Byrd, that the parties did not intend the ambiguity to exist and it would be probable that the buyers would enter into whatever type of letter modification or letter of explanation that is necessary to straighten this out.

It seems to me that it must be made clear that Section 6.1's limitation goes out the window, becomes totally inoperative, if an appropriate deregulation bill is passed. I just don't think that the language is altogether as clear as it could be on that point, but I don't think it's a major burden or a major obstacle to the contracts if the purchasers will agree as to what the proper construction of that provision is.

Other witnesses have advised you, and certainly I agree, that you cannot determine a sales price under these contracts as drawn. Section 6.2 will not give you a sales price because the FPC has set no price for Alaska.

Section 6.3 and 6.4 will not give you a price because they're conditioned precedent, deregulation, has not occurred. And so you have before you a contract that is indefinite as to price, and you have a contract where your price will ultimately be determined by someone other than the State. In the event of continued regulation your sales price will be determined by the FPC. In the event of deregulation your sales price will be determined by the prices which producers, working interest owners, obtain in their contracts.

So, I would want you to understand that you are giving up direct State control over the sales price through the pricing mechanism embodied in Article VI.

There have been a number of comments about whether we will or will not have deregulation, and if we have continued regulation, what is likely --I'm mentioning at this point, because it's structured into my opinion and I think it is a major concern.

So many things have happened so fast in the Lower 48 States in the natural gas business over the course of the past three or four weeks that I don't think anybody can give you an informed guess as to the likelihood of deregulation or not. We've seen two and a half million people out of work on a given day in the Lower 48 States because there wasn't enough natural gas to go around. We've seen the Congress in three days' time pass an emergency allocation bill that for the first time gives the President of the United States the right to reach into one interstate pipeline supply sources and move the gas to another interstate pipeline.

We've seen as of, I think it was Wednesday night, the President authorized Two Dollars and Twenty-Five Cents as an emergency purchase price that any interstate pipeline could pay for one hundred and eighty day emergency purchases of gas anywhere in the Lower 48 States.

All of this says to me that it is a time of great uncertainty. We will nationally, I suppose, sooner or later arrive at a decision whether we're going to move toward greater regulation and allocation on a national scale, or whether we move to less regulation and honoring of private contracts. I wish I had an answer for you, because I think if you knew what the future held, it would make your job a lot easier.

But I cannot, in honesty and in good conscience, tell you that I'm confident what the future will bring. If deregulation continues, or if a deregulation bill is passed that is not appropriate to Alaska, and by that I have reference to the possibility that a bill might be structured like FPC and go to commencement date of a well rather than date of first deliveries. So you might have some gas up there that continues to be regulated even though a deregulation bill passes. But if some or all of your gas remains regulated, I hate to say it but I must say it, brace yourselves -- my judgment would be that the Federal Power Commission will determine a rate for Alaska as a separate producing area, that they will not treat you on the same basis with the national rate, as they treat the rest of the country. They have specifically excluded Alaska from applicability of their last set or rate orders, they have specifically excluded Alaska data from the calculation of a national rate, and to me that indicates that when the time comes for the setting of an Alaskan rate, it will be a rate peculiar to Alaska.

I am concerned, and I would want you to understand the reason for my concern, that an FPC separate for the State of Alaska will probably be not as high as Judge Litt and they came up with a very low rate, relatively speaking, for associated gas. You can understand it. Gas was their responsibility, they could keep the price down and make everybody happy by putting the costs over on the oil side; so that's what they did.

The second factor that you've got going against you is that you do have a major, huge discovery up here, and obviously the more units of gas you have in terms of reserves added, the more units that you have to spread these costs over, then you come up with a lower per unit cost figure. So the arithmetic of FPC methodology is against you if they're going to set the rate for you. I can't really do much more than say that the structure and the methodology is just going to work against you; that's all there is to it.

But that is a condition beyond my control, or yours. It is only one of those things that you need to be aware of. That condition would exist whether or not you sign these contracts. The existence or the absence in the Federal regulation is not, obviously, going to turn on whether these contracts are signed or whether they are not. But in speaking with you today, I at least want to mention to you that it would appear to me that the State of Alaska needs to be very active at the FPC in any rate matters affecting Alaskan gas, because if you mentioned in his opinion, of a Dollar, probably not be as high as some of the economic projections that have been laid before you over the course of this past week. And the problem essentially arises because of the structure of rate making methodology at the FPC. They try to set a rate for natural gas on the basis of what they perceive the cost of production to be, the cost of finding and production, and a reasonable rate of return to the producer.

They have, since 1968, been costing gas well gas where they could find a data series and they could determine how many feet were drilled in gas well exploration, what gas reserves were found, what the costs of gas production were. So their national rate determinations since 1968 have essentially been for new gas well gas.

You go back to the early Commission efforts at rate regulation when they tried to price associated gas, and they became enormously tangled up with the problem of cost allocation. Here are two joint products, oil and gas, they come out of the same hole in the ground, you spent a certain number of dollars to find it and produce it, so how do you allocate the cost between the two products. The FPC, since they had jurisdiction over gas, allocated a very heavy burden of costs to the oil, leave it to them to do it for you without some evidence, and some input and some argument from you, you are probably not going to like the results.

I did have a problem with the redetermination provisions under Section 6.5. They were the same concerns that Mr. Swanson raised with Chairman Rader the second day of the hearing; and with the purchasers' representations about their meaning of Section 6.5, I no longer find an objection in that area.

Over all, to get back to the general structure of the thing, since your rate is going to be determined by somebody else, one consequence of entry into these contracts will be the necessity that the State participate in some FPC proceedings. Your rate, under this structure, in the event of continued regulation will be set either in a national or an Alaskan rate proceeding where the FPC determines by rule-making a rate applicable to the whole state, or it will come up in an independent individual producer's certificate case where one of the North Slope producers goes finally into the FPC with a contract and says, "Here is the price I bargained for. Let me charge it." And the FPC can approach the rate issue in that context.

Or, finally, if neither of those two things occur and deliveries commence, the pipelines that buy from the State will take to the FPC their rate structure and ask for approval of what they paid to the State. There are three possible procedural mechanisms where the pricing problem can be reached by the FPC. Whichever of those three comes to pass, it seems to me absolutely essential that the State be there to participate fully. I don't think you can rely on other people to carry this important issue for you in that fort.

On the whole, if you asked me whether the pricing problems that I've tried to outline for you are sufficient to condemn the contract, I'm going to give you one of those "either/or" answers, I think. I'm not sure that what we're talking about here is a pricing issue, in terms of what the Legislature is going to be asked to do. I think it's a routing issue.

Having already stated that these contracts are unique and that, therefore, there's not much I can compare them with, I offer you the value judgment that I don't think you'll get better terms than this from anybody at this time and under these circumstances. I think that on the whole they're as good a contracts as you are likely to get.

The real question, it seems to me, and here I need to, I guess, go back a little bit -- I did come up here this time thinking that the State had already made a decision about which route it supported and that the sale of the gas was an appropriate means to try to help influence a favorable decision on the routing. I can well understand it, because a lot of things that have occurred in the last year that many members of the Legislature and many citizens in the State might want to think through again, whether those are both questions that you would still answer in the affirmative. But if you come to the same answers and you say, "We do think that the routing decision is important to the State, we do think that the State should do all that it can to influence a favorable routing decision," then I suspect that the pricing provisions here should not be a bar to your approval. But I can't -- and I'd make it perfectly clear to you, you've got a third applicant in the game since I was here a year ago. I carry no brief for El Paso or for Alcan, I carry no brief for the individual purchasers under these contracts. Pick Tenneco, Southern, anybody else -- I'm just trying to speak to the concepts of what are you doing with the State's resource and is this a good time to do it.

I think there is a risk in not doing anything. I cannot tell you, and I don't think anybody else can tell you, how much it will influence the routing decision if these contracts are approved. I think, as Mr. Ward said the other day, that most people would recognize that it will have some impact. I don't think, and this kind of disturbed me, about the way things sounded a time or two. I don't think what we're talking about is the State trading its royalty gas for lobbying efforts by two companies.

It seems to me what I was talking about a year ago and, hopefully, what everybody is thinking about, is that the State is holding out to a number of states in the Lower 48, "We will share our gas with you if you will help us get the route that we need." I have a jaundiced and prejudiced view, I suppose, of lobbying as such, if a corporate vice president thinks he's going to influence a Legislator's vote. I don't think that happens very often. I don't think that's the way to get things done anyway.

But I don't perceive these contracts as a means where you buy a corporate lobbying support and expect you're going to get anything. If you look at it that way, I don't think you will get anything. But if these purchasers, in your judgment, are responsible companies that know their business and can reach to their customers, and go to their customers and say, "We have the promise here in writing of some gas from Alaska if we help Alaska on getting the right route," then it seems to me you've got to have some influence on the routing decision.

I think Judge Litt has spoken the first word, but most assuredly, he has not spoken the last word on the routing problem. An Administrative Law Judge of the FPC, and particularly Judge Litt, is respected by the Commissioners. They will believe him to be an honest man who has worked diligently with the record over many months, and I would anticipate that they would think that he is infinitely more familiar with the record than any of them can hope to become. But they will not abdicate their responsibilities to Judge Litt. I say that institutionally and I say it knowing the individuals. I think they will try their best to reach a decision on what they perceive to be truly in the national interest.

Certainly I think the same will be true when it moves over to the White House for Executive Agency decision. So I don't think the routing decision dies with Judge Litt's decision. I think it's still an open issue. I think it's possible that some persuasiveness can still be brought to bear on the issue.

Really, I don't ask myself so much, "Is it too early to enter into these contracts," as do I ask myself, "Is it too late that we entered into these contracts?" Once again, I'm not talking about individual buyers (I hope you all understand that), I'm talking about the concept of the use of the State's royalty gas as a means of trying to influence what you believe to be in the State's best interest, and whether you come down on the side of Alcan or El Paso, that's beyond my concern and beyond my knowledge.

Whatever you do, it seems to me, perfectly legitimate that you use the State's resource in a manner that helps you get the best benefit for your State.

I preach a lot, I apologize. I guess I feel strongly about your situation up here because you're one of the few places that still has the opportunity of controlling your own destiny.

There are a couple other things that I guess are worth mentioning. I don't try to characterize them as good or bad since I think that your perception of them depends on things other than legal analysis. But I think the provisions of 11.4 are noteworthy, which grants to the Governor the right, in effect, to make a switch in the State's support. I really can't offer any judgment as to that provision. Certainly you have to be aware of it.

The contracts do contain certain options on State royalty gas that are triggered if the State effects a withdrawal of some of the gas covered by these contracts for in-State use. I think the option provisions, themselves, are not remarkable and are understandable. I suspect that they reflect the necessary bargaining process of what State negotiators had to give up in order to get some of the stronger elements in the contract that I covered earlier. So I mention it only to make sure that I've tried to make you aware at least of the major provisions in the contract.

The contract is silent on one thing that I think is significant, and I'm probably beyond my depth here and, therefore, going to make a mistake or two. But my recollection of your severance tax structure is that if you take your gas in-kind, the one-eighth taken in-kind will probably not bear a severance tax. That is a substantial revenue loss that occurs by reason of an in-kind taking that would not occur if you took in value, and I don't think the contract deals with that. I don't think that the questions asked to the purchasers the other day, in effect were, "If you pay a severance tax component to a working interest owner will you match that and will you pay it to the State," and they said, "Yes," and that's fine.

In the event of the continuance of regulation they will be permitted to pay a severance tax component only as reimbursement for severance tax pay. So I don't think that the FPC will let them pay you the equivalent of a severance tax component. So I do suggest, as I think one of the other folks did this morning, that it might be appropriate for the State to give some thought to its severance tax structure in conjunction with these sales arrangements.

One or two general thoughts, if I might, maybe it would save some time, before we get to individual questions.

I think several of you have indicated an interest in knowing whether or not these same or better terms could be obtained if the State waits until a later date to make a sale. I suspect that if the routing decision is adverse, if Arctic Gas is selected, I don't think you'll get these favorable terms because I don't think that your rights of withdrawal will be meaningful to you, and I'm not sure that a purchaser through that system would consent to it.

I'm not sure that you could get the same provisions on the reimbursement of costs incident to your in-kind taking. In essence, the four areas that I thought represented real bargaining pluses in the contracts, it seems to me if you're talking about a buyer through the Gas Arctic system, they have little reason to offer you those favorable terms. So it may be that waiting until a later date, in the event of an adverse routing decision, you might not see terms as favorable as these again.

Some questions have been asked as to whether or not the State could obtain a higher price if they pursued some other type of sales arrangement. Again I have to offer you a value judgment because I haven't surveyed the market. There's not any real way that I could do that, but I can speak with reference to how sales arrangements are structured under FPC regulation. And I will say that any sale that you make to someone in the Lower 48, or in the State of Alaska, is going to involve FPC transportation jurisdiction and, in a sense, that sale is going to be subject to FPC review.

If you attempt to find a distribution company in the State of Alaska or outside the State of Alaska to sell to, yours will be a sale for resale in interstate commerce, and the transportation of the gas will be in interstate commerce. So I don't really think that you move beyond where you are now by looking for that type of purchaser. There are not many purchasers that are able to take the volumes of gas that you all are talking about delivering, so you've got, in one sense, a limited market.

Electric utilities, I'm sure, would love to have it to burn under boilers, but I am quite positive that the FPC would never grant transportation authority for that type of use.

The FPC does have a procedure whereby high priority users can purchase gas from a producer. It's called Order 533(a). It is limited to two years. The buyer is supposed to receive only those volumes that offset his curtailment in high priority two and three usage, and I think it's just simply not applicable to the type of sale that the State would be looking to.

So, while I will not absolutely rule out any possibility of a sale at a higher price, I offer you the value judgment that you probably won't find one.

One of the Representatives the other day indicated that perhaps Section 13-B of the Alaska Natural Gas Transportation Act rendered the desirability of these contracts somewhat less than might have been true before the passage of that act. It seems to me that 13-B is helpful to the State only if the right route is selected. If the gas moves out of the State north of the Arctic Circle I don't know how you would ever implement your rights of withdrawal. You're just not going to have a means of getting it down to where your people are and where you hope your industry is. So it will look good on paper. It doesn't vanish if the Gas Arctic route is chosen, but it is hard to see how it is of much practical help to you.

I will confess to a certain academic interest over the last few days in the discussions that you all have heard with reference to the effect of transporation costs on wellhead prices. It's a very confusing area, and I will offer you my perception if you want it.

In a regulated market, transportation costs are not going to have a thing to do with wellhead price. The FPC is going to set a wellhead price based on what they perceive to be the costs of finding and production, and a reasonable rate of return to the producer, and they simply have no mechanism for looking at transportation costs as a function of that rate. I know of no instance that the FPC has ever set a producer rate based upon any consideration of transportation costs.

In the event of a non-regulated market, I think that what I have heard over the last several days with two sides of the argument, I've heard some truth on both sides, but I'm not sure that I've heard the complete truth from either side, and I mean no disrespect, obviously, by saying that. In a deregulated market transportation costs do have an influence, but they are not the only factor that influences wellhead prices.

The nature of the use to which the gas is going to be put determines whether it is appropriate to look at a number two fuel oil equivalency price. For some uses a user will pay much more than a number two fuel oil price. So you have to look at the market to which the gas is going before you know what is your base point for comparison backwards, and in the absence of a fundamental change in regulation the average cost of purchased gas on a pipeline system is buying from you has an influence on the wellhead price in the sense that, indeed, regulatory agencies now tell a pipeline or distributor, seller, to roll in or average his costs. And if you're dealing with a buyer that has a low average cost to purchase gas, then what he pays you is influenced by the fact that he's working against a lower averaging base.

I guess what I'm saying is that in the event of deregulation, if you tried to determine wellhead price only by looking at transportation costs and only by equivalencies with number two fuel oil, I suggest that's less than all of the factors that will enter into it. I suspect that as of right now, trying to determine what wellhead price will be in the event of deregulation is largely a metaphysical exercise. I'm just not sure that it's productive. You'll get as may guesses as you get economists up here.

Now, we lawyers are more definite, you see. I'm sorry I've taken more of your time than I intended to. I guess, Mr. Chairmen, it would be appropriate to offer myself sacrificially.

SENATOR RADER: Representative Rudd.

REP. RUDD: Mr. Mocdy, this morning Mr. Swanson mentioned the possibility of storing our gas in place for some time, until we have a need for it. Is that a possibility if we don't approve these contracts? Is that a possibility?

MR. MOODY: Well, I guess there are two sides to the question. Is it possible mechanically, physically?

REP. RUDD: I was going to ask both questions.

MR. MOODY: And is it possible ---

REP. RUDD: By law.

MR. MOODY: Regulatory. I better not make a guess on the first one because I really don't know enough about your reservoir and its mechanics, that I really couldn't give you anything of value other than to guess on it. On the other side of it, once again you've got to make a judgment as to whether we're going to be deregulated or continue to be regulated. Since my personal feeling is that we probably are going to face regulation, I think I'll deal with that one first.

If the producers start selling the gas stream into interstate commerce you would have to be most careful that some type of balancing arrangment or under-lifting arrangement with the producers had been reduced to writing and had been approved by the FPC, because in my judgment, if eight-eighths of the gas stream starts flowing in interstate commerce without some advance approval for the State to be storing its gas having been had and obtained from the FPC, you would be met with the argument when you later wanted to change the flows that you were trying to work an abandonment and that Section 7-B of the Natural Gas Act would interfere with what you wanted to do.

I think it's something that perhaps could work but I think you need specific agreements and, to be on the safe side, I think you'd want to go for regulatory proof.

REP. RUDD: Could you give us your appraisal as to how likely it is the FPC would agree to such an arrangement?

MR. MOODY: I'd guess they wouldn't. I think they want your gas.

REP. RUDD: Would this hold true under both conditions of the Alaska exemption, whether it's in effect or not in effect? Would that have any bearing, do you think, on their decision?

MR. MOODY: I read Section 13-B to apply to withdrawal from the system after deliveries have once commenced. Maybe that's too narrow a reading. Assuming 13-B stays in the Act and your arrangements for storage were structured as part of a royalty sales contract, I guess you could bring it within 13-B.

REP. RUDD: Thank you. I have one more question on another subject.

SENATOR RADER: Go right ahead.

REP. RUDD: I think it was Mr. Thompson who mentioned yesterday or the day before, that he felt that a lobbying effort in Washington would not really be a very important thing to do at this time because it is now a decision that is before the FPC and then the President, and Congress only gets into it after those two have made their decisions, and only has a very short time to evaluate the President's decision and, therefore, probably will not go against the President's decision. But you're a former Commissioner on the FPC, and you just mentioned that you thought that lobbying efforts would be valuable. Are you talking about influencing the decision of the FPC and the President and the Congress, or at what point do you think the lobbying would be most effective?

MR. MOODY: I'm going to, if I may, take exception to the word "lobbying".

REP. RUDD: I'm sorry.

MR. MOODY: No, really. Because to me it has a specific connotation; perhaps it doesn't to others. What I suggest will happen is that the Federal Power Commission has been told to gather all the information they can in order to make the most advised recommendation to the President as they can, and the President and the Executive Branch has been told to gather all the information that they can, talk to as many people as they can.

I think those people are genuinely interested in arriving at the best decision they can. I would not want to believe, and I do not believe, that their minds are made up. I don't think that there is anything wrong with offering the views of concerned people, both at the FPC and to the people in the Executive Branch that are charged with this responsibility. I think that the opportunity still exists for people other than the State of Alaska and people other than El Paso, who have made their record, to go in and say, "We do have an interest and here's what it is, and we'd like for you to take us into consideration," and I think the opportunity exists both at the FPC and in the White House.

REP. RUDD: Thank you.

SENATOR RADER: Any further questions? Representative Hayes.

REP. HAYES: Thank you. Mr. Moody, you mentioned that one of four pluses that these contracts have -- interested me. One in particular that's of interest to many of us here is the right to withdraw our royalty gas for in-State use after it's originally injected into the pipeline system. Then you mentioned that when we get around to the financing that Alaska may have to face a moment of truth. Does that mean that we may have to subordinate that particular clause in order to make it possible for the pipeline companies to build this line and, if so, what do you think the chances are that we'll have to do that?

MR. MOODY: Well, I hate to borrow trouble, but I can see that a financial institution wouldn't be too wild about lending on an eight-eighths pipeline knowing that one-eighth of the through-put can be withdrawn at any time, because it's the through-put that generates the revenues that pay back the debt.

I guess I'd just be guessing if I said I know they're going to come to you and make you give it back. The best I can do is offer you the view that to me, representing the lender, you know, I'd say, "Gee, we'd better go get this straightened out some way, we'd better get some means of determining that the whole financing of the line is not going to be in jeopardy."

REP. HAYES: So we have three pluses and a possible plus.

MR. MOODY: From a contractual standpoint you've got a very good plus. My point is that it may be too strong a plus. You may have to give some of it back.

SENATOR RADER: That was my understanding of what you were saying too, that we drove such a hard bargain that these people may not be able to finance the pipeline with what they have left.

MR. MOODY: To me it's quite conceivable it could deveop that way.

SENATOR RADER: Representative Gruening.

REP. GRUENING: Is the project so marginal in your view that what we do with our one-eighth will kill the project? I mean, can I fairly infer that from what you said?

MR. MOODY: No, I have no judgment about the economics of any of the three projects. I've never sat down to study them.

REP. GRUENING: But you're saying as it relates to private financing that our one-eighth is crucial.

MR. MOODY: I'm saying that from the standpoint of a lawyer who has done a little bit of work in representing lenders that any time you see something that threatens the revenue flow that you're looking to for repayment of your debt, you raise a red flag. But then I don't know, I have no judgment as to whether the difference between your one-eighth and eight-eighths is the difference in "go" or "no go" on the line. I'm sorry, I have never done any economic studies on it.

REP. GRUENING: But what you are saying though, it is the difference between "go" and "no go" as to whether a private financer backs that line?

MR. MOODY: I think they're going to look at this provision very carefully, and a prudent lender is going to look at the reserves and he's going to look at the capacity of the line and the cost and everything else, and maybe this won't be a problem. But somehow I kind of suspect that some day somebody is going to knock on the door and say, "We need to discuss these withdrawal provisions with you."

REP. GRUENING: You mentioned that if the Arctic route is chosen we wouldn't get as favorable a contract. Let's say we don't enter into a contract and the El Paso route is chosen, do we stand to get as favorable a contract?

MR. MOODY: They struck their deal with you once. I guess they'd stick by the same deal, but I don't know them that well and I haven't asked them.

REP. GRUENING: You heard Mr. Tussing's testimony yesterday as to what he thought the international ramifications ---

MR. MOODY: I was enthralled with it.

REP. GRUENING: Yeah, I think the headline should have been "Members Entertained by Testimony," but I think what he says may have some merit. But I want you to comment on his view that the Canadians are going to make the choice and that if they do, in fact, make that choice, or cannot make that choice, isn't the El Paso route inevitable if they can't make it, and what we do in this contract won't make any difference in that international decision making process?

MR. MOODY: I really had the feeling, listening to Arlon, that if I had his prescience about what our government was going to do, and what the Canadians were going to do, and Congress was going to do, and the FPC was going to co, I ought to be making a lot more money than I'm making. I suspect that an awful lot of what Arlon was saying were very well educated guesses as to what he believed would develop or might develop and, certainly I respect his judgment and the knowledge that he has and the facts from which he draws.

I don't come to the same conclusion about everything being cut and dried and that it's only the Canadians that have something left to say. It's not that I know that that's true, it's just that I am unwilling to recommend to you that you pass up the possibility that you've still got a way to do something. You see, I don't know, and all I've got to do is assume that the FPC and the White House will operate in good faith, that they still have open minds, that they're still willing to listen to reason, to rational arguments from responsible people, and if those assumptions are correct then there is still a way to try to make this routing decision come out better than it has so far.

REP. GRUENING: I think what you say in terms of rational arguments having some effect is persuasive, I cannot believe anyone who says we can't have any effect on this decision. But the question before us is whether the commitment under this contract will have an effect on the rational part of the decision making. You described earlier that you thought it could have an effect in terms of, I think, the way that the public would perceive what we're doing here. In terms of the amount of gas and date of delivery that could occur under this contract what should we be telling, truthfully telling the American people they're getting under this contract so that they'll be persuaded that they should press their representatives for an all Alaska route?

MR. MOODY: That you're offering a share of your resource, and you're offering it under written contracts with responsible people that operate as buyers, sellers and transporters of gas, and that if the correct route is selected then you fully intend to abide by the terms of this contract.

REP. GRUENING: But can we say that in any other document or any other way and saying in effect that -- is there a more appropriate document than this to say, or a more appropriate spokesman to say this than the gas company?

MR. MOODY: I've forgotten which Justice it was on the English bench that once wrote, "As a man binds himself, so shall he be bound." It seems to me that the most appropriate way to express your sharing of your resource is in a contract. It's very easy for people to say, "Oh, we'll share with you, trust us." But, you know, you're to the point of the State committing itself in writing by solemn legislative and administrative acts that say, "Yes, we will share the resource." It seems to me that's appropriate.

REP. GRUENING: Do you think there is any danger, as long as you're making these political assessments -- could you tell us, is there any danger in assuming that the public is willing to go both ways; in other words, we'll allow you to take it back for any in-State use you want and we'll give you special legislative consideration for it, plus we're going to go along with your route decision? I mean, maybe we're asking for too much; I don't know.

MR. MOODY: It's a valid concern.

REP. GRUENING: One other question. You mentioned the provisions that you've analyzed although, in other words, if you were writing the contract out of the context of trying to affect some political decision you might try to renegotiate it to cover some of these.

MR. MOODY: Representative, I have tried to express in one of the opening paragraphs of this letter. It is very difficult to go in and pick up an executed contract and assess accurately whether it's the best deal that could have been struck or not. Those people who negotiate for you and against you have to go through a process of give and take, and unless you have been a party to the negotiation process and you know where you compromised and where they compromised, and where were the absolute points of no give at all, then you really don't know whether this is the best deal that could have been arranged.

I've read summaries of the contract negotiations. I don't know whether in any particular instance I or anyone else could have driven a better bargain for you, and I just wouldn't want to be in the position of saying that I don't think your negotiators did a good job.

REP. GRUENING: You mentioned that under these contract provisions a letter of agreement, especially 6.1 and I think 6.5 ---

MR. MOODY: Yes.

REP. GRUENING: -- could be corrected by getting a letter agreement or something on the record to clarify the possible ambiguity. As an attorney, wouldn't you recommend to actually get that into the contract?

MR. MOODY: It can be part of the contract by supplement so long as it's been done and properly agreed to by all parties before the Legislature is asked to vote on it. It seems to me that would be the determinative thing. They've laid a proposal before you but I don't see why it could not be supplemented with an additional paragraph or so before the Legislature votes.

REP. GRUENING: Thank you.

SENATOR RADER: Representative Parr.

REP. PARR: Thank you, Mr. Chairman. Mr. Moody, this contract is a twenty-year contract, and you've had a lot of experience with the FPC; what is sort of a rule of thumb, if there is any, on the length of contracts across the country in selling natural gas?

MR. MOODY: Yes, sir. Up until three years ago I would say twenty years was the industry standard contract. About three years ago the Commission went through kind of an evolution in its manner of determining to what gas certain rates would apply, and they permitted a higher price after the expiration of a contract if a new contract was entered into, called roll-over contracts.

You have a contract that expires, you would by FPC vintaging be held at a certain level, but the Commission kind of restructured and they said, "If you enter into a new contract we will permit you a higher rate."

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Leaving aside why that happened, whether it was good or whether it was bad, one practical consequence was that contract term shortened because people saw that by contracting for a shorter period of time they would have an opportunity to roll over the contracts and move to a higher price. As a consequence of that trend, the Commission, in Opinion 770-A, abandoned the roll-over contract concept and they refused to permit the higher rate for roll-over contracts. So we may now see a restoration of longer term contracts.

REP. PARR: In this last three-year period you're talking about, what would be sort of a guess as to the usual length?

MR. MOODY: There were still some twenty, some fifteen. The FPC does an every six month analysis on contract terms, and some were as low as two and three years. It would be hard really to say what the industry average was because it was such a short transition period and it really didn't shake out before it got changed again.

REP. PARR: I would like to, Mr. Chairman. You said also a while ago, Mr. Moody, in answer I believe to somebody's question, that we're not likely to get a better contract if we were to wait. Can I assume that you were talking about a regulated, as opposed to a non-regulated, situation in making that statement?

MR. MOODY: Yes.

REP. PARR: You said, when you first started talking, that nobody can really guess whether deregulation is going to come or not; and then just a couple minutes ago you said your own belief is that we will continue to have regulation. Am I quoting you right?

MR. MOODY: Yes, I'm afraid so. I'd like not to be quoted too widely.

REP. PARR: One last question, Mr. Chairman. You said that we might be able to offer some of our resource to some of these states through valid companies with good contractual arrangements, etc., and get their support. Can't we assume that the states which are going to profit by the other route, such as Arctic, are going to be throwing their support behind that route and you're going to wind up, perhaps, with simply a matter of counting the number of votes in Congress in favor of each one, and each one going for the one that seems in its own best interests, Illinois versus (shall we say) Alabama, and Texas versus New Jersey, and so forth?

MR. MOODY: Yes, sir. I would have thought that's the way it was going to develop. But you've got, it seems to me, something kind of unusual operating in your favor on this question. The producers are not entering into contracts because they're concerned about where they're going to be on the price structure. So as of right now nobody is making a commitment of their gas that they can promise and that the Gas Arctic people can go state by state and say, "You're going to get so much, you're going to get so much." As long as the producers don't contract, you are the one party in a position to say, "We're going to share our resource with you on a specific basis."

REP. PARR: You don't think, Mr. Moody, that the companies such as Michigan/Wisconsin who talked to us the other day, or other big companies in the Midwest, are going to have their people believing they profit by Arctic Gas because there are no signed contracts? Is that what you're saying?

MR. MOODY: No. You know, human nature is a funny thing, and part of what's involved in this whole routing process are certain perceptions in the Lower 48 States. There is a perception that Arctic Gas will bring gas to the Midwest and to the Northeast at a lower cost; there is a perception that El Paso takes gas to the West Coast, that's already afloat in oil; there is a perception that Alcan started too late and hasn't studied their project properly and didn't make as strong a presentation as they could have under other circumstances.

You're dealing with perceptions when you are trying to get people to become involved enough to go to the FPC or to the White HOuse and say, "Gee, this route would certainly help us." It seems to me that the commitment of specific volumes, even with your oil rights, so specific companies that reach specific states might be of some help in altering those perceptions.

REP. PARR: Thank you, sir.

SENATOR RADER: Senator Sumner.

SENATOR SUMNER: Inasmuch as I get the impression that price is probably going to be determined outside of what the State of Alaska is going to be able to do, doesn't it really come down to a very simplified option that in the end what we are able to provide for Alaskans, or the citizens of Alaska, will depend on whether we have an option of sending part of our royalty gas to an in-State petrochemical type of operation or whether it goes out of the State? Is it that simple?

MR. MOODY: Senator, I offer the judgment that from the very beginning price was of less importance to the State than was retention of the control of the resource.

SENATOR SUMNER: In your view is the Alcan project in a first, second or third running position?

MR. MOODY: I really never have gone into any of them, and I don't mean to dodge you, but the first of these applications were filed when I was on the Commission and some of the evidence came in while I was on the Commission, and I really have hesitated and don't want to be put in the posture of endorsing one versus the other.

SENATOR SUMNER: And you're here to try as best you can to equip us with the knowledge that you have so that we can punch a button to decide whether we ratify a contract or whether we don't. If you had to punch a button and it comes down to no discussion or no nothing, one day a button has got to be punched; if you had to punch that button, would it be yes or no?

MR. MOODY: Was it Mr. Levy that said, "Elect me to the Legislature and I'll tell you"?

SENATOR SUMNER: But before we let you escape from us today we're going to keep you pretty close to that position. What is your recommendation to the Legislature?

MR. MOODY: I think you've got to go back to where you stand on the routing problem.

SENATOR SUMNER: That goes back to where the option is, and we're now down to the point where our destiny is pretty much controlled as to whether we have the option of using our gas in-State or sending it out.

MR. MOODY: Senator, obviously I have an opinion.

SENATOR SUMNER: Yes, sir, and that's what I'm trying to get.

MR. MOODY: My problem is, I feel very presumptuous, as somebody who grew up in Texas and has been in Washington the past five years, being in the position of saying to men and women like you, who are elected to and who do represent your constituents, and who know your State, what their needs are and what their concerns are -- you know, how can I tell you what to do?

SENATOR SUMNER: No, that isn't what I'm asking you. I'm not asking you to tell me what to do, I'm asking you to tell me, on the basis of what you know, which you've got lots of years of experience, you're an expert, acknowledged, self-professed, being out of town with a briefcase, and I'm trying to determine in your mind which way would you go if it was your decision, if you were one of those people making a decision.

MR. MOODY: Maybe I ought to put it this way.

SENATOR SUMNER: Sometimes I wish the little button had a message like that.

MR. MOODY: If I lived in Alaska I would probably write my Representative and Senator and express the view that the routing decision was of terrible importance to the State, that this offered a means of perhaps arriving at a happy answer to the routing decision and that, therefore, my Representative would vote for it.

SENATOR SUMNER: Thank you very much. That's all I have, Mr. Chairman.

SENATOR RADER: Mr. Chatterton.

REP. CHATTERTON: Thank you, Mr. Chairman. Mr. Moody, I'm looking for a value judgment on your part somewhat akin to the question you just had. Let's say that Chat Chatterton takes the position that he just doesn't want any straw, any conduit at all from Prudhoe Bay to Washington, D.C. where they can turn a switch, he wants to delay it as long as he possibly can; do you think that the approval of these gas sales contracts will change, will accelerate it? If I want to delay it, will I be accelerating the issue?

MR. MOODY: Having said that I think that the contracts would be of some benefit in the routing decision, I think it necessarily follows that if you have no contracts, it kind of just may help Gas Arctic, I don't know. I just don't know, and I don't mean to be flip or presumptuous.

REP. CHATTERTON: I'm not worrying about any route, I don't want any route.

MR. MOODY: I can recognize what you're saying and I would have said, "Now, Chat, don't worry about that," a few days ago, but I saw the Congress of the United States pass an allocation bill and, as you know, it was conventional wisdom that the pipeline industry producing states would just never let it happen. But emergency situations came up, the pressure was there, and the bill went through both Houses, and was signed by the President in three days' time. I recognize your concern.

REP. CHATTERTON: Thank you.

SENATOR RADER: Representative Hayes.

REP. HAYES: Since we've discussed and mentioned several times that the most important aspect of this whole thing is the future in-State use of Alaska's royalty gas, do you think that by signing these contracts that we are in any way jeopardizing that opportunity in the future, as opposed to not signing any contracts?

MR. MOODY: No, sir, because I think the withdrawal rights are clear.

REP. HAYES: But we get into the situation of -- well, first of all, we've got the financing problem that we talked about. So, you know, we're going to be back to the drawing board, possibly.

MR. MOODY: Maybe I shouldn't have mentioned that.

REP. HAYES: The second problem is that once you get it into the system, once it starts flowing out for sale, they may decide that it's in the best interests to the country -- once it starts flowing out it's awfully hard to turn it back around again. That's another possibility of losing it. So it would appear that signing the contracts would put us in a more hazardous situation, could be more jeopardy on the possibility in the future of having our royalty gas available for in-State use than if we didn't sign anything, we just waited a while.

MR. MOODY: It seems to me that turns on the perception of the same answer that Representative Chatterton asked. If you believe that not signing delays the construction of any pipeline system or transportation system, then what you suggest would follow. But if failure to sign or signing does not slow up the selection on the building of a transportation system, then you are vulnerable to the taking, whether or not you sign the contract.

SENATOR RADER: Any further questions? Senator Huber.

SENATOR HUBER: Most of my questions have been asked, or almost asked, Mr. Moody. One hasn't as yet. The change that you recommend in our severance tax structure, should we rush and make this effective before we get into a contract, from a legal viewpoint?

MR. MOODY: Senator, I'm not an expert on your structure, but I don't think so. I think my answer is that you have time to do it but it ought to be done before gas starts to flow. I don't think you want to tie it to the flow of gas. Somehow that seems like it's to late to do it.

SENATOR HUBER: The time structure then is that we should do it before the flow of gas, but it's not necessary to do it before we enter into the contracts, if we're going to do it?

MR. MOODY: If you will take the word of a Texas lawyer on Alaskan tax matters.

SENATOR HUBER: Would you care to speculate just a little bit further on Charlie Parr's question to you? It got very closely to what I wanted to get into, and the part that it didn't cover is, maybe in what magnitude of lobbying do you think it might take to change the perception of the people in the East that the Canada route is going to bring it to them; the perception in the Northwest that the Alcan route dumps it into them; and the perception in the Southwest, Arizona, California and so forth, that El Paso brings it to them with the first crack? Would you care to speculate briefly on what you think what might be the -- what kind of effort, how big an effort might be needed to overcome those ideas?

MR. MOODY: Senator, I wish I could be some help to you. You know, I think you're talking about a question of political science, or polling, or something I know I don't know, and forgive me, I just can't be of any help to you on that.

SENATOR HUBER: In that question, would you go along with me one more? Would you have any feeling in the area where you are living right now, Washington, D.C., if you and your neighbors feel that, for instance, the

Trans-Arctic Canada route might not give them the best bite on the gas or not? Do you know of any perception like that?

MR. MOODY: No. I think it's still probably as an issue that is being discussed not at the individual consumer level so much as at the State Commission, State Government, certainly involved industry level, but I doubt that Alaskan routing has become a matter about which individual consumers have views at this time.

SENATOR HUBER: I was getting into the end, of course, from necessary lobbying to convince Congress, based upon your earlier remarks. You haven't then noticed this, yourself?

MR. MOODY: No, I haven't, and, you know, you get involved in a certain area yourself and you begin to lose objectivity, because that's all you think about or all you talk about, and I'd be a very poor person to ask what people in Washington, D.C. feel about this, because I would necessarily reflect my own thoughts.

SENATOR RADER: Any further questions of Mr. Moody? Mr. Moody, we thank you very much, and I know that Mr. Kilgore and Mr. Swanson both have reservations out, so I think that we'll excuse you gentlemen from further attendance this afternoon, although we still do have some members of the public to be heard.

You're welcome to stay if you wish, but as far as the committee is concerned I think it would be well to excuse you to try to make your plane connections.

MR. MOODY: Thank you.

SENATOR RADER: Let me find out before we take our ten-minute break where we stand. I have a list of witnesses that are possibly here or possibly not. Is Mr. Heinmiller here to testify? I see Mr. Penney and Paula Easley. Do you wish to testify?

MR. PENNEY: Yes.

SENATOR RADER: Carolyn Berg, is she here? Dennis Schlofeldt, from the Fairbanks Chamber of Commerce. I'll assume that he's not going to testify. Is there someone here from the Associated General Contractors who is going to testify? There's no one from the Associated General Contractors.

Under those circumstances, we have Mr. Penney and Ms. Easley from OMAR here to testify, the only remaining witnesses. Does the committee wish to take a ten-minute recess, or shall we take their testimony?

SENATOR HUBER: Let's take five minutes.

SENATOR RADER: Let's take a five-minute break.

(Whereupon the hearing recessed at 5:25 p.m. and reconvened at 5:35 p.m.)

SENATOR RADER: Would the committee come to order here?

We have Mr. Robert Penney and Ms. Paula Easley. Would you identify yourselves and who you represent? I suppose you would like to make a statement and then open yourselves to questions. Would that be the way to proceed, Mr. Penney?

MR. PENNEY: Yes, that would be fine, Mr. Chairman. Chair-people, if that is the correct term, my name is Bob Penney, and I'm President of the Organization for the Management of Alaska's Resources. On my left is Ms. Paula Easley, she is our Executive Director.

This month OMAR is two years old. It was started some two years ago, with the idea of having some citizenry input into what happens to the development and/or the management of Alask'a resources. One of the first goals and projects that we took on was the issue of this natural gas line, and since then we've spent many, many hours and an awful lot of time trying to at least get a layman's understanding of what's really happening.

We have an office in Anchorage. The address is the Fourth Avenue Theater Building. We have a one-man office in Fairbanks, Alaska National Bank, and this next month we'll have an office in Seattle, and we have an associate office in Washington, D.C. under USA, Alaska. We have forty-nine directors from all over the State, and we have an executive board of eleven people, and the executive board meets once a week. We have public meetings once every Thursday in the Anchorage office.

I'd like to start off by saying OMAR doesn't really say who builds the gas line, we never have. We don't care where it goes, through what cities it may pass; we just say it must go to a tidewater, ice-free port within the State of Alaska. And our second point, in our estimation, Prudhoe Bay gas is going to be produced. Now, it's produced with the oil and, as we understand it, we don't own one-eighth of the gas, we own one-eighth of the production and initially, unless we take it in like kind, we own one-eighth of the revenue. And, as we understand it, if we elect to take it in like kind, as Commissioner Martin has done, we then can take one-eighth of that production of that gas in like kind or take the gas itself.

(b) Per Atlantic Richfield Company engineers (Chat was at the meeting) it will cost nine to ten and a half percent of the gas to reinject it into the ground.

(c) It's against the law to flare it, as it should be.

(d) Eighty-seven and a half percent of the gas is already sold to others. It will leave the State, the rest of the country will demand it. There is a Federal law that sets a time frame for delivery of this gas. The gas is going to be produced.

Our share, as brought out by Mr. Moody, of the estimated three and a quarter trillion cubic feet, we have in this contract before you sold or are endeavoring to sell eighty percent of that gas, or 2.6 trillion feet, and that amounts to eighty percent of the gas. Somebody said the other day they thought only seventy-five percent should be sold, and this is approximately eighty.

Our surplus royalty gas has to be sold for a period of time; that's what our observations have given us. We can't use it all right now in the State. I believe the State of Alaska looked for four and a half months trying to find a user for that gas specifically within our State. OMAR really feels this, and the reason we feel we're for this line is as follows.

We feel that the eventual use of the royalty gas within our State is the number one reason and benefit that Alaskans will accrue from this gas line.

(b) At a flow of three hundred million cubic feet a day, this royalty share equals, according to our figures, 2.2 times the amount of gas presently being used by forty percent of our population, the Anchorage Bull.

Last year the State could not find, nor is there a user at this time, who will agree to use or develop all the gas within our State.

(d) OMAR concluded over a year ago that we have to sell our surplus gas in order to have it back again some day. The eventual use in our State, as we stated before, the eventual use in our State of that gas should be our number one priority.

Number Four: Prudhoe gas is going to market and the routing of that gas line will be a political decision finally decided by the Congress of the United States of America.

(a) We initially started working for a royalty gas contract at the recommendation of Senator Stevens and Representative Young over one year ago. They told us the route would probably be a political decision, just as the oil line one was.

(b) El Paso's application, in our opinion, is the overall number one choice for Alaska. Let's face it, they're a pretty small company in the big picture, when compared to the forces and money behind Arctic Gas at this time.

(c) We have been urging Commissioner Martin and the Administration since last February to conclude a royalty gas sale as recommended by the Congressional Delegration. As far as we're concerned, Guy Martin took a long time, worked on it very thoroughly, and went through extensive negotiations. We believe that last April 14 the contracts were almost signed and would have possibly been included for review by the last Legislature, but they were not completed until this November.

A sale, to be most effective for our State, should have been concluded, in our estimation, last spring. It has taken twelve months to get this contract before you in the steps it's in. Six to eight months from now it will all be over, the decision for the routing will have been made.

(d) The FPC Judge stated many times during the testimony and asked, "What's Alaska going to do with its gas? Is their gas going to go into the system? Are they going to keep it?" This contract you have before you was entered into the FPC record in its rough draft on the last afternoon of the last day before public testimony was closed.

(e) If all the gas goes to Arctic and if our State found no new reserves for some reason, wouldn't it be something if Alaska ended up some day like Louisiana, some years hence, with a shortage of gas? It's not probable, but it is conceivable.

(f) A political decision? Alaska is using all the forces we can to affect a Congressional decision. Do you mean like we did for the oil line? Or like we did for Statehood? You bet we are! If we don't stick up for our own state, I don't really think anybody else is going to.

Here are some of the letters we have received from Senator Stevens, Senator Gravel and Representative Young dated November 2, November 5 and November 17, 1976, mandating a royalty gas contract.

MS. EASLEY: Last fall when we were getting pretty nervous about whether the royalty gas contracts would be concluded in time to be included in the FPC record, we asked Don Young and Ted Stevens and Mike Gravel to meet with us, and we did separately. And we asked them each a very important question. We said, "Do you still consider the royalty gas contract critical to the success of the Trans-Alaska gas line."

Ted Stevens told us that if we did not have the royalty gas contracts we didn't have a chance to win. Don Young said the same thing, and Mike Gravel said the same thing in different words. So we were convinced then, as we are now, that that is the most important thing that we need in order to do our job in committing the funds that have been contributed to our organization to carry this fight to the nation.

MR. PENNEY: November 2 in a letter to Honorable Jay Hammond from Mike Gravel: "In response to a request from the Organization of Management of Alaska Resources, I am putting on paper my position with respect to the commitment of Alaska's royalty gas. I have enunciated this position on numerous public occasions, both in Alaska and

Washington, D.C. Without doubt, the commitment of Alaska's share of the Prudhoe Bay natural gas could bring us allies in our cause if only because the beneficiaries would thereby have a proprietory interest in the success of our endeavor, designation of an all-Alaskan gas line."

November 5, in a letter from Senator Stevens, to Paula Easley at OMAR: "Dear Paula: I am writing to confirm to you my feelings that Alaska's royalty gas should be committed so as to pick up as much support as we possibly can gain in the Congress, in the South and in the Southwest. As you know, I have not expressed any opinion on the question of that share that any respective purchaser receives. However, these commitments will only make sense if they are associated with support for the all Alaskan line, and to get that the share to the new supporters must be credible." That's the time when we were being asked by, for instance, Senator Stevens wanted to see Tenneco, I think, at the time get it all, and Senator Gravel was thinking that El Paso should have gotten half. But it was a decision of what the percentages was, was left up to the State Administration. In fact, we didn't make any comments because we don't think that's within our vein.

"The recent report of the Berger Commission's staff recommendations (continuing with the Senator's letter) reinforces my feeling that we have a real chance to win, and when the review of Alaska's gas transportation system comes before Congress we will need all the help we can get."

November 17 from Don Young to the Honorable Jay Hammond, in addition to a wire he had sent the prior day. "It is timely that the State has taken this action to achieve the goal of an all Alaskan route and to preserve the State's option for use of its royalty gas in the State. In the past, FPC Hearing Judge Nathan Litt has repeatedly inquired about the disposition of the State's royalty gas. It has been argued that if the State sold its gas it would be an unrefutable indication that the State is willing to do all that is in its power to commit itself to an all Alaskan route. Now at last this is the case and any reservations on this point can be swept aside."

Political decision? It is. If we don't listen to and seek the feelings of our Congressional Delegation as to what should be done on an issue decided in Congress, then who should you ask.

Number A: I would like to take a moment out at this time to do the same thing that Russ did, and I would like to publicly say how much I thought Bob Ward's testimony was really right on the button yesterday, and he renewed my respect for him so much -- that he just told it like he really thought it was. I thought that was probably one of the nicest presentations I ever heard anybody give, particularly when they've got to have the least desired position of anybody involved. I thought it was well done.

We concur with that thinking. We thoroughly endorse the concept of these contracts. As we said, it's taken twelve months to get this far. We weren't privy to the negotiations. When last April we asked Commissioner Martin how negotiations were to be handled he told us no one was going to be involved but the four companies and the State. We understood and agreed. It took almost seven months to conclude these negotiations.

We really can't answer the questions as to the technical terms and things that you've heard now. The only thing that we can do is address ourselves to the concept of the contracts, which was initially told to us by the Congressional Delegation.

We have some concerns about the switching clause, and we've dicussed it at some length. We have a couple of suggestions after, if you want to. It's hard now for us to judge what's going to be hindsight in two to three years from now, and I'm sure it was awfully hard for Commissioner Martin and the attorneys to judge now the best contract to draw for probably 1982. But I think from testimony I've heard here, I think the contract is probably as well done as it could have possibly been.

After all our encouraging Commissioner Martin to finally conclude a sale, we have to admit we think on an overall basis the contract really exceeds in many ways our best expectations. We think overall that he's done a fine job and actually has done the best he possibly could for our State, particularly under the circumstances.

One of the points that, as we understand it -- in essence if this contract is inked and it goes for approval, or if it doesn't go for approval but if Congress eventually approves the all Alaskan route as it's proposed, as we understand the contract, the next day our Governor could say, "We have the route now; however, we have an in-State use for the gas and two years from now we're going to take it back," and then two years hence, even before the line is even built, before it's ever constructed, we can cancel out the terms of the contract. I just have a feeling that there's got to be a little faith on both sides, because I don't know how I'd sign it if I were a gas company. But evidently they did think it was all right.

One other point that hasn't been brought out and I don't know why they don't want to talk about it, but I'm going to talk about it because I think it's very important. But El Paso, in essence, and I think you'll find that as we go into this the next six months and some more testimony, if you want it, will show that the financing of either one of these three routes is going to be one of the major critical things, and we think at this time it is the major critical stumbling block for Arctic Gas. And we have testimony, if you want to review that further.

But El Paso, in essence, has already got twenty-five percent of their system financed, as we understand it. Their tankers are going to cost 1.6 Billion Dollars, which is a quarter of their project, and under the Maritime Act (I don't remember the name of the Act) there is a low interest rate available for that, and also in a Federal insurance. So, in essence, they've already got twenty-five percent of their package cut and done. I don't know if that's been brought out before, I don't think it has.

In summation, don't forget, we won't have any accessible surplus of royalty gas if Arctic is certified, and I really think people lose sight of that. We will just have dollars of revenue from then on, because Mrs.

Jones is going to be cooking eggs in Ohio for the next twenty-five years with our royalty gas.

And (b), we think this is almost as important: if either Canadian line gains approval, you will then have an established corridor from the heartland of our State funneled directly to the South 48. If we ever want or choose then to see Pet 4 or other resources used or developed within our State, the chances of doing so will become much, much more remote. Whatever you do with this contract, somebody, some day is going to buy a portion of our surplus royalty gas, and we think that if El Paso, Southern and Tenneco would be foolish enough -- they would be foolish, they'd be unfair to their stockholders, and less effective for Alaska if they publicly review their game plan for approval of the Trans Alaska line. If they do, they're almost sure to read again about it in Jack Anderson's column or else somewhere else in national print. If you haven't heard about the column, I'll tell you about that.

They are large companies, they need the gas, and "no ticket, no laundry." If they don't work with us they very probably will get no gas. So we have to have some reliance on their ability to perform.

(e) To me, personally, this contract is also important nationally, as it's like the tapping of a pencil on the negotiating table by the State of the Far North, that we're not asleep, we are interested in our own destiny, we do want a say in the use of our own natural resources, in our way of life, we do want to get off the Federal dole, and we do want to direct our own heritage.

We have over one hundred and fifty press clippings. Somebody asked if this was going to be news across the nation, and I'll let Paula enunciate on that. This news of the royalty gas sales has already been in most of the major papers in the United States.

MS. EASLEY: I'm sure most of you are aware of that, and unfortunately it has been reported and accepted as an already concluded situation, and quite a few of the articles have mentioned that the contracts do have to have the stamp of approval of the Alaska Legislature. But the way it is stated, it's just been that it is an assumed fact. And we are concerned about this element of it, should the contracts not be approved, the effect of that at the national level in indicating to the public and to the Congress that Alaska is not behind the proposal that it professes to be, and that eighty-five percent of its citizens say they are.

MR. PENNEY: Last, review, assess, discuss, make sure it's right for all of us, if you have to, this contract. The final terms are in your hands. But, if you will, pass it out as soon as you can with a large majority. Affirm and then make it your first step in the fight for our own gas line.

Then second, (that's the first step) pass an appropriation bill to be used nationally in an effort to tell the Alaskan side of the story, that the all Alaskan U.S. route is the best one for all of the United States.

Then thirdly, we respectfully ask that you do everything you can legislatively to see that it's "easier" to go through Alaska with our gas than through the middle of another country.

SENATOR RADER: Thank you both. Any questions? Senator Huber.

SENATOR HUBER: One short one. Bob, you didn't agree with Bob Ward's testimony so much as to agree with his bottom line, did you, that it wouldn't make any difference?

MR. PENNEY: No, John, but if you'd like to -- some of the points he brought out we think were very valid, particularly as far as the part that gets into problems in Canada, and we researched those very thoroughly. We subscribe to two clipping services from Canada, and it keeps one person busy just reviewing those, and we think we have a pretty good grasp or feeling for what is taking place in Canada, at least as far as the press reports. And if you want to get in and talk with some of that, we can tell you where we think some of the tough parts and some of the good parts will be.

SENATOR HUBER: You at least agree that he was very candid?

MR. PENNEY: Yes, sir.

SENATOR HUBER: As far as the last line -- I wanted to be sure you didn't agree with his last line.

MR. PENNEY: That's true, John, but I was very impressed with his testimony. One other aside, there has been some mention in talk made about the treaty here, and last February 1, I believe, Aron Tussing brought this up, so we will be able to see how his suggestion worked. But February 1 we sent a letter to Senator Gravel, Senator Stevens and Don Young, and in essence said this, that while we understand that the U. S. and Canada are agreeing to the treaty in which no line will be taxed any different than somebody else's line, as we all know the -- just let me read the paragraph. "We at OMAR are concerned that the provinces through which the Arctic Gas or Alcan Pipeline might pass have not ratified nor endorsed this treaty between U.S. and Canada. We are all aware the provinces of Canada have unusual taxing powers when compared to those enjoyed by each of the states of the United States. We ask that you consider a proposal requiring each province through which a Prudhoe Bay gas line might pass to give a written pledge to support these treaty provisions before the U. S. Senate ratifies the treaty itself."

SENATOR RADER: Any further questions? Senator Sumner.

SENATOR SUMNER: You mentioned an appropriation. Did you have a figure in mind or have you gone through some other channels with that?

MR. PENNEY: Senator Sumner, Mr. Chairman, yes, we have. We've projected out two or three different things that could be done. But if the State were to hold down its expenses as closely as possible, we think it's going to require a Three Hundred Thousand Dollar contribution just on the part of the State itself to do any kind of effective job. But there are so many things we could be doing in the next six months to try and win this thing. There are so many avenues we could explore. We've asked the Governor, and Lowell Thomas is going to take another trip now for thirty days. We have to raise the funds to take care of his airplane tickets. He was very effective last time. He's written letters to every one of the other Attorney Generals throughout the United States -- or Lt. Governors, excuse me, asking them about the Alaska route. There's an awful lot we could be doing. We're going to have two more flights going back to Washington, D.C., about a hundred and ten people, later on this spring and early summer, as soon as our Delegation tells us. And there is so much we could be doing, but if we don't start doing it, and if we don't start doing it right away, and really if we do nothing, and we get nothing, that's just about what we deserve.

SENATOR RADER: Any further questions?

MR. PENNEY: Thank you very much.

SENATOR RADER: Thank you very much. We have a number of exhibits that we need to introduce. Let me just identify them. We have a letter from United States Senator Mike Gravel supplementing his wire of several days ago. That will be Exhibit 20. I won't read it, it will be attached. Exhibit 21 is a series of correspondence including a letter from the Lt. Governor of the State of Alabama, a letter from George E. Smith, Alaska Chapter of Associated General Contractors, a letter from Robert L. Hardick, Anchorage Chamber of Commerce, a telegram from A. L. Swalling of Anchorage, Alaska, a telegram from J. A. Sproul, a telegram from Richard L. Maullin, a letter from Mrs. Jeanne Wilson, President of Greater Fairbanks Chamber of Commerce, a letter from George Easley, President of the Easley Construction Company, a telegram from James T. Jefferson, of Jefferson Enterprises, Detroit, Michigan. Most of these were responses to our invitation to come and testify, and they sent written letters or telegrams expressing approval or disapproval of what we were doing. I don't intend to read them but I intend to make them a part of the record; so that will be Exhibit No. 21, called miscellaneous correspondence.

(Whereupon Exhibits 20 and 21 were duly marked.)

Do we have any other ---

SENATOR HUBER: Mr. President, may the list to whom invitations were sent to be a part of the record?

SENATOR RADER: Senator, I don't know that we can do that. Representative Gruening's office, I know, sent out some and my office sent out some in two different groups that had some overlap. I'd invite you to come to my office. We've got the letter from the Legislative Affairs people, and, Elke, maybe you know more about those lists than anyone. Would you explain to us what ---

MS. KALLAB: Yes, to the extent that I can. As far as on the Senate side, the list that we initially began with was furnished to us by the Department of Natural Resources which are used as lists as far as Oil, Gas and Royalty Board invitation lists. Those are the three lists we worked from.

As it turned out, in the confusion, everybody got an invitation. So I don't think we've lost anybody from the Department of Natural Resources that has been on that side.

On the House side, as far as Representative Gruening is concerned, I know that he invited several people that were also invited by Senator Rader, namely Dr. Tussing, and in addition he invited Dr. Michael Scott to testify for the joint hearings here. I don't know, but I'm sure aide, Brian Rogers, will have a complete listing as to what other invitations were issued, either verbally or by writing.

The material that went out through Senator Rader's office is very readily available and could be very easily made a part of the record.

SENATOR RADER: Without objection, I will make available a list of the invitations sent out by my office, and it will be marked Exhibit No. 22. Representative Gruening, do you want to supply such a list for Exhibit 23?

REP. GRUENING: That's fine.

(Whereupon Exhibits 22 and 23 were duly marked.)

SENATOR HUBER: My only reason for the request was so that the record should show that we had invited a large cross section of people so it couldn't be said that we had a selected list later on.

SENATOR RADER: Fine.

REP. GRUENING: Mr. Chairman, in that regard you might want to put another exhibit, and that is newspaper ads that were run by the joint committees, and we might even get a proof from the paper to attach so they know the dates.

SENATOR RADER: How many newspaper ads were run and in what newspapers?

REP. GRUENING: Daily News Miner, the Anchorage Times and the Daily News.

SENATOR RADER: One ad or several ads?

REP. GRUENING: Two days in each paper.

SENATOR RADER: If we can find a copy of that, that will be supplied to the reporter as Exhibit No. 24.

(Whereupon Exhibit 24 was duly marked.)

SENATOR RADER: Do we have any other requests for exhibits to be attached? We have one final exhibit, No. 25, which will be supplied by the Department of Natural Resources, and with that I take it that concludes our joint hearings; is that correct?

(Whereupon Exhibit 25 was duly marked.)

REP. GRUENING: Do we have the relevant statutes attached in there?

SENATOR RADER: No, we do not. Exhibit 26, would your office supply what you consider to be the relevant statutes?

REP. GRUENING: Sure.

SENATOR RADER: Exhibit 26 will be the relevant statutes, to be supplied by Representative Gruening's office to the reporter.

(Whereupon Exhbit 26 was duly marked.)

SENATOR RADER: Ms. Easley.

MS. EASLEY: I'm sorry, I just gave the reporter some telegrams and letters from other organizations that had asked us to speak on their behalf. Can she just do that, write them in?

SENATOR RADER: I'll make that Exhibit 27, it will be called miscellaneous correspondence and written testimony submitted by OMAR on behalf of others.

(Whereupon Exhibit 27 was duly marked.)

SENATOR RADER: Are there any other exhibits that should be made a part of this written record? Ladies and gentlemen---

REP. GRUENING: John?

SENATOR RADER: Yes.

REP. GRUENING: I know you want to get out, but what are your plans for talking to the Department of Resources people?

SENATOR RADER: Mr. Boness was scheduled to leave Sunday for Washington, D.C. and be gone for several weeks to work on the Federal Power Commission brief. Commissioner Martin has submitted to both you and I a schedule of his activities. It appeared to me that if we did not meet with him Monday -- Mr. Boness agreed to stay over and Mr. Martin agreed that Mr. Boness' presence was important if he was going to submit any rebuttal testimony -- it appeared to me that if we did not meet Mor[illegible] [illegible]t might be several weeks before we could meet aga[illegible]

It was my judgment and it was my feeling, as the chairman of our committee, and I've announced it in the Senate, that we will meet with Commissioner Martin and Mr. Boness of the Attorney General's office, and whomever of their staff that they deem important, to take any supplemental, rebuttal or additional testimony that they think has been brought o[illegible] by any of the testimony that has been presented thus far.

REP. GRUENING: What time?

SENATOR RADER: 10:00 o'clock, here.

REP. GRUENING: We normally have a session. We'd like to attend.

SENATOR RADER: Our problem is our session. I scheduled it for 2:00 o'clock. As I recall, I talked to you and I thought that you were not interested in this, so I scheduled our session for 2:00 o'clock.

REP. GRUENING: It was my understanding it wouldn't be part of the record.

SENATOR RADER: It will not be a part of the record.

REP. GRUENING: But it is from your prior statement that they will be submitting something and you're taking testimony.

SENATOR RADER: They will submit written testimony or whatever they think is important for this record, and I don't know what that's going to be. But our committee wanted to hear from them and didn't want to wait two weeks for it.

REP. GRUENING: Well, I'm wondering -- I haven't talked to the rest of the committee, but there might be some interest in talking to these folks if it's going to be on the record.

SENATOR RADER: I did not plan to have the reporter here; in fact, the reporter had asked to be relieved. I did not intend that it would be a part of the written record. If you are interested, let's make it 10:30, if we could do that.

REP. GRUENING: Whenever.

SENATOR RADER: All right. Now let me ask you this: if you wish, we can make that a part of the joint hearings and ask the reporter to come back. I don't know whether the reporter can or not.

REP. GRUENING: I don't know if that's necessary, but as long as Mr. Boness is going to be here especially for that, we might as well make it a half an hour later and we'll all attend.

SENATOR RADER: All right. Then I think we should continue the joint hearing, and I will ask the reporter then to come back at that time. I understand we have the courtroom committed to us at that time, 10:30 Monday, and I'd like to ask the staff if they will make certain that is posted on the bulletin board; my own staff if they will contact the Department of Natural Resources and inform them, and try to get a page over here from the Senate, or send a page over here at a quarter to 10:00 to inform people who come here for that purpose that the hearings will not commence until 10:30, and to see that order is preserved in the courtroom.

We will adjourn until 10:30 then Monday.

(Whereupon the hearing adjourned at 6:05 p.m.)

RADER

2/4/77

FEBRUARY 4, 1977

SENATOR RADER: The joint hearings of the Alaska State Legislature relative to the sale of royalty gas will come to order.

We've been asked to announce that smoking in the courtroom is absolutely prohibited, and no beverages are permitted in the courtroom, or food either. I don't know if that's any problem, but if it is, be advised.

Today, as we announced yesterday, we're going to go first through our experts, the committee experts that have not yet testified. At the conclusion of that testimony we will consider further public testimony. I'll leave it up to the committee at that time to decide what they want to do, if they want to reopen public testimony at this time, or else request those members of the public who have not testified to submit their testimony independently to the Senate Finance, or Senate Resources Committee, or to the House Resources Committee.

This will be the last session of the joint hearings. Representative Gruening will hear from the Department of Resources and such others as the House determines, I guess next week or thereafter, at their pace; and the Senate will do the same, except that the Senate Committee will at least reconvene here at 10:00 o'clock Monday morning, primarily for the purposes of a review and a rebuttal by our Department of Administration, Attorney General's office, and whatever, concerning misstatements that may have been made or positions that are unclear, and also submit themselves to questions by the committee members and, of course, other Senators on any questions of which we have reason to question their earlier statements or need clarification.

Representative Gruening, did you have any further announcements as to your committee?

REP. GRUENING: I guess not.

SENATOR RADER: We'll first take up Dr. Carl Swanson. Doctor, would you please identify yourself, give us a resume of your background, your position, and I would suggest that you go through your report and outline to us those portions of your report which you think are most important to us, and then open it up for questions. Would that be appropriate with you?

DR. SWANSON: That would be very appropriate. I have some remarks that I've outlined here which I'd like to give to summarize the report, as well as a few remarks on issues that have been raised during these hearings upon which I'd like to comment. Would that be appropriate for me to do?

SENATOR RADER: That would be appropriate. I'd like to have your background read into the record first.

DR. CARL SWANSON: My name is Carl Swanson, I am Executive Vice President of Jensen Associates, Inc., which is an economic consulting firm with offices in Boston, Washington and Geneva, Switzerland. The company specializes in economic analyses, forecasting, pricing, analysis of investments, advice on contracts, occasionally testimony before various Congressional regulatory bodies, or Legislative bodies, in matters of world oil, natural gas, natural gas liquids, and occasionally some work on electricity prices.

My educational background is at Massachusetts Institute of Technology where I received a Bachelors Degree in Economics and Engineering, and a PhD in Management. I taught for five years at the Sloan School of Management, at M.I.T. as an Assistant Professor. More recently I have been a consultant, since that time.

In my consulting, relevant to the issues that you face, I have assisted in the staff work, backing up, price negotiations on long-term LNG projects, I have performed analyses for computer simulation models of the logistics of moving LNG from the liquefaction line across the Atlantic Ocean to receiving terminals, into distribution systems, and to the burner tip. I have assisted industrial buyers under Order 533, analyzed supplies of natural gas and contracts that are offered to them. We have assisted producers in analyzing their contracts, producers in analyzing their gas contracts, in order to see if they're well protected. I have looked at supply and demand of natural gas in the United States and impact upon curtailments. I have forecast the world-wide supply and demand to 1985 of propane and butane, that is liquefied petroleum gases, and lastly, relevant to your concerns my firm and I have analyzed the gaseous fuel markets in the states in the northeast quadrant of the United States in order to see the impact of price upon the demand for natural gas and for propane by industrial consumers.

That's my background, and I think what I'd like to do is briefly summarize the report which has been, I believe, distributed to the committee and is available to anyone else. Should I identify this report, Mr. Chairman?

SENATOR RADER: I would like to have the report made an exhibit in our proceedings. Would the reporter inform us as to the exhibit number.

MS. SANDERS: 16.

SENATOR RADER: Exhibit No. "16" will be the "Economic Analysis of Alaskan Royalty Gas Contracts" to the State of Alaska by Jensen Associates, Inc., consisting of some forty-four pages, dated January 1977. Therefore, any matter which the Doctor omits in his testimony will be available in the supplement, or in the exhibit. Would you proceed, Doctor?

(Whereupon Exhibit "16" was duly marked.)

DR. SWANSON: First let me summarize the report. There is a summary of the report on the first four or five pages, which you may already have read, and I will essentially go through that summary.

Let me first, before I continue, identify who I'm representing. We were hired, Jensen Associates, Inc., were hired by the Legislative Affairs Agency on behalf of you ladies and gentlemen, the Legislature, to assist you in analyzing the contracts that you are now considering. Our mandate was to see if the contracts protect the interests of Alaska. We did not address ourselves to the legal issues; we confined ourselves to economic issues as appropriate to business ---

SENATOR RADER: Excuse me, Doctor, let me interrupt you. I do see some members of the Legislature, and I want to invite you to seat yourselves at the front tables here, if you would care to. It will be easier to participate in the questioning and also address the witness.

I'd ask, do we have a page. We're supposed to have a page here. When we get one I was going to ask the page to invite other legislators who may come in at a later time to come forward.

Proceed, Doctor, I'm sorry for the interruption.

DR. SWANSON: Thank you. We looked at this contract from two points of view, or we asked two questions. One question we asked was, if the El Paso project is not approved has the State preserved itself the right to protect its royalty gas and interest through provisions which allow it to terminate the contract. The answer to that question is yes.

The second question we asked is, if the El Paso project or any pipeline project which the Governor would like to support is approved, does this contract protect the economic interests of Alaska; that is, if this contract is in force is Alaska protected. We examined three different respects in which Alaska might be protected, and one of them is, can Alaska use the gas within its own state. Secondly we asked, are its interests in the natural gas liquids protected. Thirdly we asked, will Alaska, under the terms of this contract, receive a favorable price.

Let me take those questions in order. First, I think this contract has extremely well designed provisions to allow Alaska to reserve natural gas from Prudhoe Bay for its own use. The terms on reservations are unambiguous, and Alaska with what I consider to be short notice, two years, can take back to itself one hundred percent of the royalty gas.

Secondly, there is a provision in the contract which allows Alaska to exchange royalty gas for gas which may be more proximate to its markets and use the royalty gas, taking back the royalty gas in paper at least, in order to trade for gas which may be more available to it. This exchange provision provides a great deal of flexibility to the State of Alaska.

Thirdly, the provisions of the contract do not set any limit to when in the future the State could determine it will need the royalty gas which is in Prudhoe Bay. I interpret this to mean that the State could decide today or sometime when this contract is in force five years downstream gas which is currently being delivered, or part of the gas which is currently being delivered, would be needed in the future and thus Alaska, as I interpret this contract (and you probably should ask others about this) could at any time reduce deliveries to the purchasers. Now, since the Prudhoe Bay field has a gas cap, it would appear to me -- I am not a reservoir engineer and your reservoir engineers could comment on the reality of what I'm about to describe -- but it seems to me that Alaska could work out a deal with the producers to reduce slightly the production of gas from the gas cap and, in effect, store Alaska royalty gas for future years.

The second question we've addressed is, are the rights of Alaska to the natural gas liquids well protected and the answer is, I think very well protected. Alaska has the right to extract ethane and heavier components at any time before or after delivery to the purchasers. I would interpret this to mean that if a gas processing plant were to be built in Canada or the United States and the liquids extracted there, that the rights of Alaska to the liquids would still be retained. I would suggest you ask Mr. Moody the same question.

Furthermore, within the contract, statements on quality of the gas of the contract, I saw no limitations to the btu content of the gas delivered to the consumers. To be sure, there is a price adjustment clause built in the contract for the btu content of the gas, but I believe there is no quality limitation to the delivery of methane or the natural gas which would restrict removal of liquids.

Third, I think the more important question and lengthier analysis in our report, is what price will Alaska receive for its royalty natural gas under the terms of this contract. I think in order to understand the terms of this contract as written I need to review for you very, very briefly what I believe to be the course of energy prices over the terms of this contract.

This contract has a term of twenty years, beginning upon initial deliveries of natural gas, which will occur sometime close to 1985 very likely, meaning this contract will exist from sometime around 1985 to about 2005. As we look downstream at the price of energy in the world, I think most energy consultants agree that the Organization of Petroleum Exporting Countries is not likely to lose control of world oil pricing between now and 1985 certainly. I think most agree that the price of oil will continue to increase in world markets. I think the price of energy within the United States is going to rise more rapidly than the price of world oil, largely because at the current time the price of energy in the U.S. is controlled below world levels. As these controls are relaxed, particularly as more and more new oil, as it's defined in the regulations, is produced, and as more imported oil is brought into the United States, the oil prices should increase in the United States more rapidly than world oil prices.

Secondly, I think that it's very clear that there's a consensus developing in the United States that the conservation of energy is a very, very important national objective. There is yet no means that have proven to be effective by which this conservation is to occur.

Europe and Japan have imported oil in great quantities for many years, and they have very actively for many years used taxes to increase the price of energy to their consumers in order to force conservation and this conservation, through the use of the price mechanism, has proved to be effective. I would expect the U.S. would begin to follow such policies of using prices to bring about conservation.

In sum then, I think that to 1985 we should within the U.S. and the world see increases in the price of energy. After 1985 we believe, Jensen Associates, Inc. believes, there is a very good likelihood, as long as industrialized nations do not fall into worldwide depression, that the production limits of the OPEC nations will begin to be strained by the demand for oil in the industrialized nations, and the chances after 1985 for very sharply rising prices will exist. Between now and 1985 we would expect oil prices to essentially track inflation in the industrialized nations.

This is the price scenario under which we need to examine the price terms of this contract; that is, prices rising gradually to 185 and with sharply rising financial prices thereafter.

The question is, do the price terms of this contract protect the interests of Alaska, its revenues essentially, with sharply rising prices after 1985. I think the people who framed the contract recognized that there is a fair amount of uncertainty about energy prices, which there are, and they designed the contract to adapt to prices established outside the contract. There is not a price, there is not a set price, a certain number, in this contract for royalty gas. But prices are established within the contract under two different types of regulation that may occur in the future. One of them is deregulation.

If the price of natural gas at the wellhead is completely deregulated the terms of this contract, in my opinion, protect the interests of Alaska well. There is an annual redetermination clause which has been clarified by the purchasers as applying to both Section 6.3 and 6.4 within this contract, which will allow the contract to try prices on the North Slope of Alaska.

Now, the North Slope of Alaska is expected to be producing oil and gas in many other locations in the future. The terms of the deregulation clause in the contract allow the price to attract the highest price paid on the North Slope. One would expect that there will be continuing discoveries on the North Slope, and under deregulation continuing new fairly well market base pricing of natural gas which will be tracked by this contract.

Under deregulation this contract protects the revenues and the prices Alaska will receive for its royalty gas in interstate commerce very well.

The second scenario one can view with a future is continued regulation of wellhead prices by the Federal Power Commission and possibly by Congress. The shape of that regulation is, hard for -- it's certainly hard for me to discern as regulation has changed from time to time with some fairly sharp shifts. Mr. Moody can explain that to you better than I can. We attempted to indicate it in our report.

But the contract does state clearly that Alaska will accept the regulated ceiling prices for the natural gas which the regulatory agency will set. It also says that the price that Alaska will receive for the gas will never exceed that price which the purchasers can include in their cost of service to their customer. This is the clause which protected purchasers. I would assume that the contract could not have been written without that clause in it. It essentially says that, given the very large volumes of gas which we're discussing in these contracts, that the purchasers will not have their shareholders pay part of the price of the gas if the regulatory agencies do not allow the full price of Alaskan royalty gas to pass to the consumers. I think it is probably likely that the purchasers would not have signed the contract without such protection for their shareholders and their bankers.

Now, Alaska under regulation, you and anyone else who attempts to understand what the regulated price for gas will be from Alaska, will be faced with some difficulty, and that is because the recent national rate decisions from the Federal Power Commission have clearly excluded Alaska from the national rate, both in the application of a national rate and secondly, in the calculation of the proper national rate for new natural gas. Thus, it's not clear, the precedent is not clear the calculation of the procedures which will be applied under regulation if regulation persists to this North Slope royalty gas.

In our report we've attempted to show that there is a great deal of uncertainty, very significant uncertainty about what this price might be. In 1980 if the current pricing mechanism or the vintaging of 77-A, using the vintaging of 77, and I'm sorry if I'm using some terms with which you may not be familiar, the price which might apply to new natural gas, a Dollar Fifty-Six a million btu's. But Alaska has characteristics which are very different from the characteristics of the Lower 48 States in its gas production, and that is in the calculation of the national rate the calculation is based upon the costs of finding and developing non-associated gas. The reason for this is the Federal Power Commission has had a very great difficulty in pricing associated natural gas because it had difficulty in allocating costs of drilling, exploration and development between oil and gas.

Thus, the Federal Power Commission, and there's an expert to my left and to your right who can describe it more fully than I the reasons behind it; the Federal Power Commission recently has said that the national rates for non-associated gas, and it simply said that the prices for associated gas will be equal to that calculated for non-associated gas.

Non-associated gas comprises perhaps seventy percent of the Lower 48 gas supply. Such is not true of Alaska. The Prudhoe Bay field is the largest field in North America and it has the predominance of the reserves of Alaska, and it's an associated gas field. If the Federal Power Commission were to apply cost based pricing to Alaska, particularly to the Prudhoe Bay field, you would have to face the issue of how to allocate the costs of drilling, development and exploration between the gas and the oil. The fact about the Prudhoe Bay field which is very delightful for Alaska in its sales of oil is that it is the largest field in the world. From the point of view of selling gas, if a rate were to be applied to Alaska, the fact that it's the largest field in the world may not give you the highest price because the costs of finding and developing the gas per thousand cubic feet are relatively low.

We've calculated, using some very rough estimates, and ignoring the costs of water flood that may be attributed to the taking back of natural gas and the costs of extraction of carbon dioxide, that the Alaska rate might be somewhere between Twenty and Forty-Five Cents per million btu.

The question remains, however, does this contract protect your interests in your royalty gas, and I think that we can safety say this contract is not going to influence too greatly, with one exception (I'll talk about that in a second) the regulated price of natural gas. This contract can only adapt to prices set by the Federal Power Commission or other regulatory bodies.

Under regulation, the contract clearly states it will accept the regulated price (a), and (b) it says that it can receive a price no less than the price received by any working interest owner. Both clauses, I think, protect your interests reasonably well.

However, there is one concern we had, which we described in the report, which is that most royalty interest owners, and certainly working interest owners, are usually private investors. The State of Alaska is a body different from the private investor. It has social responsibilities to its citizens.

One question that has been raised is, could Alaska under regulation claim, because of its unique responsibilities as a state, get a higher price for its royalty gas than the price given to the working interest owners. If such were true, this contract does not distinguish Alaska from the working interest owners, it clearly states it will accept that price which will be received by the working interest owners. I think you need to assess, and I would like to help you assess, the probability that Alaska might receive a higher price for royalty gas under regulation than working interest owners.

Let's do it in the following way. If Alaska were to state that it will ask for a price different from the working interest owners, and if Alaska were to ask for a higher price, I think the response could be a varied response. One response might be, and I'm sure there are some people who would make it within the courts and certainly before the Federal Power Commission, is that since Alaska has incurred no costs whatsoever in the discovery and production of its natural gas that if it wishes to separate itself from the working interest owners, it should accept prices based upon its costs, and its costs were zero. This would be unfavorable to Alaska.

The other possibility is that Alaska would claim it should receive a higher price for its gas because of its unique responsibilities to the State, to its current citizens and future generations. The likelihood of such an argument being accepted is one which I have difficulty judging. I think, however, that as we look at the decision of Administrative Law Judge Litt, he did not appear to have an attitude which would be favorable to giving the State of Alaska higher prices for its royalty gas than working interest owners were to receieve under regulation. You may wish to ask me some more questions about that point later.

Let me go on. One of the concerns of the contract that we had as we first read it was that since the State of Alaska does not collect severance taxes from itself that under regulation it might be possible for the purchasers to pay a price higher to the working interest owners, higher by the value of severance taxes, than the State of Alaska. I think the testimony certainly before these two committees by the purchasers was that right in the contract they did not intend to not pay an amount equal to severance taxes to the State of Alaska for royalty gas. Your legal staffs may need to judge whether or not you need to change your severance tax laws in order to insure that under litigation and under regulation, if regulation occurs, if in fact Alaska will be able to accept a payment in lieu of certain taxes from the purchasers under its current law.

At this point I think I have finished my summary of the contract. The contract overall, I think, is a very good contract. It does protect the interests of Alaska. There has been one clause, which I've described earlier, about Alaska separating itself from working interest owners under regulation.

The thing, however, which is very clear in examining this contract and your sale of natural gas is that the provisions of this contract do not set a price for natural gas. The price of natural gas is going to be set by forces outside of this contract, perhaps market prices. More important, they're going to be set by regulation and legislation.

If Alaska wishes to return to itself favorable revenues for its royalty gas it should, we think, focus its attention more upon regulation and legislation than upon the terms of this contract. The terms of this contract will stand Alaska in good stead, but you need to deal with regulation and legislation in order to increase your revenues from the sale of royalty gas.

I would like to comment now on several issues, three issues, that came up during the course of these hearings if it's appropriate to do so at this time, or would you like me to stop, Mr. Chairman, and entertain questions about our review of the contract?

SENATOR RADER: Why don't you go ahead and answer those questions that you think are pertinent and we will question you later on it.

DR. SWANSON: Thank you, sir. Several of the witnesses, including Natural Resources Commissioner Guy Martin, stated that, and I believe I quote Commissioner Martin, that very likely a higher price could have been attained in this contract for the royalty natural gas. I thought that was a very important statement that came out in his testimony. A number of other witnesses made the same statement.

I have asked myself can a higher price, in my judgment, be obtained than under the terms of this contract, and I must confess that I think it's highly unlikely. I think the pricing terms of this contract have been very well designed, again with that one proviso that I mentioned earlier. Let me review with you why I came to that conclusion.

I think, first of all, we must understand that royalty gas that Alaska has to sell now is 2.6 trillion feet; it's a large package of gas. I think it is possible in the future that Alaska could sell maybe a billion cubic feet in a spot market for a higher price than you will get under this contract. But a billion cubic feet is not the same as 2.6 trillion cubic feet. It is possible, for example, under certain shortage conditions to receive a very high price, but not for the volumes of gas, I think, that you have here.

It has been suggested by some other witnesses that Alaska could have received a higher price for its gas had it sold gas directly to gas distributors and then had the gas transported by interstate pipelines, and that gas distributors would be willing to pay a higher price. I think Mr. Moody should discuss this with you more than me, but it is my impression of the Natural Gas Act that if a gas distributor in Boston or Chicago who is not now subject to the jurisdiction of the Federal Power Commission, if that person were to purchase gas in Alaska, move that gas across state lines and resell it in the Lower 48 states anywhere, that gas distributor would be subject to the jurisdiction of the Federal Power Administration. I think no gas distributor would subject himself to such regulation and thus would not purchase gas directly.

Secondly, it was stated that Alaska may be able to receive a higher price for gas if they were to sell it directly to an end user such as, I believe Pacific

Gas and Electric was mentioned, or large industrial consumers of gas. Again, I think Mr. Moody can comment on this with greater knowledge and with greater competence than I. It's my impression, however, the Federal Power Commission currently does not allow direct users of natural gas to transport gas through interstate gas lines for their own use except under Order Number 533. Order Number 533 is a very highly restrictive order which sets the term of any contract to two years and it says that only industrial high priority direct end users of gas may purchase the gas, and they may purchase the gas on a monthly basis, or perhaps on a daily basis, only to that extent of their high priority use is curtailed. Thus, when a winter is very cold and many home owners are burning a great deal of gas, such industrial purchasers could buy a great deal of gas. In warm winters such as we had in 1975 and '76, many industrial purchasers had their full needs of high priority gas met and thus they couldn't receive delivery of gas under direct purchase.

I don't think that any direct user of natural gas will be willing to sign the term of this contract, which says that they will take delivery as you receive delivery from the working interest owners, depending upon the gas production and upon the oil production, and pay for it because the timing of their needs for gas under

Section 533 is probably quite different from the timing of the delivery of gas from the working interest holders to Alaska and thus to your purchasers.

Secondly, let me address one other possible purchaser of your gas. It was suggested that an electric power and generation utility might be willing to purchase gas directly from you and burn it underneath its boilers. I am very, very doubtful if the Federal Power Commission would allow interstate transportation of gas to be burned, purchased in such a way, under boilers.

In fact, in some of its opinions on the purchase or the retention of gas by producers in the Gulf Coast to be used in refineries, the Federal Power Commission has very explicitly stated that gas may not be burned under boilers; in fact, it went beyond that. But I think it's unlikely that anyone who would burn gas under boilers can buy substantial quantities from Alaska or anyone else to be transported through interstate pipelines when high priority users in parts of the pipeline system in units are denied gas.

Let me go on to another issue. We have heard from two or three witnesses descriptions about the setting of price for natural gas under deregulation. The gist of their testimony has been that it's very difficult to set a price at the wellhead under deregulation. We have been asked by a major pipeline and some liquids sellers to evaluate the industrial market for natural gas in the future in order to help them make investment decisions, in the case of one company in liquified natural gas and goal gasefication and another company in import problems.

So we have gone around, I personally have interviewed plant engineers, plant managers and energy buyers of large and small companies to ask them what price will they pay for natural gas. The price of natural gas will be set by the next buyer who will buy from the seller, the distribution company. If the seller, such as Boston Gas, is really selling to homes, the person, you and I, the home owner, will pay a higher price for natural gas to be burned in our furnace, to cook with, and heat hot water than will an industrial customer. However, if the quantity of natural gas delivered by a distributor is large enough so that he is delivering gas to industrial consumers, the price that that person can pay, that the distributor can pay, will be set by the next industrial customer that he can sell gas to.

In our interviews with industrial consumers of natural gas who were sometimes burning gas under their boilers but more often using the gas in their processes -- by process use of gas I mean the melting of glass, the keeping of glass warm as it moves into bottle making machines or it moves from the annealing furnaces. The use of gas in annealing furnaces and metal working, the use of gas to heat metal for forging operations, the use of gas to dry the paint on automobiles, these are all processed high priority uses of gas.

In our review of the volumes of gas used in various locations and in the prices that these industrial consumers will pay for gas, we came to the very, very clear conclusion that there is more than enough gas in the United States, perhaps not well distributed, as we've seen this winter -- but there is more than enough gas in the United States to meet the needs of industrial consumers who are willing to pay from forty to sixy percent more per btu than they would have to pay for number two oil.

Also it is very clear that natural gas is a very easy fuel to handle, it's very clean burning fuel, it has flame characteristics which are easier to control in which one can use either fewer supervisory people or less skilled supervisory people to control the process such that industrial consumers will pay a premium for natural gas, five or ten percent, maybe fifteen percent in some cases, for process uses of natural gas.

We thus have concluded that, at least in the northeast quadrant of the U.S., which I might point out is relatively short at the moment, that in the long run industrial consumers, many of whom have already converted to dual fuel firing of many of their pieces of equipment, will pay (to pick a number) ten percent more for natural gas than they will pay for number two oil. Consequently, when we, in our report, set prices that we believe under free market, under net back calculations, will be received by Alaska at the wellhead, what we asked is in 1980 and 1985 what will the price of number two oil be to the industrial consumer.

We've estimated those prices essentially by taking Arabian like oil, bringing it over to the United States with a transportation charge, moving it either through pipelines, or certainly through import terminals, moving it to a refinery close to the consumer, putting refinery margin on the number two oil and coming up with a price per million btu of number two oil, adding ten percent, and saying, "This is the competitive price for natural gas at this industrial consumer," and then netting back, subtracting the transportation costs to that industrial consumer back to the Alaskan wellhead to come up with some of our prices.

There have been witnesses before you who have argued that such a calculation that I've just described to you is inappropriate for determining the price of natural gas, and they have argued that the so-called market competition incremental value pricing that I have just described to you doesn't apply because the Federal Power Commission and the State regulatory commissions allow new higher priced natural gas to be (so-called) rolled in or cost averaged with the lower priced, lower contractual, lower regulated price gas they receive such that even if the price of Alaskan gas delivered to a distribution company were to be higher than would be competitive before sold separately, because the higher price Alaskan gas (this is the theory) can be offset by lower controlled price gas from other parts of the Lower 48 States, that the distribution company could pay more than competitive prices for Alaskan gas, and still be able to sell its gas.

I understand the theory behind such an assertion, and the theory is a sound theory. And to be sure, today, in some fuels markets, propane specifically, where today prices of propane are controlled for some companies far below market values, those companies will go out and buy high priced propane, foreign propane, mix it in with their -- at least on their accounting bases, mix it in with their cheap domestic propane and they will be able to sell; they can pay a higher price for foreign propane.

But these purchases are a purchase of a ship-load, and they'll sell the high priced propane within three months, purchase which may exist over a quarter, the next calendar three months. The contract we're talking about is a contract to purchasers of natural gas which will begin close to 1985 and will run for twenty years. So we really must look at the price of natural gas between year 1985 and year 2005 in order to estimate the applicability of so-called rolled in pricing to the distributors to allow Alaska to receive a very high price, a non-competitive, non-market based value price for its gas.

You should be reminded that other sources of natural gas, the distribution companies in the Lower 48, are such projects as coal gasefication, which is very high priced. A number of transmission companies are now importing liquefied natural gas. Some of the price escalation clauses in those importation contracts for liquefied natural gas, I believe, will generate some fairly high prices for that liquefied natural gas. And so on to rolled in pricing, the rolled in pricing of Alaskan royalty gas will not be based solely upon Lower 48 conventional production of natural gas, but will be based upon other alternate sources of natural gas.

I would submit that the rolled in pricing that you are likely to receive will not be substantially higher than a competitive net back price computed, as we have done so in this report. Further, when I was assisting in the negotiations of the pricing clauses a long-term LNG import project, the clear position of at least the customers was that they would not pay a higher price for that LNG than would compete with two oil. They were unwilling to take the risk that either (a) rolled in pricing could not be applied to them or (b) that there would be sufficient amount of cheap conventionally produced low price controlled, low contract price controlled natural gas to offset higher than competitive price.

Thank you, I have finished. It turned out to be a very long statement.

SENATOR RADER: Representative Gruening.

REP. GRUENING: I have one question I would like to get answered. Is it your intention to start questioning now or after lunch?

SENATOR RADER: It is ten after 12:00. I assume that the committee would like to break for lunch and come back at 1:30. That seems to be the consensus; we will recess until 1:30.

(Whereupon the hearing recessed at 12:15 p.m. and reconvened at 1:30 p.m.)

SENATOR RADER: The committee will come to order. I would like to ask the page to be certain to advise any Legislators that come in, they're welcome to seat themselves up forward here for more convenient questioning of witnesses and so forth -- and also to make certain that we enforce the "no smoking" rule in the courtroom.

We will continue, unless there is some objection, with the testimony of Dr. Carl Swanson. I believe we're in a situation for questions. Senator Gruening, did you wish to start off with that?

REP. GRUENING: I was waiting for the rest of the members to get here.

SENATOR HUBER: In that case can we take a five-minute recess, Mr. Chairman?

SENATOR RADER: I'm reluctant to do that because I'm afraid we're going to run out of time today. I'm just reluctant to do that, but I will wait so long as my Co-Chairman thinks it necessary for additional members to show.

SENATOR HUBER: I know Senator Butrovich is on his way.

SENATOR RADER; There are several routine matters that we can go through while we're waiting on other persons. We're going to conclude today the joint hearings. There will be additional testimony taken by the individual committees at their discretion at a later time, but the transcript of the record of these proceedings will be concluded today.

I am going to ask the reporter -- she has already been instructed to record some testimony out of order. Whenever such a request is made, I want her to clear that with Representative Gruening and myself. It's been asked that the expert's testimony, Dr. Tussing, be transcribed first and the other expert witnesses' testimony hired by the committee be transcribed in order of their presentation of testimony, then after that start at the beginning of the proceedings and go through them as they occur.

I'll want you to deliver -- the Department of Natural Resources will not be able to give their wrap-up testimony today, therefore, we will save the last exhibit number for them. Their testimony will be submitted in writing sometime next week. I will certify to it and deliver it to the reporter, she will append it to the original record and it will become a part of the official transcript of these proceedings.

After the document has been printed, I will ask the court reporter to certify one original copy for the House and deliver it to Senator Gruening, one for the Senate to be delivered to me, one for the Governor's office, one for the Attorney General's office, one for the Department of Natural Resources and one for each of the purchasers, to be delivered to such other persons as they may designate in writing in a communication to my office. I will deliver them to them. Is there any further suggestion as to how to handle the record?

REP. GRUENING: It might be good to put the applicable statutes, the applicable statutes, someplace in the supplements to refer to as you read the testimony, if we could include it in the report. I have a stapled copy here that would cover the statutes that deal with the Royalty Board and surplus oil and gas.

SENATOR RADER: Then we will leave open two exhibits, one being the rebuttal and supplemental testimony of the Department of Natural Resources, and the second will be statutes, and I'll leave it up to Representative Gruening and the staff to submit the statutes that you want printed as an exhibit.

REP. GRUENING: I didn't realize you intended to include further testimony as part of the joint hearings, in which case maybe we ought to participate.

SENATOR RADER: Well, I think it's important that the Department of Natural Resources respond to some of the matters that have been raised and I was just going to let them respond in writing as an exhibit. I don't know what they're going to say.

REP. GRUENING: I see.

SENATOR RADER: Although we do intend to question them personally, but our personal questioning of them Monday morning would not be a part of these hearings. But their written testimony, or their written response, if they care to make any as a part of these hearings, can merely be appended as an exhibit.

REP. GRUENING: We may show up Monday morning too.

SENATOR RADER: You're certainly welcome. We intend to go on at 10:00 o'clock.

SENATOR HUBER: Mr. Chairman.

SENATOR RADER: Yes, Senator Huber.

SENATOR HUBER: I notice from the assignment of the exhibit number 16 today, that that was the next number in line, and I note that the J. McCutcheon written testimony which I had requested be put in as an exhibit must not have got in because number 16 was the next in line. Would you please take care of that at this time, make sure that it appears as an exhibit?

SENATOR RADER: I think yesterday that we established that the secretary took the written statements of Mr. McCutcheon, that he submitted them to her and that she had intended, and does intend, to include his total statement as a part of the transcript of the verbal testimony. Is that not correct, Madam Reporter?

MRS. SANDERS: I believe that's correct.

SENATOR HUBER: We did deviate from it, Mr. Chairman, and

I wanted to make sure the written was in also.

SENATOR RADER: I just don't want you to type it twice. I observed yesterday during the testimony of Mr. McCutcheon, it was my observation that the reporter was not taking notes and, therefore, I assumed she was relying upon his statements and intended to include them in full as a part of the oral testimony given. Is that correct?

MRS. SANDERS: Yes.

SENATOR RADER: Mr. McCutcheon, does that satisfy you?

MR. McCUTCHEON: It wasn't my request.

SENATOR RADER: Senator Huber, does that satisfy you?

SENATOR HUBER: Yes.

SENATOR RADER: Then we will keep the exhibits numbered as we presently have it, with the Economic Analysis, the Jensen Report, as Exhibit No. 16, and Mr. McCutcheon's testimony will be, as I say, reproduced verbatim as a part of the verbatim transcript.

Should we proceed at this time? Any questions of Dr. Swanson? Representative Gruening.

REP. GRUENING: Dr. Swanson, the last couple days you've heard some concern expressed by the various members and Legislators as to the reason why the producers have not already entered into contracts, and various explanations have been given.

Judge Litt, in a report to the Commission in

April of 1976 attributed, at least to the producers, one of their reasons that they expressed to him for not entering into contracts, and I'm going to introduce this as an exhibit. It says, "They, the producers, expressed distress that the Commission has not yet embarked on a proceeding to establish a price for the gas and feared that an early sales contract would lock them into an adverse cutoff date under possible vintage pricing by the Commission, or the possibility of a deregulation statute being enacted by Congress." Now, would those concerns that the producers expressed to Judge Litt also apply to our entering into a contract at this time?

DR. SWANSON: The deregulation bills that have been introduced into the Congress normally deregulate new gas, and there's a definition for new gas. One of the definitions which has -- the definition that has existed in the Pearson-Benson Bill in the Senate and the Krueger Bill in the House, which were the deregulation bills which proceeded furthest in the past session, said new gas would be, among other things, gas which was dedicated to interstate commerce after some date.

Now, Mr. Moody is someone whom you should address the same question to, and I would defer to his knowledge and judgment. He is much more aware of the implications of the definitions of energy than I am. The impression that I have left, that taken away from reading some of the bills, is that Alaskan gas which did not commence flowing in interstate commerce until sometime in '85 would be classified as new gas. But it's entirely possible that a bill could be introduced which has a different definition of vintaging. For example, the currently applicable opinion which sets the national rate, 77-A, defines new gas as gas flowing from wells which were spudded after January 1, I believe it's 1976, or '75.

Some of the wells which will be producing gas in Prudhoe Bay were spudded before that and would not qualify as new gas under a spud date definition of new gas. Under regulation, or under a deregulation bill everyone runs the risk that part or all of gas will not qualify as new gas.

Probably of greatest concern to this committee would be a definition of new gas which says new gas would be gas which flows into interstate commerce from contracts which are dated after some date which would be after the date of these contracts. Now, there is some precedent for contract dating, I believe. The applicable definition of new or old gas are set in vintaging.

REP. GRUENING: This may be what the producers then are concerned about in their concern not to enter into contracts as of now.

DR. SWANSON: I would assume there are a number of questions that the producers had in their mind. There may well have been some questions about rolled in pricing versus non rolled in pricing. Certainly there were questions about vintaging, maybe some questions about deregulation. They were prepared, when they felt it to be in their economical advantage, to accept advance payments and to commit gas as they have in the past. Even though all of the same issues existed then, as they do now, they didn't. But those contracts, I do believe, did not set prices for the gas which will flow, even though they committed gas in their advance payments.

REP. GRUENING: Well, is it fair to assume that they're probably concerned about how the regulatory and legislative enactments affect pricing arrangements under the contract?

DR. SWANSON: I assume they are, and they may feel that they can exact a higher price if they wait, although I'm not sure that's the case. I think we should point out that the working interest owners have seven-eighths of the gas and the royalty interest is one-eighth of the gas. One of your concerns may be, if you commit now you will influence the price on the seven-eighths. I find that dubious.

REP. GRUENING: That isn't -- really, my question goes to, should we not have the same concerns in terms of dealing with trying to write a contract which sets price terms now as opposed to waiting, as the producers seem to be waiting, until a time in the immediate future when pricing arrangements under the FPC and, perhaps, Congress will be more clear?

DR. SWANSON: I think the risks you run, the principal risk you run is if a deregulation bill or a definition of new gas or step price vintaging of gas were to use contract date as the applicable vintage date or new gas date. I am less qualified that Mr. Moody to describe issues of vintaging and the probability that contract date may become the applicable date of vintaging.

Another question that I think you raised was, does this contract fail to protect the interests of Alaska if the royalty gas committed under the contract is treated in the same vintage as working interest owners' gas. My reading of the provisions of the contract state both under regulation and under deregulation that the price of the royalty gas will be the highest price paid.

REP. GRUENING: Do you read that as meaning that vintaging, if I understand that term correctly, is not important for us to concern ourselves with? In other words, that concern that I think the producers are expressing as to being thrown into a special category because they enter into a contract now doesn't apply to us, as a royalty owner.

DR. SWANSON: I think there is a concern. The degree to which it is a realistic concern or merely one of those very remote possibilities, I'm not able to judge except by citing some history. The real concern that you should have is the probability that vintaging will depend upon not the date of initial deliveries of gas into interstate commerce, but the date of the contract or the point the contract comes in force.

There is, in fact, in our report on page 29 a table listing ways in which gas can be defined, either vintaged or different ways in which gas is put into different price categories. In that table, and you may wish to ask some of the other witnesses about this table and its accuracy -- in this table a Permean base in Opinion 468 of August 1965 did use contract date as a method of vintaging gas.

In none of the recent national rate opinions nor the Krueger nor the Pearson, and this is the Pearson-Homes Bill, has contract date been, if I understand this correctly, an applicable vintage definition.

So we must go back fairly far in order to find contract date as applicable.

REP. GRUENING: I take it that it is possible there might be some disadvantage then if contract date became important as fixing a vintage on this gas?

DR. SWANSON: There is the possibility, yes.

REP. GRUENING: And what we're trying to establish here is just what we're losing by entering the contract, and the question I think that has been stated again and again is, aside from what we're trying to accomplish outside the pricing arrangements what could we be losing by entering a contract now as opposed to later since we're not actually at this time trying to get money for State revenue, we're trying to protect ourselves from any distadvantage by entering into this contract at this time. I think you said timing and price were very important.

DR. SWANSON: Yes. In my opening remarks, I felt that the State was well protected in this contract in the use of liquids, in the ability to reserve gas for in-state use, and I felt that the pricing provisions in the contract protected the interests of the State. I think you certainly have correctly identified a possible cost of the contract; that is, if vintaging in future FPC decisions or in possible deregulation bills or other bills in Congress use contract date as the applicable vintaging criteria, and contract date of this contract, and the date of break point in vintaging were to be between the contract date of these royalty gas contracts and the working interest owners' contracts, that's a risk.

REP. GRUENING: The problem being an older vintage gets a lower price?

DR. SWANSCN: This has been historically true, yes.

REP. GRUENING: There are some other points the producers make in here. I'd like to introduce this as an exhibit. It's a report to the Commission by Judge Litt.

SENATOR RADER: All right. That will be Exhibit 17.

REP. GRUENING: This is my only copy of it.

SENATOR RADER: Report to the Commission by Judge Litt. And the date of it?

REP. GRUENING: April 27, 1976.

SENATOR RADER: April 27, 1976, and you will deliver a copy of that to the reporter, will you, Representative?

REP. GRUENING: Maybe she can make a copy for me.

SENATOR RADER: If you deliver the original to her she can give you a copy back.

(Whereupon Exhibit 17 was duly marked.)

SENATOR RADER: Representative Parr.

REP. PARR: Mr. Swanson, we have heard testimony that, as you know, the royalty gas price is tied to the price the producers get.

DR. SWANSON: Yes.

REP. PARR: We have heard testimony that it may well be that the dollar price, let's say, shown on the producers' contracts may not be all they're really getting because they have tie-ins with some of the people to whom they will be selling and there may be, for example, a swap of some oil or gas, and other kinds of things that will not be directly a part of that contract and will not show a dollar value, but which obviously will have value to the producers. If that's true, do the contracts that we presently have, these contracts before us, protect our interests?

DR. SWANSON: I remember the testimony, I've forgotten who testified, as you just described. The concern you have, I believe, is under deregulation where there is somewhat market pricing that might apply. The reason I say that is, if regulation occurs probably the price will be held below market price, the price for Alaskan gas will be held below market price, and there would be no incentive for a producer on the North Slope to keep their prices below the regulated price, the allowable ceiling. So I think you're talking about a case which might exist under deregulation.

Now, on the North Slope or in the Prudhoe Bay area there are at least three major working interest owners, BP-SOHIO, Atlantic Richfield, and Exxon, plus some of the working interest owners are consortiums of

Amarada, Hess, and five, or six or seven different oil companies. Now, the contracts, under deregulation, in Section 6.3 and 6.4 clearly state that the redetermination shall be the highest price paid any working interest owner on the North Slope. It may well be, though I think the possibility remote, but it may well be that one working interest holder may have a somewhat lower price, stated price, in the contract under deregulation than would be justified by an arm's length not around the back deal.

However, in order that the highest price all be held down below market justified pricing would require at least six or seven oil companies to conspire to hold that price down. There are people who argue that the oil companies conspire frequently. It is my opinion that they compete vigorously. I doubt very much -- I think it highly improbable that six or seven oil companies of quite different size, who operate in very different areas of the world and very different areas of the United States, with very different crude balances and very different supplies of natural gas would find such a commonality of interest that they could even structure such a deal.

REP. PARR: I take it then, Dr. Swanson, that your answer to my question is, yes, the contracts do protect us.

DR. SWANSON: .es, they do.

REP. PARR: Thank you.

SENATOR RADER: Any further questions? Senator Huber?

SENATOR HUBER: Thank you, Mr. Chairman. Mr. Swanson, are there any other reasons which you might be able to think of that the producers appear to have for not committing their gas at this time that might be worth the State's consideration before we commit ourselves, other than you have discussed already?

DR. SWANSON: I can't think of any at the moment. If I do think of one while I'm on the stand, would it be appropriate for me to so indicate and explain it to you?

SENATOR HUBER: Yes, I would appreciate that if you would.

SENATOR RADER: I had a couple questions, Doctor. You've attended the hearings since they commenced last Monday at 2:00 o'clock, is that not correct?

DR. SWANSON: Yes, I have been here all the time.

SENATOR RADER: You've been in constant attendance at all times?

DR. SWANSON: Yes, I have.

SENATOR RADER: Doctor, considering all of the testimony which you have heard and considering the difference between possibilities and probabilities, how would you characterize this contract as to whether or not it protects the State in an overall manner or does not the possibilities of it --

not as against the probabilities of it not -- in other words, I would like to have you use your expertise to help us weigh the value of very conflicting testimony and the statement of possibilities as against probabilities.

DR. SWANSON: In my opening remarks I attempted to deal with some of the issues that were raised in the testimony which precedes mine when I talked about the issue of, can a higher price be obtained than would be obtained under these contracts in the issue of pricing, royalty pricing.

It's my judgment that these are good contracts. I think that they protect the interests of the State in the use of liquids, in its ability to reserve gas and obtaining a favorable price. Very well, given the set of probable circumstances which may emerge in the future, and there is a great deal of uncertainty about the price of natural gas, to be sure, there is -- I think Representative Gruening has identified one possible event, that is the setting of vintage dates on contract date, which hasn't happened recently, which is a risk.

SENATOR RADER: Would you weigh that risk for us as possible, probable, improbable, or whatever terms you might choose to use? Again, it's very difficult for me to know whether that risk is something that is of such a nature that we should reject the contracts or how to weight it. In otrer words, place a value on this, recognizing again that's really what you're hired for, is for your value judgment on matters in which we are not experts, on which there are conflicting possibilities and probabilities.

DR. SWANSON: I recognize that, and I think that's a valid question. You're asking me to evaluate probability of any legislative or regulatory event. Now, that is the using of contract date as the appropriate time for vintaging. If we look to recent history being in the last ten years, contract date was not used in such a way that the value of this contract to the State -- this contract compared to that with the State -- to be sure, the course of regulation and legislation is something which can be, particularly in the area of natural gas, can be highly unpredictable, as it has proven to be in the past two or three years. I would say that the chances that contract date will be used as a vintage date to the detriment of the State, if this contract were to be approved now, is probably less than fifty percent, and it may be quite a bit less than that. I'm not sure I've answered your question.

SENATOR RADER: Well, does it approach fifty percent? In other words, we signed this contract, we have a fifty/fifty chance of having signed a disadvantageous pricing contract because of vintaging.

DR. SWANSON: If I may just try to think through to myself what the advantages to advocates of various positions and the position of the Congress might be of a contract date vintaging. Let me just pause a minute and think about it, and I will respond.

Senator Rader, I frankly don't understand the history or regulation well enough to know why a contract date was used in the Permean base in case, rate case for vintaging.

SENATOR RADER: Let me ask you this: I don't want to ask you to go on record here on something on which you are not prepared.

DR. SWANSON: I would like to continue, if I may, sir.

SENATOR RADER: All right.

DR. SWANSON: The reason for using vintages and defining something called new gas is to raise the price of gas to producers so that they are encouraged and have the financial resources to explore and develope natural gas.

The reason there is vintaging is to keep the price of flowing gas down, the theory being that one does not increase the incentive to a producer to find new gas by raising the price of old gas. That strikes one as a reasonable theory.

Both Mr. Moody and Mr. Byrd have done a good deal of natural gas contracting, but my understanding of natural gas contracts (you might want to pose this same question to them) -- my understanding of natural gas contracts is that under contracts a whole reservoir, where all the natural gas under a lease will be dedicated to the sale, to the contract, often underneath the land area there will be more than one reservoir of natural gas, or often the reservoir may be sufficiently intimiable that after a while it makes sense to drill some additional wells, or it may be that in a natural gas lease, a natural gas reservoir, that after a while the well will sand up, the casing will collapse, or the well will be damaged, and thus a new well will have to be drilled; or if there is a deeper reservoir a well will have to be drilled or an old well re-entered in order to find the gas in a deeper reservoir.

If the vintaging date were the date of the contract -- remember that the whole, all of the gas underneath the lease, perhaps defined by depths, were to be dedicated to the contract, then there would be no incentive for the producer to repair the wells or to redrill the wells or to search deeper for new reservoirs. Thus, it strikes me -- the point I have is, and I guess you should ask other witnesses, is that given some of the conventions of natural gas contracting, that vintaging new gas by date of contract may impair the discovery of additional supplies of natural gas, which would be contrary to what

I understand to be the purpose of deregulation or the purpose of allowing a higher price for new gas, and thus self-defeating. If the theory I have just expounded is true, then I think that a vintaging gas generally within the United States by contract date would be unlikely.

SENATOR RADER: Any further questions? Senator Sumner.

SENATOR SUMNER: Mr. Chairman. Have you evaluated contracts between states and oil companies in the past?

DR. SWANSON: No, sir, I have not.

SENATOR SUMNER: Do you have any basis to compare or to answer a question of how does this contract for the sale of the royalty gas compare with the sale of royalty gas between other states and oil companies?

DR. SWANSON: I happen to have in my possession a very bad photographic copy of a sale of royalty gas from New Mexico to El Paso.

SENATOR SUMNER: How does this sale contract here compare in favor of the State?

DR. SWANSON: I read that contract last night, the one between the Royalty Board of New Mexico and El Paso, and I think that the sale of Alaskan royalty gas compares well. The other contract also was a soundly conceived contract, and it did not have the reservations clause that Alaska has.

SENATOR SUMNER: When you say compares well, is this contract better than, in your view?

DR. SWANSON: The contract you have negotiated is a better contract.

SENATOR SUMNER: There's some confusion in my mind. If the contract says that Alaska is going to get paid as high as any of the producers that are selling to the oil companies for the seven-eighths supply, would the vintaging determine the sale price that Alaska receives, or would the contract dates on their contract with the users or buyers determine the sale price that Alaska gets?

DR. SWANSON: I think you have posed a question which would require legal interpretation and, frankly, I had not thought of it, in response to the earlier questions of Senator Rader and Representative Gruening, because what you're arguing is that through the terms of this contract the vintaging date applicable to this contract alone may not apply. That's a very important question and I would only like to say that I'm not a lawyer, I do not have extensive Power Commission experience, and you have a witness who does. I just am not qualified to answer the question. I do understand the issue, and it's a good point.

SENATOR RADER: Let me go back just a moment then to the question I asked you. Does that change your answer to my question as to whether or not it is likely in the future, in view of the past policies, that contract date will be the determining factor in vintaging? As I understood your testimony, you said you thought it would be highly unlikely the contract date would be the determining factor in vintaging.

DR. SWANSON: Unlikely, yes.

SENATOR RADER: Now, the question raised by Mr. Sumner does not affect your testimony in that regard, does it?

DR. SWANSON: No, it does not. In fact, if anything, it suggests that at least within the terms of the contract one does not know how those terms will be interpreted in accordance with the Federal Power Commission, at least within the terms of the contract, that there is even less likelihood that contract date vintaging would apply to the price.

SENATOR SUMNER: Mr. Chairman, in response to you, that's the view that I thought.

SENATOR RADER: Senator Colletta, do you have a question?

SENATOR COLLETTA: I believe Senator Huber did.

SENATOR RADER: Oh, Senator Huber.

SENATOR HUBER: I had on your subject in response to Senator Rader I want to get back in. Now there's a second one since you came in. Senator Rader and I apparently didn't hear exactly the same way. I thought I heard you say that the chance that vintaging would be disadvantageous or that it would happen to the State was on the order of fifty percent, not very unlikely. So which way is it?

DR. SWANSON: Senator Huber, what I attempted to do was, when I said that the probability that vintaging would be based upon contract date, I said I thought the probability was less than fifty percent. I chose a number where I felt extraordinarily confident, and Senator Rader felt that, in his judgment, he needed a finer definition, a more precise statement of probabilities, and he pressed me on the point, and upon thinking about the point, in thinking about the use of contract date for setting vintaging dates for pricing, given the traditions of contracting in natural gas, did not strike me as too sensible, given the purposes of national policy in the use of vintaging. So I think that the probability that contract date will be the applicable vintage definition that dominates price under this contract is quite a bit less, it is unlikely.

SENATOR HUBER: Would you like to give a percentage of less than? You gave less than fifty before. Would you like to give us less than something now?

DR. SWANSON: Less than fifteen, less than ten percent.

SENAGOR HUBER: Less than ten percent. All right, that goes on ---

DR. SWANSON: Now, the difficulty of a number -- excuse me, Senator, I'm sorry.

SENATOR HUBER: Go ahead.

DR. SWANSON: The difficulty of a number given, such as that, is that it's a number which can assume greater importance, or it's an easy number to grab ahold of. You asked me the question straight, and I answered it as straight as I could. Maybe it's fifteen percent, maybe it's five percent, maybe it's ten percent, maybe it's two percent; I don't know, but I think when I state ten percent (maybe it's less) I think that's a fair characterization of unlikely. But remember that that ten percent would be further reduced by the point that Senator Sumner has brought up, which is that there are contract terms in the contract you are examining now which might make the vintaging which would allow working interest holders a higher price than applicable, but that's something presumably which will be worked out in the courts, and also it's something that requires legal judgment, which I would suggest you ask of Mr. Moody.

SENATOR HUBER: Mr. Chairman, that brings me to the second half of my question. Mr. Swanson, your definition that vintaging, I believe, was quite narrow here. In regard to that, have you taken into consideration the precedent that was set by the Federal Government action in disallowing

North Slope oil new status? Do you think that they might use vintaging or some other mechanism there to do the same thing with the gas that they have done with the oil that might affect the status of these contracts?

DR. SWANSON: There are two questions, I think, which we must address, and one question is, will these contracts approved now put the State in a worse position than if they were not approved, which is a very appropriate question, to be sure. My judgment is that these contracts are very good contracts and they do protect interests of the State, and that if they are approved now the chances that the State will suffer value are not great.

The second question arises, and I think it comes out of your point about the Federal Government, and that is, what are the risks to the State of Alaska of receiving very favorable value for its royalty gas and oil. Those risks are great, and I think they are legislative and regulatory risks, but by and large they lie outside of the contract.

SENATOR HUBER: Could I just draw you out a little more? You said there wasn't disadvantages to the contract. Could you conversely say , is there definitely advantages to the contract?

DR. SWANSON: The theory of examining the contract at this time, and many witnesses have testified to this, that by approving these contracts at this time the likelihood of the El Paso project being approved will be enhanced. That's the theory. I, frankly, am not competent to judge.

SENATOR HUBER: And you don't want to make a judgment of how much enhance them being chosen over Arctic?

DR. SWANSON: No, sir, I'm not competent, and if I were to make a judgment I would be doing you a disservice.

SENATORY HUBER: Thank you, Mr. Swanson.

SENATOR RADER: Representative Gruening had a follow-up question.

REP. GRUENING: Are there any advantages to the State in terms of pricing in these contracts? Let's say if we do sell the gas at a later point under these contracts, have we gained anything in terms of pricing, setting aside the question of political gain that the contract is based on?

DR. SWANSON: It's very hard to be actually sure about what the course of events will be in the future. The contracts do state -- let me step back a second. The question is an important question and I must answer it.

Royalty gas comprises one-eighth of the gas in the Prudhoe Bay field. The contracts are very clear, that both under regulation and under deregulation that the price received by the State will be the highest price. The contracts are unambiguous. I do not believe that one-eighth interest is sufficiently large to swing the value of the gas such that the prices received by the working interest owners will be less than if you waited.

For example, and let me expand on the point because I'm not sure I'm being very clear. If the amount of gas which you are selling now were enormous, more than enough to satisfy the demands in the Lower 48 States, then possibly by delaying, by not committing gas now and by having these highest prices for other people to obtain, you could depress future prices. But that's not the situation to be faced. The royalty gas interest is only one-eighth, and all of Prudhoe Bay gas, while very large, is not sufficient to solve the lack of natural gas supply in the Lower 48 States; so that your committee now does not so change the balance of supply and demand that future prices will be reduced by your commitment now. Have I answered your question?

SEN. GRUENING: If I interpret it correctly, you were saying that the contract protects us in most regards in your view, but in terms of advantages outside the political aspect of it, you don't see any -- it may be a good contract but you don't see any advantages to entering into a contract now as opposed to, say, trying to acquire these same terms at a future date, and that may be dependent upon whether, in your expert opinion, we could get these terms at a future date.

DR. SWANSON: You would require me to read the minds of the purchasing companies to determine if you could get the same terms that you have in these contracts at a future date. I have difficulty doing that. I would like to point to one section of the contract where you do have some very favorable terms, I think, and that is the purchasing companies have committed to pay the royalty share expenses upstream of the delivery point whether or not they are able to put those expenses into their costs of service. That's a good term, I think. Whether they'll agree to the same term in the future, I really don't know.

SENATOR RADER: Representative Chatterton.

REP. CHATTERTON: Thank you, Mr. Chairman. Dr. Swanson, I don't expect I'm going to ingratiate myself with you with this line of questions, but nothing personal is intended.

DR. SWANSON: You have an obligation, sir, a very important one.

REP. CHATTERTON: To bring everything into perspective, I have before me and have not a little slower than hastily read a November 30, 1976, letter addressed to Ms. Elke Kallab and signed by you, regarding a proposal to make an economic study of the gas sales contracts. That was dated November 30, 1976. And I also have before me a letter, or a document accepting your proposal that was dated December 27, I believe, 1976, and unless you're like some people who may think that they're willing to commit course money to build a pipeline before you have a contract, I doubt if you started to do much work on this problem prior to the first of the year. I'm not questioning you as to the fact that in context of what you were asked for and what you have presented is, you've fulfilled the obligation completely, and I do concur with you, with slight exceptions of your findings, that this contract permits Alaska to recall and use the gas. It does have that, it does provide the LPG protection, but you did state here that in your proposal you would not involve an analysis of the sale of natural gas liquids, in your economic analysis, does provide for a favorable price. Now, I think it's equally important to this committee to know things that you did not find in arriving at this conclusion, and obviously within the framework of thirty days there's a bunch of things you did not find out.

DR. SWANSON: There's a very large number of things of concern to this committee that we did not state, that's correct.

REP. CHATTERTON: And possibly even the economic considerations, if you had studied these things, if we had paid you more money and you had had more time, it's possible -- it is possible, if you had studied possibly a trade in kind of gas at Prudhoe Bay with like owned State gas someplace else, or State owned crude with like State owned crude someplace else, or looked to see if in any way this would be jeopardizing the ultimate recovery of hydrocarbons from the Arctic Slope, aiding and abetting the jeopardy thereof, is it possible you could have come up with a slightly different conclusion?

DR. SWANSON: Let me list for you a number of the things which perhaps are of concern which we did not study. I'm not a qualified reservoir engineer. Our firm are not qualified reservoir engineers. We did not study the question of the level of production of natural gas from Prudhoe Bay from the sedilogic sands which are appropriate. On the other hand, I would assume that, given the terms of the contract, that the State is well protected, if it were determined that to maximize the recovery of oil, gas production would need to be cut back, because this contract does not specify any minimum quantity of natural gas which must be delivered to the purchasers.

This contract does specify very clearly that the purchasers must pay for, whether or not they can pass on in their cost of service, the royalty share of facilities required prior to delivery. So I'm not really sure that our lack of knowledge of the specific reservoir characteristics apply too much to our analysis of this contract.

We did not study, and I have no judgment of the relative merits of the three proposed gas lines, for example. A good deal of testimony has been presented here, and much more before the Federal Power Commission, on that issue, and perhaps you may, as individuals, in your judgment, in your decisions about this contract, weigh the relative merits of the three gas proposals. We have not examined them, and I have no opinion, no professional opinion on it.

We did not attempt to uncover for the State of Alaska other alternate buyers of royalty gas and attempt to understand from them the terms that they might be prepared to offer to you for the purchase of that royalty gas. I presume that in a sense the Administration, under Commissioner Martin, did explore with a variety of purchasers the royalty gas and possible alternate terms; we did not.

So the question you raised, Representative Chatterton, was, is it conceivable, is it remotely possible that our analysis would be altered had we spent more time and more effort in examining these contracts and the alternatives which are applicable to you. And when I was studying physics I read in a book that it's entirely possible, it is remotely possible that all of the molecules of air in this room will suddenly rush over into that corner and we will all explode; I think that's remote.

In a contract such as this, one can over-study it. One should study to a point where one thinks one has a grasp and can offer sound judgment to a client. If we were to study, and study and study we would charge for that, and perhaps not give value for money received. I'm confident that our analysis is sound, our conclusions are sound; I can no more say that there is no possibility whatsoever of something possibly changing than I can that apples will fall up instead of down. Do I answer your question, sir?

REP. CHATTERTON: Yes, thank you very much.

SENATOR RADER: Senator Colletta.

SENATOR COLLETTA: Dr. Swanson, we have had a lot of talk about the possibility and probability of what could happen, and just taking the one aspect, the contract provisions (period), since you deal in that area what is, not the possibility but the probability of duplicating a contract verbatim to what is before us now if, in fact, we wait and see who builds what and when? I make specific reference to one section on the total take-back that we're allowed.

DR. SWANSON: The provisions for reserving natural gas in this contract are favorable to the State. The reason that the purchasers signed this contract is, as I believe Mr. Tomas of Tenneco stated very clearly, that they frankly don't think that either (a) you're going to take back that much or (b) if you do take back that much they have a good deal of confidence that Alaska will experience a number of additional discoveries of gas and under the terms of this contract they can buy that gas.

Now, if you waited so long that it became more probable that Alaska would take back the gas or that additional discoveries would not be found and other discoveries were to be committed, then perhaps you couldn't get exactly the same terms with the reservation clause as in this contract. I think I'm grasping at something that is relatively small, and I think you may well be able to get reservation clauses in the future. As good as these? I don't really know.

The pricing provisions? I think in the future -- if you were to wait I think you probably will have pricing provisions which are as favorable as these. Whether the purchasers would pay for, at their own risk, the royalty share of the costs of gathering or whatever, I just simply do not know. I think likely they might; I don't know.

SENATOR RADER: Any further questions? Any questions on this side? We'll go a second round here. Senator Huber.

SENATOR HUBER: Thank you, Mr. Chairman. I'm sure that this question was asked of other people but it was not asked of Dr. Swanson, and I would like to know his answer.

I refer generally to the provisions in the contracts that head end money, premium money, whatever you want to call it, will not be allowed or will not be paid to the State, but that the highest unit field prices, in the language that we're both familiar with is there to state that, is used. Assume now that deregulation occurs, which apparently some form of deregulation is going to occur. and the working interests should negotiate large lump sum or front end payments with smaller amounts per mcf, wouldn't our contracts then have a good chance of denying the State the same opportunity for these much higher prices that might be paid, or likely would be paid, would be unlikely to be paid?

DR. SWANSON: Senator Huber, with your indulgence may I characterize what I think is concerning you and then see if I have characterized it correctly and then proceed from there?

SENATOR HUBER: Please do that.

DR. SWANSON: Would that be an appropriate way to proceed? I believe what you're suggesting is that the provisions of this contract clearly state it shall be the highest price specified in some other contract, and that price will be in so many cents per mcf to the working interest owner. You were concerned, I believe, that potentially the value given in a contract or an interest owner may exceed the price stated in the contract, value being given to the working interest owner by an advance payment on an interest free loan.

SENATOR HUBER: Even if it's a separate document for advance payment.

DR. SWANSON: Or whatever, yes. I believe that is your concern.

SENATOR HUBER: That is my concern.

DR. SWANSON: We have the same concern in our analysis of this contract. Specifically we were aware of advance payments having been made for working interest holders of Alaskan gas. We then reviewed, as best we could, the outstanding advance payments, the ones that had not been terminated, advance payment premiums, so we uncovered, particularly the Columbia Gas advance payment agreement with, I guess it's BP and SOHIO. I'm not sure. And we asked exactly that question in our analysis. We addressed exactly that question in our analysis, would the price as quoted in the contract be lower because of a previous advance payment to a producer and, thus, not give full value to the State.

Our research, looking at the contracts between SOHIO and Columbia led us to believe that the advance payments given to the producers would not reduce the price as quoted in the contract. That was the conclusion of our research.

Let me continue. One question that can be raised is, will advance payments be allowed in the future. I think the Federal Power Commission has suggested that they won't be. A pipeline will give an advance payment -- well, the Federal Power Commission says they're not doing it now -- a pipeline will give an advance payment only if it can somehow recover the cost of using that money or that money in its rate base. If they can't put it in their rate base or they can't somehow recover it from their consumers, they're unlikely to make advance payment, because they can recover an allowable price.

Secondly, in the repayment -- I would like to say something and I think I'm going beyond my current research and competence and I'm not sure whether I should say it, subject to verification of Mr. Moody or simply not say it. I'll proceed by your judgment.

SENATOR HUBER: If it's part of my question I wish that you would.

DR. SWANSON: I'll do that, but I do want to warn the two committees that my recollection of the regulation of the law is shaky. My recollection is that the amount of gas that must be delivered for the repayment of an advance payment will depend upon the subsequently negotiated price for the gas. Thus, it is in the interest of the working interest owner to negotiate the highest possible price he can get in order to repay the advance payment as soon as he can.

If that theory or recollection were true, and you can check this with Mr. Moody, then the granting of an advance payment probably would not reduce the stated price in the gas sales contract and, thus, would not provide full value under the most favored nations clauses or the clause of deregulation in them, and in the highest price clauses under this contract.

SENATOR HUBER: Thank you, Mr. Chairman. I feel it is a little better given, the answer, from our experts rather than the oil company in this case on that one. I lay that one to rest as far as I'm concerned.

SENATOR RADER: Any further questions of Mr. Swanson? Mr. Swanson, I think you were trying to catch an airplane, were you, this afternoon?

DR. SWANSON: No, sir, I'm going to catch the 8:30 plane out tonight, so I'm at your service.

SENATOR RADER: Would you stay for the remainder of the proceedings in case questions do come up later?

DR. SWANSON: Yes, sir.

SENATOR RADER: Thank you very much. I have no particular preference of order myself. Mr. Moody, Dr. Kilgore, do you gentlemen have any idea as to a preference of testimony, your order?

MR. MOODY: Whatever the will of the committee, Mr. Chairman.

SENATOR RADER: Why don't we take a ten-minute break and let me discuss with both of you the nature of your testimony and make a decision?

(Whereupon the hearing recessed at 2:40 p.m. and reconvened at 2:50 p.m.)

SENATOR RADER: The committee will come to order. During recess I discussed with Mr. Moody and the Doctor the order of testimony, and it was the feeling that the Doctor's testimony would be more in line and more relevant to that which has gone immediately preceding and, therefore, it would be logically easier for him to testify at this time along the same lines as indicated previously by Dr. Swanson.

Doctor, of course, you're an old hand here. We all know that you're with the Levy Lipton Associates, but for the record, for those who do not know you, and who may come across this record, would you give us a full statement of your firm and yourself, and then proceed with the statement, which I presume then we would open to questions.

TUSSING

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DR. TUSSING: I just have one comment. In my opinion the report of the administration's Gas Pipeline Task Force is an exceptionally thorough, fair and objective review of the relative merits of the three competing gas transportation systems. In view of the political sensitivity of the issue and the compulsion that agencies generally have to find the most favorable arguments for the policies adopted, I think that this is a really admirable document.

There are only a few points in the report on which I would have a different emphasis and there are a number of assumptions in Dr. Knudson's report that I think were biased in favor of the kind of answer that supported the policy. But I don't think these are crucial to the main conclusions of the Task Force report, and when I start my presentation I'll summarize what I think are the principal conclusions and what the implications of those would be.

SENATOR RADER: Unless the Committee objects, why don't we go ahead and listen to your presentation and then open questions to both of you. Would that be appropriate?

DR. TUSSING: Yes.

SENATOR RADER: Is there any objection to that procedure, Committee? Fine.

DR. TUSSING: Okay. I didn't come with a prepared statement. I have some fragments of things, two of which I would like to introduce into the record. One is -- let me back up for a moment and identify myself, as you requested. I'm Arlon Tussing. I'm a professor of Economics at the Institute of Social and Economic Research at the University of Alaska. I have been affiliated with the University for twelve years. I have also served as chief economist of the U.S. Senate's National Fuels and Energy Policy Study under Senator Jackson and continue to serve Senator Jackson as an economic advisor on energy and natural resources.

During the last year I have also served as an advisor on oil and gas issues to the State of California, the Provinces of Nova Scotia, Ontario and British Columbia. I have served for a little over a year on the Royalty Oil and Gas Development Advisory Board, during the period of which the initial negotiations were -- took place on these contracts. I have given consideration in a number of forums and for a number of agencies to various aspects of the Alaska gasline question.

There are a great number of issues I would like to comment on, if I have time. I realize your time is limited and I'm going to try to confine myself to some of the high spots and then let you proceed.

SENATOR RADER: You have two documents that you wanted entered as exhibits?

DR. TUSSING: Yes.

SENATOR RADER: Would you identify those for us?

DR. TUSSING: One is an article headed "An Inkling of the Long Journey", published in "Northern Perspectives", which is the newsletter of the Canadian Arctic Resources Committee. This was published only last month but I wrote it in June. So to the extent that there is anything dated in it, you can understand that.

SENATOR RADER: That would be Exhibit No. 11, according to my records. Is that correct, Recorder?

DR. TUSSING: Yes. Oh.

SENATOR RADER: All right.

DR. TUSSING: The second paper is entitled "Natural Gas Supply Outlook for the West" and it is a summary of my comments at a workshop on economic growth in the West in Los Angeles in August.

SENATOR RADER: And that will be Exhibit No. 12.

(Whereupon Exhibits 11 and 12 were duly marked)

DR. TUSSING: The most important conclusions of the State Task Force report are generally consistent with every other important study and with intuitive common sense, and they are the following: Firstly, that El Paso's Trans-Alaska pipeline LNG tanker system would, if it could be approved, financed, and built and operated in the manner proposed by its sponsors, result in the greatest net revenues to the State treasury and the greatest increase in Alaska gross product, personal income and population. The Alcan systems impact would be second in these respects and Arctic Gas third.

Secondly, with the Arctic Gas system, if it could be approved, financed, built and operated in the manner proposed by its sponsors, would result in the lowest gas transportation costs to the Lower 48. In this respect, the Alcan system seems to be second best and the LNG system worst among the three.

The Task Force report makes one other crucial point but without the emphasis I believe it deserves. In view of the respective routes, design and construction plans, the Alcan system seems to be least vulnerable to cost and schedule overruns, and Arctic Gas the most vulnerable, with El Paso somewhere in between.

Because of the questionable viability and the financing problems of any transportation system for North Slope gas, the prospect of substantial overruns may be the most critical economic issue in choosing among them.

Moving to the contracts for a moment. I intend to get back to the problems of financing. I make no recommendation on whether the Legislature should ratify these contracts. The members should understand, however, that there is no amount of propaganda for lobbying by Alaska or by the three purchasers which will produce a decision in favor of an LNG system unless Canada makes it clear than an overland pipeline system will not be licensed or that Canada will not be able to come to a decision in the foreseeable future.

I personally expect an unbroken chain of decisions in the United States in favor of Arctic Gas by the FPC staff, Judge Litt, the Federal Power Commission and President Carter, based upon the record in the FPC hearing and the investigations of other federal agencies. I do not mean to imply that Arctic Gas is certain to be approved and to be able to build its system, but if the Arctic Gas momentum is to be broken, it will not be the result of any domestic politicking, but of some objective development. For example, a clear signal of Canadian intentions one way or another. While it is remotely possible that El Paso or Alcan might get an important endorsement somewhere along the line, what is almost inconceivable is that the United States Congress would overturn a presidential determination in favor of a Canadian overland pipeline system to substitute its judgment in favor of an LNG system.

The manifest superiority from a national point of view of the overland pipeline system as available is so overwhelming and the regional interests in the construction of such a system in preference to an LNG system is so overwhelming that the number of Congressmen, the number of State Utility Commissions and the number of Governors that the purchasers will be able to move on this is only a small time fraction of the existing lead that Arctic Gas has in this matter.

I think that it is instructive that in El Paso's principal market area that there is virtually no support for its project and in fact great skepticism about El Paso's project for a number of reasons, not least that the gas distributors do not want to be exclusively dependent upon El Paso, as they would be, for all the gas entering their market area. And secondly, they don't want the State of California to be exclusively dependent on a single point for the delivery of their gas, a point which could be interrupted by, for example, a fire at Valdez, which would leave them without any gas supply whatever as their existing supplies would have been displaced eastward into markets or, for example, in the Tenneco and Southern systems, for example.

There is simply no possibility, in my judgment, that Congress would endorse an LNG system. Particularly in the face of the cold wave that has now confronted the Midwest and the East and which will have reinforced its determination to get direct delivery of gas, and in view of the developing Westcoast glut of crude oil which is retrospectively viewed in Congress as the result of the fact that they approved the wrong pipeline in the first place for the oil.

These are circumstances that -- there is nothing which the State of Alaska can do to change. I believe it is clear the United States will favor an overland pipeline through Canada. It also seems likely, that rightly or wrongly, the Federal Power Commission, the Administration, and Congress will accept Arctic Gas argument that an early attachment of the Mackenzie reserves is in the United States' interest and that the Mackenzie route has significant economies of scale compared to the proposed Alcan system. But, the decision will in fact be made in Canada, not in the United States. The United States will accept any overland system that Canada is willing to build in preference to any alternative system.

Canada's orders of preference between the Mackenzie and Alcan routes are not so clear. There are a number of reasons why the Alcan system may make more sense to Canada and with your permission I would like to read a couple paragraphs of my article in "Northern Perspectives" on some of the Canadian reasons for favoring an Alcan system.

"The probable reception of any Alcan proposal by Canadian authorities has been a most difficult issue to forecast. A major appeal of the Arctic Gas project is purportedly its early (if not necessarily more economical) attachment to the Mackenzie reserves. Without this feature, it may be asked, what is the advantage to Canada of accommodating the United States in moving Alaska gas?"

"The attachment of the Mackenzie reserves may, on the other hand, be seen as a major disadvantage of the Arctic Gas system, from at least one Canadian standpoint. There is no particular reason why Canada should not accommodate the United States with a transit line across Canadian territory; after all, a substantial portion of Canada's oil and gas supplies transits the United States. There would seem to be little objection in Canada on nationalistic grounds to American gas moving in either an American or a Canadian-owned pipeline across Canada. The Mackenzie project, in contrast, raises the issue of an American-dominated consortium developing an important frontier area of Canada. The fact that an early MacKenzie connection is being justified in the United States by the (doubtful) proposition that it would lead to greater Canadian exports to the United States aggravates its potential difficulties in Canada. Both its timetable and logistics would be dictated by the convenience of the American interests. The native claims and environmental complications of this route are well known."

And incidentally, I expect that Justice Berger, who is the commissioner for the Canadian government in examining native claims and environmental implications of the Mackenzie pipeline, will come out strongly against the Arctic Gas proposal and against any major pipeline development in the Arctic pending the settlement of the native claims and the resolution of some presently unresolvable environmental issues. He will point out, I believe, that neither of these objections is nearly so strong with respect to a pipeline through the Yukon Territory along the Alcan route.

"The 60 trillion cubic feet of proved reserves in the western provinces", I think it's now about 62 trillion cubic feet in Alberta,"are enough to sustain the expected growth of Canadian demand plus present export" commitments "for about ten years. This would be the case even if there were no further discoveries" in Canada, "but recent exploratory results in Alberta have been rather encouraging, more so in fact than in the delta area. For this reason a decision on an Arctic pipeline carries much less urgency for Canada than it does for the United States."

In other words, Canada does not need a pipeline connection to its frontier areas for ten or eleven years even if there were no further -- to be no further discoveries in Alberta or British Columbia.

"More importantly, however, a decision today in favour of immediate development of the Mackenzie Delta-Beaufort Sea region can be seen to prejudice whether that region or the Arctic Islands (where recent exploration seems to have been more successful) shall be developed first. Either project could strain the capacity of domestic capital markets so that simultaneous construction of the two major pipeline systems under Canadian majority ownership is almost out of the question."

And I go on to say that it is not obvious which of these considerations will finally come to play, but "A decision in favour of Arctic Gas would" "be a reluctant one". It would have to be in the face of a firm decision by Justice Berger who in a sense occupies a similar position as Judge Litt in the procedures in the United States, and it "would be opposed by many quarters within the Canadian federal government, by several provinces and by a large body of Canadian opinion."

As you probably know, the Trudeau government faces an election no later than the fall of 1978. The liberal party is in great trouble, Trudeau is very unpopular at the present time and to run over the Natives and the environmentalists at this time in favor of an Arctic Gas pipeline is probably unlikely, it would be a very im-politic. So there is on the other hand and I have absolute confidence in this, there is a determination at the highest levels of the Canadian government to work out some joint accommodation with the United States for transportation of oil and gas and through exchanges of oil and gas. And I believe that the Alcan proposal offers a very important way out for the Canadian government of its way out of its dilemma.

Turning back to our contracts and the prospects of the Trans-Alaska Pipeline, the only serious substantive argument for the El Paso system from a national standpoint, the only one that has any credibility is that Canada will not license an overland pipeline under terms acceptable to the United States. Only Canada can prove or disprove the truth of this proposition and the Administration and Congress are going to wait for this.

Now the -- I do not want to say that there is no chance for a Trans-Alaska pipeline. There is no chance for a Trans-Alaska pipeline so long as there is a chance of a Trans-Canada pipeline and there is nothing that Alaska or El Paso or any of the purchasers can do to influence the decision from the United States in that respect.

The corollary proposition advanced by El Paso that the Canadian government is incapable of granting acceptable terms for an international pipeline because its treaties don't bind the provinces is without merit and can be easily dismissed. The premieres of both British Columbia and Alberta have expressed their in- intention to lay this question to rest to the extent that the Canadian federal government cannot bind the provinces. The provinces have independent authority to make treaties and those of you who are familiar with the Columbia River treaty will recall that it is a treaty between -- or among the United States, Canada and the province of British Columbia. Both Premier Lougheed of Alberta and Premier Bennett of British Columbia have made it absolutely clear that they have no objection to joining in any protocol providing for nondiscriminatory treatment, taxation, regulation, and for that matter a complete quitclaim of regulatory jurisdiction over a transit pipe- line that carries United States gas. So I think that that issue is totally a red herring.

The scenario I see developing on the approval of the pipeline -- or on the determination of a pipeline route is that the Federal Power Commission will find in favor of Arctic Gas, along the same lines as Judge Litt's finding, on the basis that it is environmentally superior on the basis that results in lower cost to consumers, the basis it can be built faster, that it is more easily expansible, and the whole range that the Federal Power

Commission will find it superior in every respect.

At about the same time the Berger Commission findings in effect vetoing Arctic Gas will come out in Canada. Now if you'll recall the language of the Alaska Natural Gas Transportation Act, it says the presidential determination -- the FPC recommendation, the presidential determination shall be made without respect to whether Canada has reached a decision on this.

What the FPC decision for Arctic Gas and the Berger decision against Arctic Gas will trigger is negotiations between the United States and Canadian government and among the various proponents of gas pipeline systems to see what kind of system car -- is agreeable to all the parties. And it seems to me that the system that is going to be most acceptable to all the parties is a system along the Alcan Highway but departing in some degree from Northwest's and West Coast's strategy for that. In other words it would be a higher capacity pipeline than envisioned by the sponsors. As -- one combination would be to use El Paso's engineering and pipeline design for the northern part of the route. El Paso believes that with high pressure, with 1670 psi they can move up to 3 1/2 bcf a day through a 42 inch pipe. I think that a 42 inch pipe is one of the strongest elements in the Alcan design because that is the kind of [illegible] that can be rerolled in existing North American facilities.

A disadvantage of the Arctic 48 inch scheme is that it requires the building of a new plant by Stelco for the production of that pipe and it introduces another -- just another of a whole series of uncertainties into what I believe is an oversized -- already an oversized project.

So returning again to the contracts, I do not see what the State accomplishes in terms of the advancing of its goal by selling the gas now. I will -- in response to questions I'd be willing to elaborate on what I think the significance of these contracts are, but I would like to go ahead and spend a couple minutes on what I think some of the problems of building and financing an Arctic Gas pipeline are, regardless of who built it.

There -- these projects are enormously risky no matter what the sponsors and their financial advisors say. Their ability to be financed in conventional -- by conventional private means is extremely suspect. And that -- I'm sure that Whitewell's representation to El Paso and the financial advisor's representations to Arctic Gas and to Northwest are qualified in the same way. That is, if you get as much gas as you say you are going to move through this system and if your costs are the costs that your engineers say you will have and your schedule is what your engineers say you can accomplish and if you do get all the necessary approvals, then the financial -- and you do get the all events full cost of service tariff from the Federal Power Commission and the state utilities that govern the distributors -- or the customers of the system, then you can finance this through conventional project financing.

What I would question is whether all those -- whether all of those conditions are certain enough that the insurance company's pension funds and the other institutional investors that have to buy this pipeline would be willing to risk what may be Ten to Twenty Billion Dollars in financing.

In the first place, there is uncertainty about the gas supply. Now the -- I believe the State's reservior engineers project a probable production, permissible production, or optimum production of about 2 bcf a day. Now that is about or perhaps below the minimum threshold of Arctic and El Paso. That is about the design threshold for Alcan.

Now it is conceivable that after two or three years experience in oil production the Alaska conservation authorities may conclude that that rate of production is not in the State's interest, that the loss of oil -- the value of the oil foregone by that production is greater than the value of the gas produced. Nobody knows what this is going to be. The fact that all the producers and the State of Alaska and the gas purchasers all believe that they can produce say two bcf a day safely isn't good enough for the lenders. They have to have some notion of what the likelihood -- the downside likelihood is. And the downside likelihood -- if there is only a ten percent chance that production will be 1.6 bcf per day and 1.6 bcf per day is not enough to guarantee the payment of the debt on this pipeline, then you just won't be able to go into the capital market. We have the problem of delays in capital cost overruns. Actual construction costs may exceed estimated costs by substantially more than they affect general inflation.

Two years ago, with the help of the Library of Congress, I did some research on this and was unable to come up with a single large custom engineered construction project in the United States over the last ten years which had not exceeded its initial engineering cost estimates by a factor of less than two. And the experience in North America with big custom-engineered construction projects has been that they typically cost two or three times their original projections, even including an allowance for inflation. The cost estimators are like accountants and they prefer a solid, empirically based figure. That is, so many cubic yards of cement at so many dollars a cubic yard to a realistic figure. "They do attempt to project the increase in anticipated labour rates and in the prices of specific materials", and the inflation rates for those specific materials, "but they don't take into account the fact that huge projects, particularly if they involve new technology", as both systems do, both Arctic and El Paso does, "or a remote construction site," and this would apply more to Arctic, "usually don't work the first time around, nor that both the purchaser and the licensing authorities change their minds several times in the course of construction. The cost engineers don't appreciate that such projects are usually clumsily managed and are subject to a number of re-organizations during their design and construction. They don't allow for the fact that materials and equipment are always late and often mis-specified or defective," and that such "enterprises" "suffer not normal, but abnormal labour cost increases. Because of their size and urgency, they are especially vulnerable to wage pressure," and "to featherbedding, and" also "to racketeering."

And I needn't go into great lengths on the problems of the Trans-Alaska oil pipleline, which will --

whose costs will exceed by ten times the initial estimates by the sponsoring companies. I do not project a ten time overrun for Arctic Gas but I think that a doubling of their present projections would not be an unreasonable anticipation in view of the history of large projects in North America. Let's assume that Arctic Gas or that El Paso's project would cost Twenty Billion Dollars and that it would have to be paid for in twenty years and "assume that the investors should receive a 15 percent pre-tax rate of return on total" investments. "Under a conventional utility accounting scheme, the project would need a first year cash flow of four billion dollars just to cover its fixed costs. On a discounted cash flow basis" which is a more rational financial way of looking at it but is not customary in utility accounting, "the annual fixed charge would be about $3.2 billion."

But "with a throughput" of about "a trillion cubic feet" a year, that is about three bcf, "we are talking" about "$3.20 to $4.00 per thousand cubic feet" for transportation costs alone. If less gas can be delivered, if we are talking about two bcf a day, we are talking about Five to Seven Dollars a thousand cubic feet. Now "this charge doesn't include the cost of developing the gas fields, any return to the producers," to the royalty owners, any "operating costs or" any "costs of distribution."

Now both El Paso and Arctic insist that the consumers will accept any price because of the rolled in feature. Now not everybody agrees with this and in fact none of the government sponsored studies -- the Aerospace -- FEA study estimated that "no market for Prudhoe Bay gas would exist in 1985 at a 'city gate' price exceeding $2.40 per million BTU (in 1975 dollars). The Interior Department's study reaches a similar conclusion." Now this price you are almost certain to get, "even without implausibly large cost overruns or shortfalls" in the gas distribution system.

Now, "one assumption of" these "studies mentioned" "is that natural gas" prices have been decontrolled, "and that the Alaska gas is" therefore "priced incrementally."

Incidentally, the -- I don't want to spend a lot of time on it but it is not clear whether deregulation would increase or reduce the price of Alaska gas. I think there is a very strong case for expecting that it would make Alaska gas less valuable for a number of reasons. Deregulation would increase the price of gas in the Lower 48 and therefore reduce consumption in the Lower 48, increase production from the Lower 48 and reduce the gap -- the shortage.

It would also reduce the amount of low priced gas that the pipelines and distributors get which they can roll together with expensive gas to come out with a price that satisfies their consumers. Now I don't want to predict absolutely that deregulation would make Alaska gas less valuable, but I think that that's the probable effect, that by easing the gas shortage in the Lower 48, they make it less willing for gas distributors to pay more for that gas than it is worth at the burner tip.

What it is worth at the burner tip to the average consumer is roughly the price of fuel oil. Now there is some consumers that will pay substantially more and some who will pay only the price of coal or residual oil and so on. But the average consumer is competing with fuel oil. In a deregulated market, after a few years, you'll find that gas distributors will not pay more than that for gas because they don't have any cheap gas to average it with.

So, anyway there are market risks -- there are gas supply risks, market risks, cost overrun risks, and of course you know about the political regulatory and other institutional issues, things like native claims in Canada, the fact that virtually nobody seems able to get any sort of terminal in California. I have looked at this problem again for several different agencies and I wouldn't count on any proposal which requires a major terminal in California at this time until there is a substantial change in the internal institutions of that state or a substantial change in federal-state relationships.

It may be that there is just no way to put a major terminal in California. Anyway you have these problems, so you have the -- so these risks generate the financing problems.

"The financial consequences of the risks I have listed are magnified by the fact that neither" El Paso nor Arctic "can be built in smaller self-sustaining stages." Each is a total "integrated system which" will not flow any gas or flow any cash until the whole thing is completed. "Most of the capital invested", that is Ten to Twenty Billion Dollars or more, will be exposed to all the risk factors for the entire planning and construction period.

Now private lenders "simply will not accept the risks of this sort, and neither project's sponsors are financially large enough to carry them, even if they were willing to do so", and they are not willing to do so. All of the projects propose an "all events" tariff in which the sponsors would be guaranteed a return on equity, as well as a return to debt service, whether or not any gas is ever carried by their project.

El Paso proposes to use federal loan guarantees and Arctic has talked about federal indemnification for overruns. But, neither the "full cost of service all-events tariffs" nor government guarantees are presently in the works and none of these projects can be financed without some sort of government backup. And this is something that I think is independent of the numbers you come out with on any particular thing.

The financing schemes are very conditional and I think that all the sponsors are -- expect they will ultimately have to go to the federal trough either for a subsidy or a loan guarantee, which is the same thing as a subsidy, because they will not be able to produce the cash flow that they project and they will have overruns.

The President, when he makes his recommendations, or the President in his negotiations with Canada, are going to have to come up with something that can be financed.

Now, turning to Judge Litt's conclusions on this, Judge Litt is in effect asking somebody to build an over-sized pipeline on speculation. He is saying that in view of the vast amount -- the vast potential of the North Slope, all the way from Pet Four through the State leases, through the wildlife range, through the Beaufort Sea and the Mackenzie Delta, there may be a vast amount of gas and it is wasteful to build a minimum scale system as Alcan proposes, simply to handle most economically the gas that we know for certain can be produced. But, he is asking somebody to take the risk and the somebody is basically the investment community that is not going to take the risk, even if the probability that the throughputs necessary for Arctic Gas are -- say even if it is a ninety percent probability that Arctic Gas is viable,

Then he turns around and says,"well, the oil companies ought to take this risk." Well, the oil companies are not in this business. The oil -- he is asking the oil companies to put Three, Four, Five Billion Dollars on top of the Four to Seven Billion Dollars it is going to take to develop the field to produce the gas. He is asking them to put it -- to take money that they could use in high return risky ventures and put it into an operation that is going to have a public utility rate of return, where their going to be constrained to make nine percent or something like that. And it just isn't going to happen. It is an appeal to patriotism or altruism or something like that that is completely unrealistic.

If Judge Litt and the Federal Power Commission and the President want a big diameter, high pressure pipeline from the North Slope, they are going to have to get the American people to pay for it and to accept the risks through the political system and there is nothing wrong, say with the principal of an all events tariff as long as the probabilities are good, as long as consumers have a substantial chance of benefiting, why shouldn't the consumers take part of the risk? It is not going to happen that way. The Public Utility Commissions don't think the risks justify it, they don't like the idea of socializing private risk in a situation where the investors are guaranteed their return while the consumers and the public take -- have the downside risks. So, when the President of the United States and the Premier of Canada get together to figure out what the system is going to be, they are going to have to look hard at the financing and the other system.

Now, looking at the faults of the Alcan system, there is something from the point of view of the Federal Power Commission. It seems to me that this principal fault can easily be resolved. It is desirable to have a forty-two inch pipe because that pipe can be built and can be rolled in present mills and its -- the technology is a lot more practicable.

El Paso believes that it can run a lot of gas through -- a lot more gas at a higher pressure through the pipe. If the Alcan people were granted a certificate on the condition they would put in a heavy guage pipe.

which could operate with sixteen hundred seventy psi, if the gas were available, by adding more power the incremental costs would be relatively small.

I think these things can be settled but they probably have to be settled in negotiations. It seems to me in conclusion that none of the systems as presently proposed and none of the financing arrangements are presently viable, and that we have yet to see the last of the combinations and permutations. I would say, however, that there is nothing the State of Alaska can do to advance a Trans-Alaska Pipeline LNG system within the U.S. political system. If there is going to be such a system, it will be selected by the Canadians because of their inability or unwillingness to authorize the prompt construction of an overland pipeline by one route or another.

SENATOR RADER: Representative Meekins?

REP. MEEKINS: I don't know exactly where to begin.

SENATOR RADER: Maybe a motion to adjourn. As a matter of fact we should have a recess motion. Let's take a recess here for ten minutes.

(Whereupon the hearing was recessed at 4:00 p.m. and reconvened at 4:15 p.m.)

SENATOR RADER: The Committee will come back to order. During the recess we had several conferences and we decided that no matter what we did, we would have lots of authority for doing it. So, and that includes nothing, I guess. As I recall, Representative Meekins, you had the floor when we recessed.

REP. MEEKINS: Thank you, Mr. Chairman. I hate to try to characterize what you said, but as I understand it, you say that while it is clear that the El Paso line provides great benefits to the State, that in your view it seems very clear that the contracts that were -- that are the subject of this -- of these committees are irrelevant to the decision upon which -- about which gasline will win final approval and that the actual decision will be made in Canada. If that is the case and if it is as clear to you as it seemed in your presentation, how do you explain the fact that administration experts say the opposite?

DR. TUSSING: Well, I think that may be more your speciality than mine. The purpose of these contracts is essentially an internal Alaska political purpose. Suppose you were the Governor and you had become -- and you were under assault from OMAR and the Anchorage Times and from the Anchorage business community for not having given one hundred percent support to everything that the El Paso enthusiasts wanted. And suppose as Governor you were also convinced by your own investigations that El Paso had very little chance and you're -- you would probably be concerned that when Arctic Gas got the final nod that these people would point the finger at you and say that it is only because you didn't sell the royalty gas, or its only because you made these noises about Alcan being an acceptable second choice and that you didn't dump all over the Canadians like we wanted to.

Well, it would seem that it would be an astute political move to go ahead and call everybody's bluff. You will recall that the Legislature almost unanimously, under the leadership of Senator Rader, urged the -- in fact, demanded that the administration go ahead and do this. So, the Governor now can come back to the Legislature with what I think is really a contract that doesn't mean anything for the --

REP. MEEKINS: Is this the hypothetical Governor?

DR. TUSSING: Yes, this is the hypothetical Governor. He now comes back to the Legislature with this can of worms.

SENATOR RADER: A realistic can of worms, huh?

REP. MEEKINS: And a real Legislature.

DR. TUSSING: And you look at it and you decide there is some problems with it, that the State may give up too much in it and I think that Mr. Moody and Dr. Swanson have some valid criticisms -- technical criticisms of the contract or that maybe you shouldn't have sold all the gas, or a whole series of reasons. Or, you may not be convinced that you are buying any political influence. But, what happens if you vote it down? And say -- where is the finger going to point when Arctic Gas gets approved? El Paso can say -- pick up its marbles and go home or something like that. It becomes a real psychological blow, at least within Alaska, to the El Paso effort. And, you guys, by voting this thing down bear the onus. You're the ones who defeated the Trans-Alaska Gas Pipeline.

If you pass it, this hypothetical Governor has exercised his leadership over this hypothetical fractious and undisciplined Democratic Legislature and carried the ball for Alaska. And, when and if Arctic gets the approval, he can show that he has done everything he could, and, in fact more than anybody reasonably expected him to do. He has done just what the enthusiasts for El Paso -- what OMAR has been saying he should do all along. They can't fault him on that. He has managed to carry along these legislators who were riding off in every direction. So, that -- that is what I think the fundamental significance of these contracts are and that is why I say I am not sitting in your seat, so I won't -- and I'm probably not the kind of person who could ever get into one of your seats. And so I won't advise you -- I won't advise you of what you are doing.

SENATOR RADER: Representative Meekins still has the floor.
REP. MEEKINS: Mr. Chairman, I just want to thank you for pointing that out. I never would have thought of it. I would also like you to direct him to be more forthright.
SENATOR RADER: Quit beating around the bush, now. Senator Colletta?
SENATOR COLLETTA: Yes. Dr. Tussing, you know that opened an area that, since you are venturing opinions, it seems to me out of the presentation on the political activities rather than the economic ones that affect the line. You missed the first day but the entire congressional delegation, without regard to party, also say that on the national level they want unanimity of support for this line. Now, am I you know -- should I believe from a conclusion of your answer to the last question, that all of us are playing a game and isn't the parallel to this line identical to the oil line that came to Alaska on a one vote measure?

You know, I can't help but infer, at least in my own mind, from what you are saying is that regardless of what we do or the congressional delegation does, not only Alaskans, that this decision will be made by two beings and they don't need us, we're playing the game and I would suggest that is wrong. I take offense to it, because in the oil line there were those people who felt very strongly that possibly a route other than through Alaska was beneficial and stood up and took the flak. And I would suggest that in this body right here there are those who still have not concluded that maybe the all Alaskan route is the way to go.

I really take great offense that you are lumping us into playing a show, and that isn't true.

DR. TUSSING: Well, let me deal with the first question -- or the second question, and that is the parallel with the Alaska oil pipeline. I don't see a significant parallel. In that case there was only one proposition before the Congress. There were no responsible corporate sponsors for a Trans-Canada pipeline. There was the unanimous support, the State of Alaska, the oil companies and the administration behind that proposal. Yet the opposition to it managed to mobilize something like forty-two votes for a Canadian alternative which didn't exist.

Now, we have an entirely different situation. The momentum and the weight of the responsible corporate sponsorship, the weight of the agency endorsements within the federal government are all with the Trans-Canada system. The momentum is there. When the Trans-Alaska Pipeline bill was before the Congress in 1973 it was right at the height of the Arab embargo and it was the only thing there that Congress could possibly ratify. And, it -- there is some question of whether it would have gone through without all that -- without all those preconditions. Now the momentum, the establishment, the route to be aroic -- and it's got a far higher -- it starts with a far higher proportion of support, despite the fact that it has got responsible corporate opposition and it has got the State of Alaska and a number of other entities opposed to it. It starts -- Arctic starts stronger in Congress than the Trans-Alaska Pipeline -- oil pipeline ever got in Congress. So, that I don't think it is parallel.

Now, going to the question of the delegation. I hate to -- I'm a little diffident about beating my own drum, but on major national, political questions concerning Alaska, the biggest ones, our delegation, whoever they have been, with perhaps one exception, and our administrations, whoever they have been, have been one hundred percent wrong on these issues and I think that I have got a little better record on that.

Going back, for example, to the question of whether the Secretary of the Interior could or would lift the land freeze and be able to authorize the pipeline without the settlement of Alaska native claims, or to a more fundamental issue, whether there was any legal merit or political horsepower nationally behind the native claims. That were -- with the exception of the second in which Senator Gravel, when he did come in in 1970, was an advocate of the native claims, our delegation and our State administration dismissed the possibility that this could hold up the pipeline and I was practically stoned out of Anchorage in 1969 when I told the Chamber of Commerce that there couldn't be an oil pipeline for maybe seven years and going through the things that had to be done. Well, this was against the unanimous consensus of our administration and our delegation.

Come again to about 1972, when the question of the destination of the oil and the West Coast supply/demand balance, you had unanimous profession by the industry, by the federal administration, by the State administration and by our delegation that demand on the West Coast would exceed production, combined California and Alaska production, and that the question of exports to Japan was not a real question because there would never be a surplus of oil on the West Coast. And, again, I think that I was probably alone in the State in maintaining that this would be a problem.

Our delegation and most Alaska public officials suffer a disease which is endemic to isolated colonial areas and that is, that it is very easy to believe ones own propaganda, to have wishful thinking. Now, I can't believe that our delegation really believes that there is a substantial chance that they could get a majority political vote for the Trans-Alaska pipeline.

I do know that it would hurt them very badly politically in Alaska to come in and do the same kind of thing I do, that is, deliver the bad news. Again, I have very little chance of replacing Senator Stevens or Senator Gravel because I do tell the voters and the politicians the bad news rather than the good news. And so, I can't go into their heads and say why is it that they give unanimous support. I just ask you, what would be the political -- what are the political risks to them of saying there is nothing you can do to advance the Trans-Alaska pipeline, better forget it, buddy. You know what would happen to them, regardless of whether that is their best judgment. There is no political to them at all in saying, "Go, man, go. Let's do everything we can for El Paso." So, I don't know what -- you know, I don't know what is in their heads but I don't think that you can really weigh their statements as an accurate objective judgment of what is going to happen in the United States Congress.

SENATOR RADER: Any further questions?

REP. CHATTERTON: Yes.

SENATOR RADER: Mr. Chatterton?

REP. CHATTERTON: Thank you, Mr. Chairman. Dr. Tussing, I am told that there was a recent poll conducted by the Rowan group of public opinion and the findings of that indicated in the order of eighty to eighty five percent of the citizens of Alaska favored an all-Alaska gas line. Are you suggesting in the comments you just made that we who represent those people should subvert their opinions?

DR. TUSSING: Not at all. I'm saying that you -- you as members of the Legislature have to make this judgment for yourself on the basis of the way you judge public opinion and the way you judge whats right and wrong. That is not for me to say. I said I will not recommend the vote one way or another on this.

SENATOR RADER: Representative Gruening?

REP. GRUENING: Well, this may be a clarification of Representative Chatterton's question, but, is public opinion subverted whether we reject or approve these contracts? As I understand it, the question before us is approving these contracts and not necessarily the support or non-support of the El Paso line. In your testimony the two are not necessarily, in terms of actual effect, are not synonymous.

DR. TUSSING: Is that a question?

REP. GRUENING: Yes.

DR. TUSSING: I don't -- I agree with you that the -- that it is possible to be in favor of the Trans-Alaska pipeline and to be against this contract, or say to conclude that this contract doesn't affect the outcome.

SENATOR RADER: Representative Miles was seeking the floor.

REP. MILES: Dr. Tussing, you indicated that there was no support for the El Paso project in its market area, I believe. Am I correct there?

DR. TUSSING: No. I said there is no substantial support in California. I was talking of California's principal market area.

REP. MILES: Just California only?

DR. TUSSING: Yes.

REP. MILES: I see. Well, this is a major market area, I understand.

DR. TUSSING: Yes, California is El Paso's biggest market area.

REP. MILES: Why -- getting off of politics and onto economics for awhile, why would El Paso spend so much money in developing a project if there is no support there? Am I missing something? I obviously am.

DR. TUSSING: Well, again you are asking me to speculate about peoples motives and I can just try to put myself in their place. El Paso, in the first place, wants to assure its customers that it is doing everything it can to obtain gas and a major campaign to build a pipeline system -- a transportation system from Alaska into their market area is such a gesture and it may earn them some Brownie points even if they -- you know, even if they aren't successful. That is one consideration. Now, El Paso is also getting very heavily involved in LNG technology all over the world and wants opportunities to develop and expand this technology.

Now, whether or not how great a probability of success they have, or they believe they have, I don't know. I think it's probably a good gamble for El Paso to stay in the race in the expect -- on the possibility that Canadians might not come through. That then El Paso is posed with an alternative system.

I would not say surely that the El Paso system will be approved even if the Canadians can't get their act together or if they turn down Arctic and Alcan, but at least El Paso is certainly number one -- number one in the line with this and they would -- if they successfully complete it -- financed it and completed it and operated it, they would add more cash flow to the corporate treasury.

Now, why do they want the gas? Why do they want the royalty gas, because they are in the gas business.

They want gas to flow through their system. They would want the gas to flow through their system regardless of what system were chosen. I'm sure that once -- that if a system other than El Paso was approved, El Paso will be back here at the state trying to buy the royalty gas and will be back trying to buy gas from the producers.

I don't think there is any mystery of what their general motivation to the enterprise is and for risking money for the enterprise. It is a perfectly legitimate kind of corporate venture.

SENATOR RADER: Representative Swanson and then Senator Huber.

REP. SWANSON: Yes, I just -- I'll turn the clock back just a couple of minutes and something has disturbed me through all of these hearings, that we are here talking about a gas contract and using data that is two years old. Now I'm one of the people who endorsed a all-Alaska route two -- going on three years ago and we are still using that support in the propaganda used today. We have not passed a resolution since we came to this Legislature endorsing --

SENATOR RADER: Representative, do you have a question of the witness?

REP. SWANSON: Yes. Well, I kind of resented what was said here awhile ago and I feel a little bit like that I have the right at this table or any other table to state that I don't think that the --

SENATOR RADER: If you feel you have been attacked, you have a right of personal privilege but the purpose of this hearing is to make answer -- ask questions of these witnesses now.

REP. SWANSON: All right.

SENATOR RADER: If you wish to why proceed.

REP. SWANSON: I feel like you do, John. I would like to ask you, in your remarks concerning the support of the El Paso route, do you take of what has happened today or two years ago?

DR. TUSSING: I'm not sure what you are referring to.

REP. SWANSON: Well, in your -- in your statements of the Legislature totally supporting the El Paso route.

DR. TUSSING: Oh, the last session of the Legislature adopted a resolution urging the administration to make a gas sale to El Paso and to other supporters in the Trans-Alaska route.

As far as I know, you are perfectly correct, this Legislature has not adopted any resolution to that effect.

REP. SWANSON: Thank you. Thank you, Mr. Chairman.

SENATOR RADER: Senator Huber?

SENATOR HUBER: Thank you, Mr. Chairman. Mr. Tussing, the Four Dollar price that you mentioned on gas, is it correct to assume that was an mcf and that it would compare to Twenty Four Dollar a barrel oil price or Sixty-five to Seventy-five Dollar a ton coal price with eight or nine thousand BTU's assumed?

DR. TUSSING: Well, those -- those are the equivalent prices. I don't want to be pressed to give a specific price because one of my points is that nobody knows what the price is going to be. It is very likely to be much higher than the sponsors of any of these projects are telling us, but whether the overruns are going to be five percent or five hundred percent, we can only speculate and so --

SENATOR HUBER: Would you care to expound on the saleability of Four Dollar gas compared to Twenty-four Dollar oil, at this time?

DR. TUSSING: Thats -- it's a complicated question. The value -- as I said before, the value of gas to the average homeowner or commercial user is roughly the value of fuel oil plus the -- say, some amortization of his cost of conversion if he has to convert from oil to gas, and so, so at the burner tip, gas is on the average worth maybe Two Dollars and Twenty-five, Two Dollars and Fifty Cents a million BTU today.

Now, if we expect the OPEC oil price to go up roughly with inflation, maybe six percent a year.

and so on. We can expect that average value of gas to go up. Now, the gas distributors gather together gas from various sources at various prices and they sell it at an average price. The gas distributors and the pipelines are also required by their franchises or by their licenses to provide this service -- to provide gas to all comers at a cost of service price. And so, if they have a shortage, if their demand is greater than their supply, they're often -- they will be willing to pay more than the gas is actually worth at the burner tip to acquire it and put it in their system.

Otherwise, they have consumers in which they have legal -- to whom they have a legal obligation to serve, who go short. So that for small amounts of gas, at the seasonal peak, or when there is some sort of emergency, the gas distributors may be willing to pay Ten Dollars, may be willing to pay the equivalent of One Hundred Dollar a barrel oil to avoid turning off the valve to their consumers. So -- but you can't take Ten Dollars a thousand cubic feet as the value because you have got to look at the whole cycle. Now, if the gas coming out of the pipeline costs the distributors Six Dollars a million cubic feet and he has got to -- or a thousand cubic feet and he has got to sell it at an average price of say Two Fifty, that means he has got to get a hell of a lot for it in the peak season. He may have to get Ten Dollars for it at the peak season and then he has got surplus gas, he's paying for the gas that comes through that pipeline in midsummer even though his regular residential customers don't need it. And, in that case, he has got to sell it in competition with coal for a dollar or residual fuel oil for Two Dollars.

So, it's not -- there is no single market value price and to know how much, say six hundred fifty bcf of gas or say one hundred million cubic feet of gas per day is worth to a gas distributor in Chicago or Los Angeles depends upon how short they are, how much they have already cut off their low priority customers, what their other alternative gas supplies are. Do they have a lot of flowing -- of gas flowing under old regulated contracts where they are paying Thirty Cents or Fifty Cents and to be used to subsidize the purchase of expensive gas. You have to look at all of these things and then each distributor figures out what the gas is worth to it and what the cheapest alternative is. If it goes to -- say it goes to Four or Five Dollars, they will look at making synthetic methane from oil which is very expensive for base load supply. It is more than the average consumer will pay but if they are trying to -- if they are just trying to fill a gap, it is a lot less risky to build a propane air plant or a plant to make methane out of naphtha for Four Dollars an mcf than it is to commit yourself to twenty years of take or pay year in and year out Four Dollar gas from Alaska. So, Four Dollars is cheaper from an SNG -- from an oil SNG plant than it is from a gas pipeline and I just can't give you the answer and say at what point, at what price Alaska gas prices itself out of the market.

The Interior Department's -- the FEA study that says Two Forty -- Two Forty, that's too low in view of their opportunity to roll it in. The El Paso's assertion that the distributors will accept the price no matter how much it costs is pure crazy. There is just no substance for that, there is a limit and I can't tell you -- probably Dr. Swanson's firm has done work in this as to what the long term limit to the city gate price is, but I can't tell you. It is somewhere between Two Forty and infinity. And I don't think its -- I really don't think it's much more than Four or Five Dollars.

DR. SCOTT: Somewhat short. This way from infinity.

SENATOR RADER: Senator Huber?

SENATOR HUBER: Mr. Chairman, the other question I have, I have trouble in phrasing it and I have noticed that you have returned to being a bit on the tough side and I don't think you will give me the latitude that you gave Senator

Colletta, so I'll let it go.

SENATOR RADER: Well, now that we have established that I'm an unfair chairman, are there anymore questions? Mr. Carpenter.

REP. CARPENTER: I'm going to make an extension of Senator Colletta's question. Dr. Tussing, you said that you angered the Chambers of Commerce by saying there was going to be a hiatus in construction of a Trans-Alaska oil pipe-line due to land claims and so forth?

DR. TUSSING: Yes.

REP. CARPENTER: Well, refreshing your memory a little bit, you actually angered them because you said there was no political chance of a Trans-Alaska oil pipeline, there was going to be a Trans-Canadian oil pipeline and that is what got everybody on you.

DR. TUSSING: I never said that. Never, never, ever.

REP. CARPENTER: Our memories differ.

SENATOR RADER: Are there any other -- I'd like to ask every-body to keep themselves on the subject of inquiry here. There is opportunity -- there will be opportunity for each of us to express ourselves at a later time as to whether Dr. Tussing's remark characterized a hypothetical or a real governor or legislature or a congressman. We needn't confront him with that today. Our purpose here today is to take his testimony on the subject before us and I would like to limit the questions to that if we might. Senator Croft?

SENATOR CROFT: Could I interrupt your remarks and ask a question? I am curious what you think the prospects are that any pipeline, Arctic, El Paso, Alcan, or another one if it is proposed, will actually begin construction sometime in 1978. Judge Litt talks about a dollar wellhead value being about the upper limit and all of the projections are that these -- each of these projects will have a higher amount than that. You have talked about all events tariffs and types of public financing that haven't even been considered yet. What do you think the prospects are? You have indicated Arctic is likely to be approved, do you think that means that they can actually begin the construction on the time schedule they are talking about?

DR. TUSSING: I don't -- I'm very skeptical as to whether Arctic can be built. I think it can be approved, that's the -- I think it can be approved in the United States and all other things being equal, it will be approved in the United States. It will get the endorsement of the FPC. But, shortly after the FPC decision we'll get the Berger decision, the National Energy Board in Canada will be second phase hearings next month. The NEB -- I don't know what the NEB will do, it will probably hand the hot potato to the cabinet -- to the Canadian cabinet. But, once the FPC makes its decision and once Berger in effect makes a contradictory decision, what is on the agenda is for negotiations between the United States and Canada as to what can be worked out. And the final decision depends first on those negotiations and second on resolving a lot of questions that involve both government and industry that really haven't been confronted yet. One is the financing question and in what manner shall the respective governments provide the guarantees against the risks in this system and practically any proposal is going to be extremely controversial. Loan guarantees come -- again, raise the question that your socializing the private risk and letting the private owners have the profit, and there is going to be a lot of antagonism in both countries.

You may recall that the Diefenbaker government fell as a result of things resulting from the loan guarantees to the Trans-Canada pipeline. The -- so that -- it's a sensitive issue in Canada.

Another issue that hasn't yet become -- begun to be confronted which is relevant to this royalty gas sale, is how the gas is going to be allocated. If the -- if there is still wellhead price control by the FPC, every gas company in the United States is going to want some of that gas and no company can offer the producers or the State of Alaska more favorable economic terms than any other company. So, there is going to be a lot more -- there is going to be a lot more demand for that gas than there is supply, assuming that some sort of viable pipeline system is hooked up.

The FPC is going to have to decide whose contracts are going to be approved. And even though there is no -- there is no current legal authority for the FPC to allocate gas and -- at least in non-emergency times among pipelines the way it can allocate today and say -- say to Columbia, "you know, Tenneco needs the gas more than you do, so we will turn down the Columbia contract in the -- the proposed contract with Columbia in the public interest because this other system is cut -- it's jeopardizing its number one and number two priority customers while you're still serving threes and fours." So, the FPC is going to decide who gets the gas. That is one of the reasons the producers aren't going out of their way to sign contracts, because -- you know, why should they choose one over another? They are not going to get any price advantage and the contracts -- a lot of them will probably be turned down anyway because the FPC wants somebody else to have the gas. Well, that hasn't yet been dealt with and if gas contracts are going to be used to finance the pipeline, then these have to be executed before a final financial plan goes together. So, in summary, I don't see much chance for construction in -- beginning in '78 unless the U.S. and Canadian governments bite the bullet and say, "we will provide the interim financing and we'll guarantee the thing until you put the final -- until all the final arrangments are made." And I really don't see -- I don't see that. Maybe next winter, if the questions before Congress and the Parliament, and we have got another cold spell like this years, they'll be willing to do it. They may send the Corps of Engineers out to build the thing for all I know but -- but, I don't see it starting in '78.

SENATOR RADER: Senator Croft, were you through?

SENATOR CROFT: No, I have another question. To what extent do you feel that the assumption of the amount of gas that is available on the reserves in the Arctic, Prudhoe Bay, as well as the Mackenzie is an unrealistically high assumption? Both El Paso and Arctic are big volume lines. To what extent do you think their estimates of their potential build up of throughput are realistic or unrealistic?

DR. TUSSING: Well, if by the time -- by the time the system is completed, I think there is a good chance that there will be a lot more gas than we know about now. That isn't enough to get -- to get the kind of debt financing I'm talking to. A good chance isn't enough. A good chance is enough to make a risk venture, but if you are risking your own money and you say "I think there is going to be plenty of gas there that we'll be -- that by the time the thing goes on stream we would be able to produce four and one-half bcf from those two areas and that's -- that's the way to average expectation.and I'm willing to gamble my money on that." That's fine, but the bond -- the bond-holders want a ninety-nine percent assurance.

I think that there is merit to the notion that society, that is, that the U.S. and Canadian governments should take the risk and build a pipeline that is cheap to expand. Now, if the governments are not going to do it then the -- then the rationale -- the strategy of Alcan is the only one that makes sense. You put in absolutely minimum capital investment necessary to start that gas and that cash flowing. I think that they have -- that the Alcan people haven't scaled down their system as far as they could. That, for example, they could drop Northern Border out of the system and say, "we're going to -- we expect the NEB to authorize or compel Trans-Canada to move this east and then we'll take it through a Great Lakes pipeline and we'll increase the power or whatever is necessary there."

I think -- now, Judge Litt wants a western leg on the Arctic pipeline and all the Western States want it because they don't believe that they will get the gas under reasonable prices by displacement. Well, the western leg is physically superfluous, at least up to, say one and one-half bcf going to -- going to western systems. Well, so -- so, as part of the political compromise you put the western leg into the system but you don't build it until after the gas starts flowing and the production builds up.

So, but if -- but if Canada and the United States are willing to bite the bullet and say, "our best geological assessment is that there is sixty or one hundred tcf up there which can be discovered within the next ten years, then let's go haul the hog, let's put in a high capacity pipeline. Let's put a MacKenzie link, whether it is on the Dempster Highway or the foothills or whatever, as part of the phase two and build the thing so it is compatible with the Mackenzie link and so on."

SENATOR CROFT: What you are saying is that a sale of the gas will not have any effect on the route decision. What I was really getting at to get you to comment on, do you feel a -- (a) a refusal to sell any gas or (b) a refusal to allow production of gas might influence a route decision?

DR. TUSSING: No. There is no credibility to such a threat by Alaska because once the decision is made, the State's got no -- the State's got no alternatives and all you do by not allowing the gas to be produced -- you may cause problems for oil production which causes the State a lot of problems and you forego the revenue. And, I just can't believe the State is stupid and spiteful enough to refuse to produce the gas just because the rest of the country didn't do -- didn't build the route the State wanted. It just doesn't make sense. And so that threat has absolutely no credibility. In the calculation of rates of return or costs assuming only seven-eighths of the production are just meaningless, you are just not going to do that and nobody will believe that you'll do that.

SENATOR CROFT: What about the holding down the rate of production?

DR. TUSSING: Well, there are some difficult -- there are some difficult problems. Suppose your reservior engineering studies show that the optimum rate of production is 1.6 bcf below -- is below the economic threshold of any pipeline system but that you -- but you do run into trouble by keeping injecting that gas and you're not going to flare it. You have some tough -- you have got some tough problems and I don't have an answer to that and let's hope we don't have to face that one. But, it is entirely plausible that you may have the level of production large enough to give you problems as to what to do with the gas, but not large enough to make any transportation system viable. And, of course in the past what was done in that sort of situation is what is being done is Saudi Arabia and Venezuela and the other big isolated fields in the world, they just burn the stuff.

SENATOR CROFT: Mr. Chairman. If a one in ten chance which you referred to earlier is sufficient to keep investors from backing any gas line, isn't the uncertainty about levels of production such that it might -- that itself might cause a delay in the pipeline?

DR. TUSSING: Yes, I think so. The --

SENATOR CROFT: Particularly when it is coupled with the possible decision by the U.S. Government on deregulation which may make Alaska gas -- not only might they face a lower volume of Alaska gas but a less valuable Alaska gas, if you couple the two together.

DR. TUSSING: Yes, all of these are just parts of a big package of uncertainties that are going to cause difficulties for any of these proposals.

SENATOR CROFT: Thank you.

SENATOR RADER: Representative Gruening?

REP. GRUENING: Dr. Tussing, as I understand what you said earlier was that the Canadian government was going to make the choice as to whether it was for either Alcan or Arctic. How is the President going to feel comfortable with making a decision, certifying a route without that stage in the negotiations being very certain? Are they going to amend the Alaska Natural Gas Transportation Act so he has more time? In other words, he has until July -- or September first and then ninety days if he wants to extend it. Is he going to feel comfortable with making that kind of decision without those things resolved?

DR. TUSSING: I think what he is going to do is as soon as the FPC decision comes down, and it may be happening right now, he is going to start talking with responsible Canadian authorities about -- oh, to what -- what kind of compatible decision we can come out with. And, I don't think that the Canadian authorities know what their political constraints are yet, until Berger has actually published his findings and there has been the -- a chance for a discussion of it and for the bureaucracy -- for them to read the FPC decision in the United States.

But, if the President makes the decision, say at the end of '77, you can count on its reflecting his discussions with the Canadians and he is not going to make a decision which is totally incompatible with what he thinks the Canadians are going to do. And both countries are going to bend over backwards not to appear to be forcing the hand of the other and to be blackmailing the other that there -- or leapfrogging or something like that. They're going to try to make it -- they're going to try to come out with compatible decisions, whatever the --

REP. GRUENING: You seem to raise the same arguments that the El Paso people raise in terms of the unsolvable Canadian questions and I think, you know, the same statements seem to be made in terms of the problems. Now, are those problems going to be resolved to the extent that the President can make a decision certifying say a Canadian route and not -- coming back at a later time and say, "I'm sorry, we can't -- the Canadians just decided that they can't go either route, we're going to have to go to an El Paso --"

DR. TUSSING: Well, the law says that he has to make the decision whether or not Canada has -- he has to make a decision on its merits whether or not Canada has made a decision. And, irrespective of what the process in Canada is, in reality it's going to be a joint decision once the -- once the thing has gone through the regulatory and hearing phases of it and I don't know the exact mechanism by which the United States and Canada will consult on this. I'm sure no mechanism has been set up. But, it's not an insoluble problem, it's a problem whose answer -- whose outcome is impossible to predict with competence now. I don't think anybody can come out with a solid prediction of what will happen in Canada, much less -- I'm as willing to do it as any Canadian. There is no authoritative -- there is nobody who has the authoritative position in Canada to say what Canada's position is on this. But, Canada will have a position of some sort and it will influence the President's decision.

I think that the -- that there is a good chance that the compromise between the FPC's decision in favor of Arctic and Justice Berger's decision against Arctic will be some kind of expanded Alcan system. That is my guess, but I wouldn't give it more than a fifty percent probability. One substantial possibility is that Canada will not authorize any pipeline or will postpone it till after the elections and the President may decide that we have to go ahead with our own system because of our internal needs, even though it's not -- even though it is the second best. So, my ability to forecast or prophecise is strictly limited on that.

SENATOR RADER: Representative Meekins?

REP. MEEKINS: Thank you, Mr. Chairman. Dr. Tussing, you stated in your comments that this contract, in your view, was not essential, that we weren't -- essentially that you weren't getting very much in the contract but looking at it from the other perspective, what are we losing, if anything? Are we losing anything by approving it?

DR. TUSSING: Well, it is -- it is conceivable that the Trans-Alaska route, or for that matter an Alcan route, after the State shifts to it, if it does, will be approved and that these contracts will be the basis of contracts under which gas actually flows.

I'm rather doubtful, even in this situation, whether the FPC will approve just these contracts for a number of reasons. But -- but it's possible you may be stuck with these terms and they are probably not -- not the best terms you could get in a bidding situation after the -- after the pipeline is -- route is clear. Certainly there may be opportunities in a deregulated situation to get a more favorable situation. I don't want -- I don't want to speculate too far on that, but your other consultants who have examined the contracts in detail point out ways in which the State has given up options. So -- So, in case they go into effect you have given it up. I do have one specific criticism of the contracts even starting -- even from the presumption -- the premises from which the administration is starting, that is, that you are going to buy some political support.

And, I don't know why you had to commit one hundred percent of the gas and I think there is some -- there are a couple reasons why you probably shouldn't commit one hundred percent of the gas. Firstly, you have this most favored nation clause, that is, that the price is the highest price paid by any interstate purchaser. Now, it may well be possible for the State, if it kept some -- held some gas back to find a purchaser who would pay a higher price than any of the others and jack up the fate. If it kept some -- twenty-five percent out and waited until -- waited until the bidding process at the time of the completion of the pipeline, you might be able to get a higher price than any of the sales from the -- by the operators because the State might be in a position to sell to a nonjurisdictional purchaser, or to one that has a special tax advantage, like a state entity.

And, I would like to see you have the opportunity to use that twenty-five percent to jack up the price on the remaining seventy-five. Then the other is -- in the administration's presentation and within the whole rationale for the thing, there seems to be a high probability of a shift in route -- of a shift to Alcan, for example. And, if that is serious, if that is not just window dressing, then it would seem to me you would want to keep twenty-five percent out to -- and to offer it to Northwest at that time that the State moves to the Northwest position. Otherwise, the option of shifting doesn't seem terribly great. So, even if I were -- even if I accepted all the other premises, I don't see the reason for selling more than three-quarters of the gas at this time.

SENATOR RADER: Representative Meekins?

REP. MEEKINS: Do you happen to know if that -- if the most favored nation provision, as you call it, in there would apply to sales to users? I'm not sure it would.

DR. TUSSING: I don't have it in front of me but if I recall the language, it's in any interstate sale. It doesn't -- or any interstate purchase and so it doesn't characterize the purchaser. It would seem to me it would -- frankly, I don't see why in a deregulated situation it should be limited to interstate sales since -- since, if the gas is worth Two Dollars in-state, to an in-state purchaser, you shouldn't sell it for One Dollar to an out-of-state purchaser.

But, as Mr. Moody says in his prepared statement, it may not be that you can get any contract which includes a -- you know, includes that -- all these provisions. That's a matter of judgment that is up to the negotiator, he really has --

REP. MEEKINS: Well, I'm trying to find out if there is anything we are really losing, in your view, in approving this contract. You know, we've heard that that -- that problem that you point out that we may be losing a higher price by not having reserved the twenty-five percent so we can jack up the most favored nation provision in there.

That might not be a realistic concern because the FPC wouldn't approve of such a contract anyway in their regulation of the transportation of such gas.

DR. TUSSING: Well, no. That's a -- that's one that depends on the -- it's conditional on deregulation. So, it wouldn't require an FPC approval. The FPC will continue to regulate the transportation and the transportation costs but if that's a feature of the wellhead price, conceivably the FPC could reject the whole contract on the grounds the pricing provisions are not in the public interest but I don't see that as a problem. I just -- let's say what you are giving up are the shortcomings identified by Mr. Swanson and Mr. Moody, as far as I can tell. That is, that there -- that you are giving up options or some possible options for getting a higher price by leaving the gas off the market until you see -- until all the circumstances are sorted out. You know -- for example, the amount the gas is worth to a particular gas distributor does depend on the transportation system. Now, the hierarchy -- the ranking and the order of preference of the different potential customers would change. For an Alcan system probably -- probably Northwest would be your preferred customer in a deregulated situation because the value of gas in its market is essentially the same as it is anywhere else in the country but it is closer, so you have the lowest transportation costs. And, under the LNG system you would probably -- conceivably El Paso would be willing to bid the highest for two reasons. First, because it would be the point of off loading and be closest, and second, because they are quality problems. California probably has the highest premium but as you know, of course PG & E, which is one of El Paso's customers, is part of the Arctic group and would like to bring the stuff overland to California. Now I don't know how much PG & E would give.

REP. MEEKINS: Thank you.

SENATOR RADER: Mr. Chatterton?

REP. CHATTERTON: Mr. Chairman, Dr. Tussing, this is in effect the same question as Mr. Meekins -- Representative Meekins asked and I am going to ask it so I think that we can not be confused by rhetoric about pipeline routes and stay with just one subject, the contract, and I think you can answer it with a "yes" or "no". My question, do you believe that this legislature in approving these three gas sales contracts would be doing the people of Alaska a disservice?

DR. TUSSING: I can't answer that. That's a political question that really goes beyond my competence.

SENATOR RADER: Any further questions? We'll adjourn and subject to an adjournment by the House and Senate tomorrow morning we will reconvene at 11:00 a.m.

We'll start with the Alcan people and go from Alcan to Arctic Gas and then probably through our consultants and then into the general public testimony.

We stand adjourned.

(Whereupon the hearing was adjourned at 5:15 p.m.)

Perspectives

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AN INKLING OF THE LONG JOURNEY

Arlon R. Tussing

There are, I believe, serious questions about the viability of the transportation systems proposed by both the Arctic Gas consortium and the El Paso Company for taking Alaska natural gas to U.S. markets. An investigation I conducted in 1975 on the economics of the two proposals for the State of Alaska raised the possibility that the cost of delivering the gas might actually exceed its value to consumers. At best, it appears that both projects, as proposed by their sponsors, are so risky that it may not be possible to finance them privately, even if their political and regulatory problems can be overcome — itself a questionable issue.

Both U.S. projects face the following risks.

Gas supplies: Production from the Alaska North Slope, and in the case of the Arctic Gas proposal, from the Mackenzie Delta, may be substantially less than the design capacity of either transportation system, meaning that each unit actually carried would have to bear a larger portion of the system's fixed costs than projected by its sponsors.

Delays and capital cost overruns: Actual construction costs may exceed estimated costs by substantially more than the effect of general inflation. The Arctic Gas project involves construction and operating technology untested in North America, while its route traverses hundreds of miles of difficult Arctic terrain where there has been no previous construction of either pipelines or roads. El Paso proposes a system of unprecedented pipeline pressures and a huge scale-up of existing liquified natural gas (LNG) technology. New technology, unfamiliar environments, and a large scale — relative to previous projects, are exactly the ingredients of the most spectacular cost overruns. Arctic Gas, for example, envisions a system from Alaska, across Canada, and into the Lower 48 States with an estimated cost in 1975 dollars of about 8½ billion. I would not be surprised to see the total cost of either project exceed $20 billion, including interest on funds used during construction.

Experience in North America with big, custom-engineered construction projects has been that they normally cost two or three times their original projections, even including an allowance for inflation. Cost estimators are like accountants in that they prefer a solid, empirically based figure to a realistic figure. They do attempt to project the increase in anticipated labour rates and in the prices of specific materials but they don't take into account the fact that huge projects, particularly if they involve new technology or a remote construction site, usually don't work the first time around, nor that both the purchaser and the licensing authorities change their minds several times in the course of planning and construction. The cost engineers don't appreciate that

"It's new, man—it's bound to have a few little bugs."

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such projects are usually clumsily managed and subject to a number of re-organizations during their design and construction. They don't allow for the fact that materials and equipment are always late and often mis-specified or defective, or that enterprises of this sort suffer not normal, but abnormal labour cost increases. Because of their size and urgency, they are especially vulnerable to wage pressure, even more so to featherbedding, and often to racketeering.

The Alaska oil pipeline was initially estimated at something less than one billion dollars in 1969. It will finally come in at a cost between eight and ten billion. This particular project is an especially horrible example because it has suffered from each of the diseases I mentioned. But it isn't unique. Nuclear generating plants in the United States have been coming in at four to five times their projected cost per on-line kilowatt.

On this basis the cost of the Arctic Gas project *could* easily become twenty billion dollars. Let's assume it *will* cost twenty billion and also that the project is to be paid for in 20 years, that is, a five percent amortization. Let's also assume that the investors should receive a 15 percent pre-tax rate of return on total assets.* Under a conventional utility accounting scheme, the project would need a first year cash flow of four billion dollars just to cover its fixed costs. On a discounted cash flow basis the annual fixed charge would be about $3.2 billion.

With a throughput of something like a trillion cubic feet per year, we are talking of $3.20 to $4.00 per thousand cubic feet (mcf) for the capital plant just to get the gas into the existing distribution systems in the Lower 48 states and eastern Canada. If less gas can be delivered, as is likely, the cost would be even higher. This charge doesn't include the cost of developing the gas fields, any return to the producers, royalties, operating costs or costs of distribution.

Market: Both El Paso and Arctic Gas insist that the natural gas shortage in the United States is an absolute one, and that Lower 48 markets will accept North Slope natural gas at any price. Not everyone agrees; the Federal Energy Administration, for example, estimates that no market for Prudhoe Bay gas would exist in 1985 at a "city gate" price exceeding $2.40 per million BTU (in 1975 dollars). The Interior Department's study reaches a similar conclusion. This price could easily be exceeded even *without* implausibly large cost overruns or shortfalls in gas supplies to the system.

*Based, for example, on 70 percent debt at an average interest rate of 10 percent, a 15 percent after tax return on equity and a 50 percent average tax rate on profits.

One assumption of the studies mentioned here is that natural gas field prices are free of Federal Power Commission (FPC) controls, and that the Alaskan gas is priced incrementally. Even relaxing these assumptions, however, it is not at all clear how much customers would be willing to pay on a year-round basis for the quantity of gas that would be carried by this system. The gas delivered through such a pipeline would be a base load supply delivered into southern distribution systems which have typical load factors in their premium markets of less than 40 percent. The seasonal swing in residential and commercial demand is one reason why about half the natural gas produced in the United States is now being burned as a boiler fuel. Some of the gas from the Arctic would have to be "dumped" in the boiler fuel market in competition with heavy fuel oil at an equivalent of about $2.00 or coal at about $1.00. The cost of Arctic gas delivered into the distribution system for premium customers could therefore reach $5.00, $6.00 or even more, per million BTU. Six dollar gas is about equivalent to oil at $30.00 per barrel. It would seem on its surface that there ought to be some question about the economic wisdom of such a project.

Political, regulatory and other institutional issues: Each project would face serious political and legal obstacles, even *after* it received a certificate from the Federal Power Commission. Lack of co-ordination in U.S. and Canadian approvals, for example, could block or delay construction of the Arctic Gas system, while there is some chance that resistance in California to port and terminal facilities would jeopardize completion of the El Paso system. The Arctic Gas system is, significantly, opposed by the governments and the preponderance of public opinion in both Alaska and Alberta, and the El Paso system is widely opposed within the state of California, where the liquified natural gas would be landed. The major environmental organizations are hostile to both projects. Neither they nor various local interest groups are likely to abandon every attempt to obstruct or delay construction simply because the system has been sanctioned by the Federal Power Commission.

Financing problems: The financial consequences of the risks I have listed are magnified by the fact that neither project can be built in smaller self-sustaining stages. Either would be a large integrated system which could not carry any gas or produce any cash flow until it was completed. Most of the capital invested ($10 to $20 billion or more) would therefore be exposed to these risk factors for at least the entire planning and construction period.

Private leaders simply will not accept risks of this sort, and neither project's sponsors are financially large enough to carry them, even if they were willing to do so. They do not in fact seem to be willing, as they both propose tariff conditions which would protect their own profits as well as their debt service obligations against "all events". Only the federal governments and/or, perhaps, potential gas consumers are in a position to carry financial risks of the size associated with either of the systems.

Accordingly, El Paso proposes to use federal loan guarantees (under an existing programme) for its LNG tankers, and spokesmen for Arctic Gas have suggested that governments indemnify the sponsors against cost overruns exceeding 40 percent (nearly certain, in my judgement). But, more importantly, each applicant proposes to rely on "full cost of service all-events tariffs" to cover their debt service obligations and to ensure a return on their equity. These tariffs provide, in brief, that consumers are required to pay the debt service and operating costs of the transportation system (plus a profit to the owners) no matter how great these costs are and whether or not the customers receive any gas. Arctic Gas's tariff would begin to run as soon as gas was first delivered; El Paso's would begin 60 months after approval of its project, even if it were never completed.

The proposition that consumers should bear or share in the risks associated with a project which benefits them is not in itself unreasonable, provided that the economic expectations of the project are clearly favourable and the risks are of a reasonable magnitude. But with these projects there are good reasons for doubt on both scores. Moreover, even if the Federal Power Commission were to approve "all-events" tariffs, local gas distributors would not sign contracts containing such tariffs unless they were assured *in advance* by their state regulatory commissions (as well as by their own market analyses) that they would be able to pass these charges through to their own customers. Responses by the state commissions to Federal Power Commission enquiries suggest that there is almost no chance that they would give such advance approval.

These considerations lead inexorably to the conclusion that neither system can be built in the form proposed by their sponsors without either substantial federal financial backing, Federal Power Commission authority to preempt the jurisdiction of state utility commissions over the tariffs of local distributors, or both. No plausible proposals of either sort have yet been made, either by the applicants or by any of the responsible federal agencies.

Perhaps the most chilling prospect is that the Federal Power Commission (and the National Energy Board, in the case of the Arctic Gas project) would license one of the projects on the basis of conventionally estimated costs. The Commission would permit the transmission companies to begin collecting interest on construction debt before the project goes on line, and on that assurance the capital market would provide the sponsors with three or four billion dollars for engineering studies, site preparation and materials acquisition.

At the completion of this first phase, the sponsors will try to borrow the money for actual construction. At this time the cost estimators will have brought the figure up to \$13 or \$14 billion or more. After some point even all-events tariffs would not assure debt repayment, so that the money just won't be there to finish the system.

But a commitment would have been made. The transmission companies and their customers will come to Congress (and the Canadian government) with figures that show the present benefits will still exceed the present costs, because sunk costs don't matter (except to the investors). They'll talk about the pressing need of consumers who don't have any alternative in sight (because they have been counting on Arctic gas), they'll talk about energy self-sufficiency, and they'll talk employment and the balance of payments. If Congress and the Canadian Parliament have any inkling now about the long journey on which they are about to embark, they may hesitate.

In summary, there seem to be two problems that work together to make questionable the completion of either project as proposed: each of them requires too large an initial capital, and that capital would be exposed to too many large risks. Once these are recognized as the critical problems to be overcome, it is obviously worthwhile to investigate whether there might not be some alternative system (or modification of one of the applicant's systems) which could begin with a smaller investment and perhaps be expanded in stages after gas and income begin to flow, a system with a smaller potential for cost overruns, and one which would raise less opposition on environmental, development or economic nationalist grounds.

The proposition that consumers should bear or share in the risks associated with a project which benefits them is not in itself unreasonable, provided that the economic expectations of the project are clearly favourable and the risks are of a reasonable magnitude. But with these projects there are good reasons for doubt on both scores.

The Fairbanks-Alcan route: One system which seems to have the possibility of meeting some of the criteria mentioned here would be an overland natural gas pipeline along the general route of the Trans-Alaska oil pipeline to a point about 100 miles south of Fairbanks, and along the general route of the Alaska Highway into northern British Columbia or Alberta. Such a route has been suggested as an alternative for the Arctic Gas system by various parties, including the FPC environmental staff.* Simply as an optional way of completing the Arctic Gas proposal, however, the Alaska Highway route would result in higher costs, because an additional separate pipeline leg would be required to bring the Mackenzie Delta gas reserves to market.

Use of the Alaska Highway routing would at first seem to have only two advantages over the system proposed by Arctic Gas: a reduction of the likelihood of major cost overruns because the new system would follow existing transportation corridors, where construction conditions are less extreme and better known, and less intense environmental opposition because this route has far fewer river crossings, would not invade the Arctic Wildlife Range, and follows a corridor already affected by development.

*In September 1976 the FPC staff issued an Alcan system supplement to the Final Environmental Impact Statement on Alaska natural gas transportation systems. The supplement urges "that none of the proposals be approved as proposed." It concludes that the Arctic gas proposal would be environmentally superior to other alternatives if the leg to the Western United States were dropped (and that area were served with Alaska gas by displacement) and the "Fairbanks Corridor" (Alcan Highway) route were adopted. The FPC staff did not endorse the Alcan proposal of Northwest and Foothills "because it lacks the necessary expansion flexibility."

Coupled with two other changes relative to the Arctic Gas proposal, however, an Alaska Highway system would appear to be considerably cheaper in initial capital outlay, and still competitive or even superior in terms of expected transportation tariffs for Prudhoe Bay gas. The first of these two variations is to use, as much as is practical, conventional technology and existing transportation facilities in the United States and Canada. The second is to postpone construction of a transportation system to serve the Mackenzie reserves.

Northwest Pipeline Company, a U.S. company, together with three Canadian companies, Westcoast Transmission, Alberta Gas Trunk (AGTL), and Foothills Pipeline Co. (a joint venture of the other two) has formally proposed to build a system from Prudhoe Bay along the oil pipeline route to Fairbanks, then following the Alaska Highway to Fort Nelson, British Columbia and Zama Lake, Alberta, where the gas would enter existing Canadian transmission facilities. These facilities would be expanded where necessary to accommodate the increased volumes.

The pipeline concept proposed by Northwest and its Canadian partners would have several technical and financial advantages over the other two systems. It uses a 42-inch pipe, conventional technology, a corridor where there has already been highway and/or pipeline construction, and maximum employment of existing facilities. By virtue of these changes, the initial capital cost outlay before any gas or cash could begin to flow might be held considerably lower than the cost officially anticipated for the Arctic Gas system. The likelihood of large cost overruns, as well, would be much reduced by these features. Whereas ultimately, higher volumes would be required to cover the investment, the system could begin to operate with a flow of as little as a billion cubic feet per day. And, in my judgement, the political and regulatory barriers to an Alaska Highway system would be far less formidable than for either of the other two systems.

The system proposed by Northwest, Foothills, *et al.* may not yet be the cheapest way of moving Alaska gas to the United States Midwest and East. The Alcan proposal presented to the FPC and NEB still includes the 1117 mile Northern Border pipeline, which is part of the Arctic Gas system. The system with the lowest initial capital cost, however, seems to be one which would expand the Trans-Canada pipeline and the Great Lakes pipeline, instead of building an entirely new line across the Prairies. Both the U.S. and Canadian partners in the Alcan project understand the advantages of maximizing the use of existing facilities, and I can only speculate on the reason for retaining Northern Border. The Trans-Canada Pipeline Company, which is part of the Canadian Arctic Gas group, may be unwilling to co-operate with a rival proposal at this time, although there is no reason to suppose that Trans-Canada's facilities would not be available to move Alaska gas if the Arctic Gas proposal were to be rejected by the National Energy Board.

There is good reason to believe that the announcement by Northwest makes the State of Alaska's commitment to support El Paso obsolete, and that this support may deteriorate rapidly. The Northwest project would avoid most of the state's environmental objections to the Arctic Gas system, it also makes gas available in the Fairbanks area and involves almost as much pipeline construction within the state as would the El Paso system. Because it does not involve an LNG terminal, however, the boom resulting from building a pipeline along the Alaska Highway would be substantially smaller than the boom that would be generated by the El Paso project.

Alaska and the Alcan proposal: According to preliminary estimates from the University of Alaska's Man in the Arctic Program, construction of the Arctic Gas system would add $19 million to the state's gross product and three thousand persons to the state's population in the peak year of construction. The El Paso system would increase gross product by $235 million and population by 24 thousand, while the Alaska Highway pipeline routing would increase Alaska's gross product by $111 million and population by 15 thousand. These calculations do not take account of the fact that Haines and Skagway would undoubtedly be major ports of entry for materials and equipment destined for construction activities in Yukon Territory.

For these reasons, the Northwest proposal seems at the very worst to be a workable compromise that would be acceptable to almost every important Alaskan interest group. The newly proposed system may, however, be more attractive to Alaskans than as just a fallback position or a workable compromise. Northwest Pipeline's approach to the state contrasts sharply with the "take it or leave it" stance of both of the original applicants. Northwest has at least informally suggested that the state take an equity share in the pipeline system and take part in its planning and operation. The company also has approached, or plans to approach, Alaska-based corporations for participation, including the Inuit-owned Arctic Slope Regional Corporation and the Athabascan-owned Doyon, Ltd., and has suggested that a block of shares in the enterprise be offered to the general public in Alaska. The effect of these innovations would be to ensure that the system within Alaska would be closely identified with local interests and be responsive to them.

Regional interests outside of Alaska: The Alaska Highway pipeline proposal offers significant advantages over the two other proposed systems to a wide variety of regional and sectoral interests outside of Alaska.

British Columbia

For British Columbia, introduction of Prudhoe Bay gas will more fully utilize the existing facilities of Westcoast Transmission, and thereby reduce the cost of British Columbia gas delivered to consumers in the province. Construction of the pipeline would provide a stimulus to the development of northern British Columbia and Yukon Territory, and strengthen the territory's links with market and financial centres in British Columbia. The proposal is now being discussed in the province as a possible justification for extending the British Columbia Railway to Whitehorse and eventually to Fairbanks. For these reasons, the provincial government has endorsed, and is reportedly considering joining in the pipeline project, perhaps as an equity participant.

Alberta

The project could be supported by the crucially important Province of Alberta (which now opposes the Arctic Gas application) because it would contribute to the optimum use of Alberta's own gas transmission system, rather than establishing a competing trunkline through the province. Unlike Arctic Gas, moreover, the new system would not in the immediate future compete with, and require the shutting in of, Alberta gas now dedicated to markets in eastern Canada.

Canada

For Canada as a whole, the Alaska Highway proposal would postpone the necessity of deciding when, how and by whom the Mackenzie Delta — Beaufort Sea region was to be developed, and whether that region or the Arctic Islands should take first priority for development among Canadian frontier regions. By reducing the total amount of new construction and shifting a substantial part of the construction out of Canada and into Alaska, the Alaska Highway system would reduce the stress on Canadian capital and labour markets and on the nation's foreign exchange position.

Pacific Northwest

The system proposed by Northwest Pipeline is by far the most economical method of moving North Slope gas into the Pacific Northwest, and it is for that reason supported by the gas distributors of the region. In contrast to the Arctic Gas proposal (which is a second-best gas supply alternative for the Northwestern states), construction of an Alaska Highway system would rely mainly on Seattle-Tacoma and other ports in the region as supply and transportation bases for the northern half. The Alaska Highway route would not make as large a contribution to Port of Seattle activity and revenues as would El Paso's LNG project but the latter is not in my judgement likely to prevail, and the Alaska Highway system therefore offers maritime interests and construction in the Northwest the greatest volume of business they are actually likely to obtain from any Alaska gas transportation system.

California

For California, the Alaska Highway system offers a comparatively economic and (because it utilizes conventional technology) reliable source of incremental gas supply. Unlike the El Paso project it would not raise novel safety issues nor would it threaten to displace California's present low price gas from the Permian Basin in favour of high price LNG imports from Alaska.

Midwest & East

For the United States' Midwest and East, the Alaska Highway project (like the Arctic Gas project) would provide an assured supply of natural gas directly into the market areas where the shortages are most acute. Because of its smaller risk of construction delays and cost overruns, however, the Alaska Highway system should, on balance, be preferable. By preserving Canada's option to develop the Arctic Islands and the Polar Gas pipeline earlier than the Mackenzie Delta and Beaufort Sea, the Alaska Highway proposal may offer a better possibility (however remote) of increasing producible and transportable Canadian reserves to such a quantity that the Canadian government would be willing to consider new export commitments.

There cannot help but be some losers. First, of course, are those gas transmission companies whose projects would be turned down and the construction and service firms who hoped to build a bigger system or a different system from the one which is finally approved. There is Exxon, whose affiliate Imperial Oil is part of the Canadian Arctic Gas group, and other producers with interests in the Mackenzie, who would be deprived of an early hookup to their Arctic reserves, however superfluous that hookup may be at the present time from the standpoint of Canada's energy economy. Finally, there are those who would expect to build and operate the LNG tankers if the El Paso project prevailed, together with those (in the Port of Seattle, for example) who hope for a larger demand for their transportation and other services than an Alaska Highway project can generate.

> *For Canada as a whole, the Alaska Highway proposal would postpone the necessity of deciding when, how and by whom the Mackenzie Delta-Beaufort Sea region was to be developed, and whether that region or the Arctic Islands should take first priority for development among Canadian frontier regions.*

On balance, however, if we take into account the lower front-end cost, the smaller vulnerability to cost overruns, and the widely agreed-upon environmental advantages of the Alaska Highway route, a system similar to that proposed for the Alcan may be the best practical alternative for almost every region in both Canada and the United States. Together with its broad acceptability to Alaskans these considerations make a system like that proposed by Northwest and Foothills a possible winner despite its late entry into the competition.

Arlon R. Tussing

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Arlon R. Tussing is a professor of economics at the University of Alaska. He has done extensive research and writing on northern oil and gas development and has served as chief economist for the U.S. Senate's National Fuels and Energy Policy Study headed by Senator Jackson. He is currently completing a term on Alaska's Royalty Oil and Gas Development Board.

What's in it for Canada?

The probable reception of any Alcan proposal by Canadian authorities has been a most difficult issue to forecast. A major appeal of the Arctic Gas project is purportedly its early (if not necessarily more economical) attachment to the Mackenzie reserves. Without this feature, it may be asked, what is the advantage to Canada of accommodating the United States in moving Alaska gas?

The attachment of the Mackenzie reserves may, on the other hand, be seen as a major *disadvantage* of the Arctic Gas system, from at least one Canadian standpoint. There is no particular reason why Canada should *not* accommodate the United States with a transit line across Canadian territory; after all, a substantial portion of Canada's oil and gas supplies transits the United States. There would seem to be little objection in Canada on nationalistic grounds to American gas moving in either an American or a Canadian-owned pipeline across Canada. The Mackenzie project, in contrast, raises the issue of an American-dominated consortium developing an important frontier area of Canada. The fact that an early Mackenzie connection is being justified in the United States by the (doubtful) proposition that it would lead to greater Canadian exports to the United States aggravates its potential difficulties in Canada. Both its timetable and logistics would be dictated by the convenience of the American interests. The native claims and environmental complications of this route are also well known.

> *If Congress and the Canadian Parliament have any inkling now about the long journey on which they are about to embark, they may hesitate.*

The 60 trillion cubic feet of proved reserves in the western provinces are enough to sustain the expected growth of Canadian demand plus present export contracts for about ten years. This would be the case even if there were no further discoveries, but recent exploratory results in Alberta have been rather encouraging, more so in fact than in the delta area. For this reason a decision on an Arctic pipeline carries much less urgency for Canada than it does for the United States.

More importantly, however, a decision today in favour of immediate development of the Mackenzie Delta-Beaufort Sea region can be seen to prejudice whether that region or the Arctic Islands (where recent exploration seems to have been more successful) shall be developed first. Either project could strain the capacity of domestic capital markets so that simultaneous construction of two major pipeline systems under Canadian majority ownership is almost out of the question.

It is not obvious which of several competing considerations is likely to be dominant in the eventual decision by the National Energy Board and the Cabinet, but on balance there now appears to be a favourable climate for a co-operative project with the United States concerning Alaskan gas. If the Alcan project were not a serious contender, this means that the Arctic Gas proposal would be approved. The Maple Leaf project is not timely either in terms of known reserves or in terms of Canadian demand, and it is not a serious contender at this time.

A decision in favour of Arctic Gas would, however, be a reluctant one and would be opposed from many quarters within the Canadian federal government, by several provinces and by a large body of Canadian opinion. These objections rest on a broad range of environmental, economic, nationalistic and native claims considerations, and most decisively perhaps on the fact that the approval of Arctic Gas might effectively preclude or postpone for many years the Polar Gas alternative. For these reasons, my own tentative judgement is that the Canadian government will — once it has had an opportunity to consider the alternative — welcome the opportunity to avoid an early decision one way or another regarding the Mackenzie. This is likely the biggest benefit to Canada from the Alcan proposal.

Arlon R. Tussing

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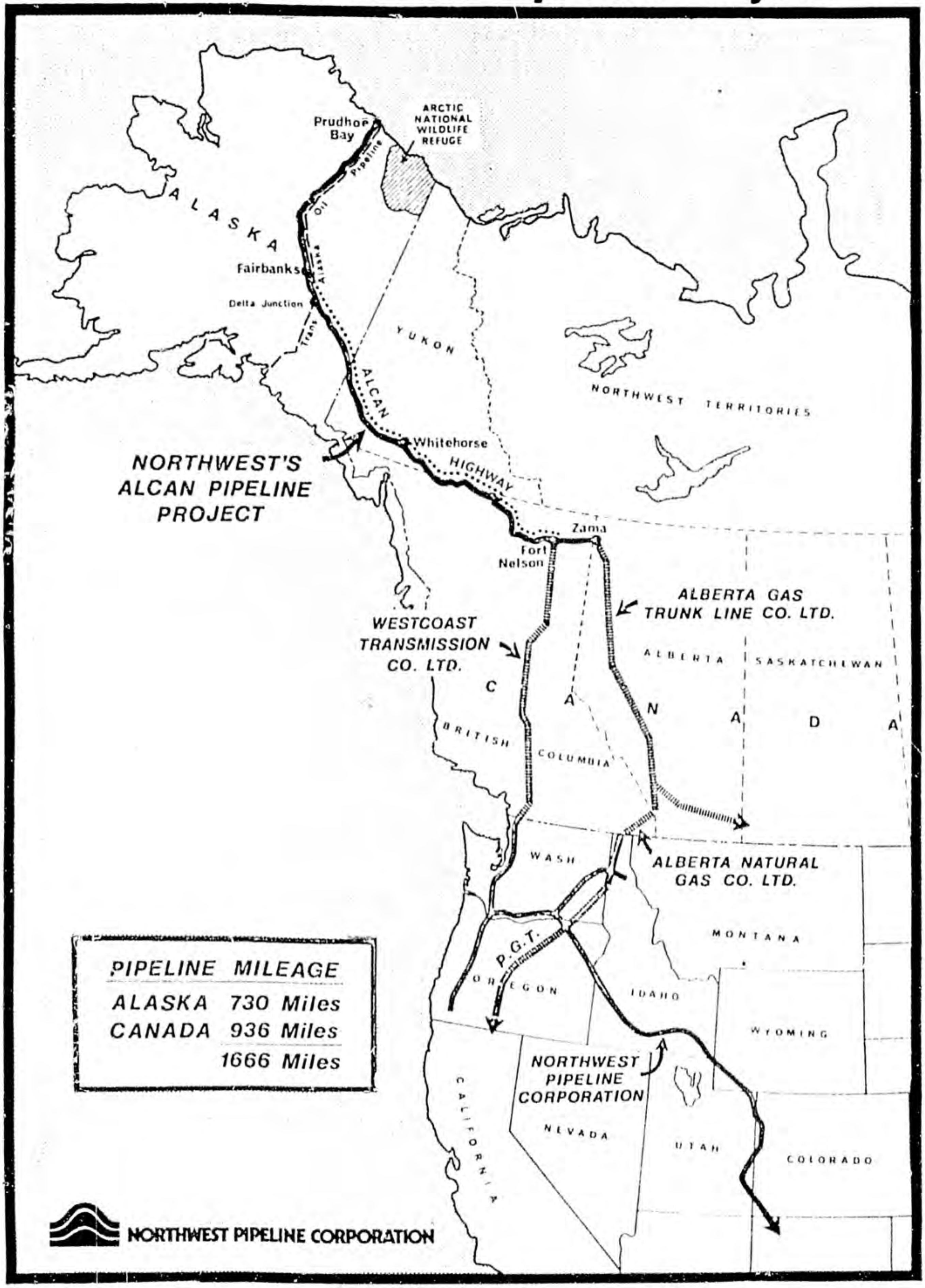
Northwest's Alcan Pipeline Project



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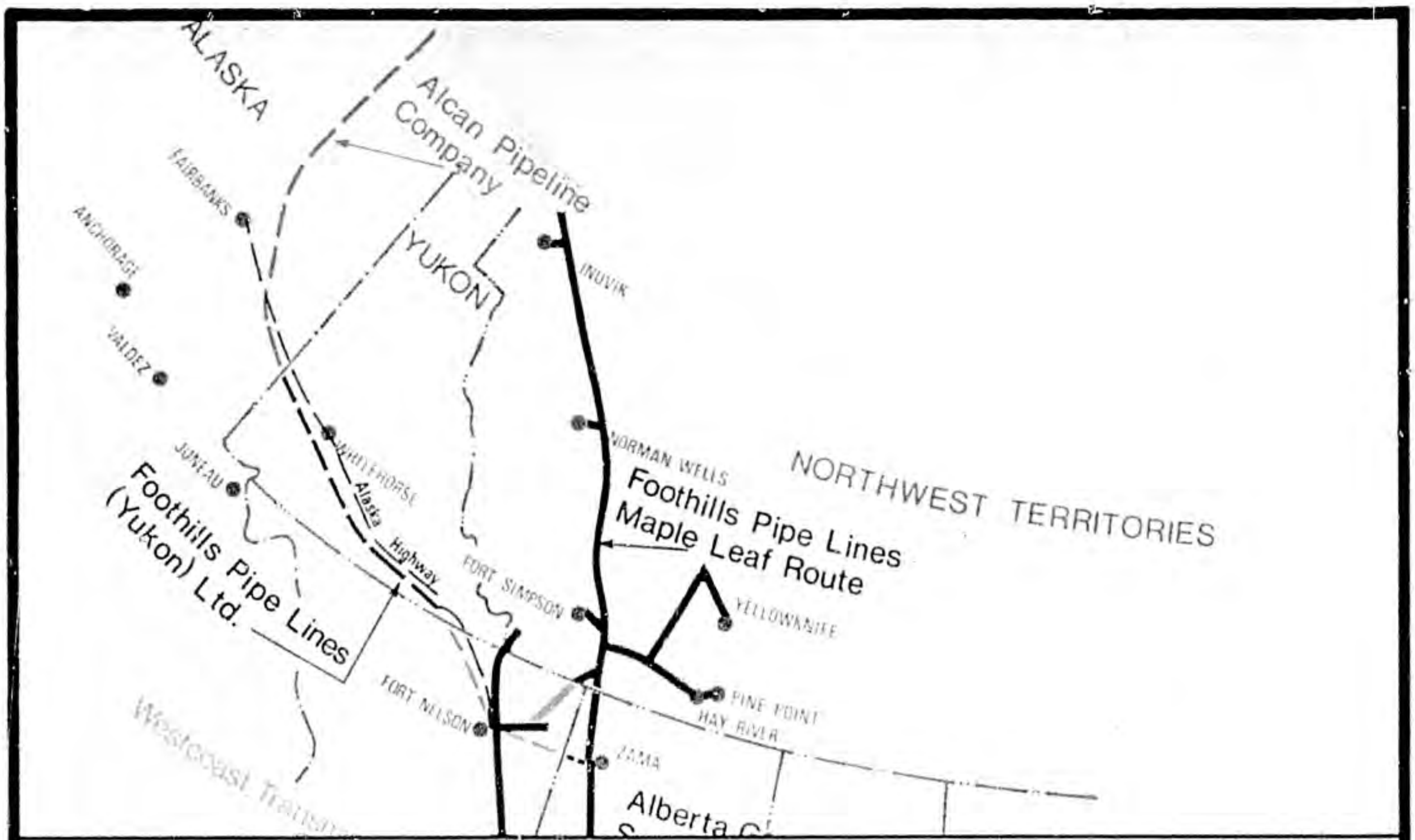
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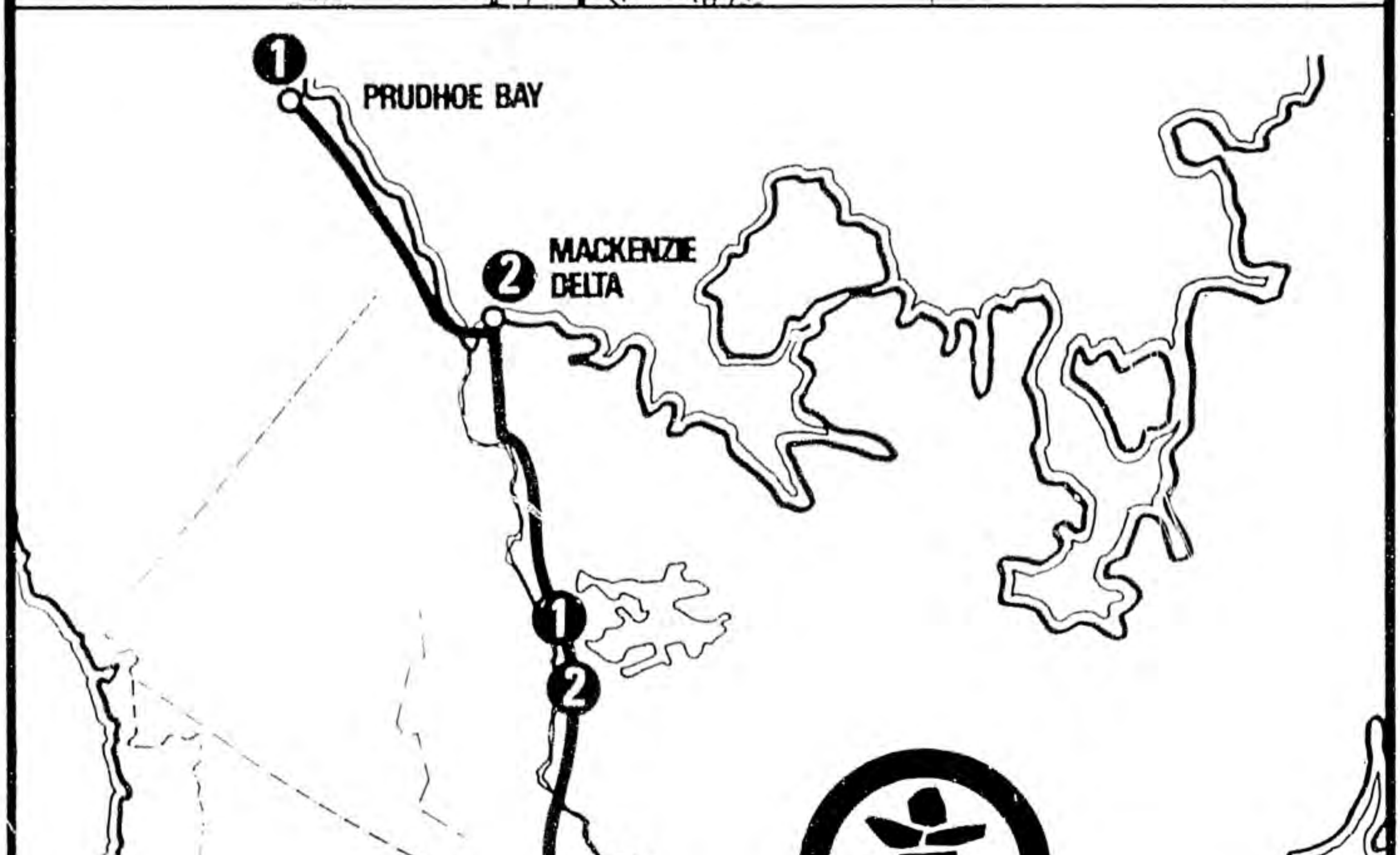
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"'Little haul road, don't you cry, you'll be a highway by and by.'"

"In the early stages of the Berger Inquiry, CARC looked at the problem of transportation needs. This study included an examination of corridors as a possible means of rationalizing various methods of transportation and minimizing social and environmental impacts. We got into difficulties right from the beginning. There was a lack of scientific data. Instead of a broad transportation policy within which trade-offs could be made, we found ourselves forced to deal with a "first-come, first-served" application for a gas pipeline. Our studies immediately became too detailed. We found ourselves focusing on the minutia of a pipeline; consequently, the evaluation of reasonable alternatives became impossible.

"We found much evidence that the Mackenzie River Valley route is not the best choice. More importantly, we concluded that before one can plan a northern route, one needs comprehensive resource inventory data, and that was lacking. The applicant and the federal government had given only a cursory look at alternatives.

"Although the Mackenzie River is a historical transportation system, it seemed very questionable whether any further demands should be imposed on its capabilities, especially for an oil pipeline and all its attending complications."

excerpt from CARC's appearance before the Standing Committee on National Resources and Public Works, 3 February 1976

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Volume III-IV of 'Northern Perspectives' outlined the engineering and construction plans for the Mackenzie Valley gas pipeline and discussed the method of route selection which governed the choice of the Prime Route. The following article deals with the comparative impacts of the Prime and alternative routes on the land and living environment.

"The proposed Alaskan Arctic Gas Company pipeline system would establish a new pipeline corridor in the North.

Associated with this proposal is the establishment of new air and possibly, or probably, road transportation in Alaska where none now exists. Development of a gas pipeline, road and air transportation not associated with the gas pipeline will promote the future establishment of related facilities — possibly including new oil and gas pipelines."

R.H. Weston
to Berger Inquiry
14 August 1975

Those who follow the debate over the Mackenzie Valley gas pipeline are aware that Canadian Arctic Gas and Foothills Pipelines are locked in fierce competition for the right to build the line. This should not suggest that their plans are entirely different; in fact, they have many similarities. Both intend to run the pipeline south from the Mackenzie Delta, along the east side of the Mackenzie River and into Alberta. They offer similar arguments for this choice, and accordingly encounter similar objections.

Both companies argue that the Mackenzie Valley provides the shortest distance between the supply and delivery points and hence is the cheapest route. They also argue that the valley provides a natural transportation corridor. Its relatively level topography eliminates the need for major re-routing during construction, and the established barge and wharf system on the river would ease material supply and logistics. Plans for the Mackenzie Highway along the east side of the river also affected their choice, although it is now doubtful that the highway will be completed beyond Fort Wrigley in the southern Mackenzie region.

The environmental case put forward by industry is that the shorter the line, the less the disturbance. Their engineers maintain that the Mackenzie is a natural seam facilitating pipeline construction with minimal disruption. Their testimony stated that enough research has been carried out to identify the essential problems and to avoid or minimize them, and what minor route amendment could not avoid, winter construction and careful monitoring could protect.

These arguments sound convincing, but the Mackenzie Valley will present complex engineering problems. Although the valley provides a relatively level topography and is lower than the surrounding terrain, it is poorly drained. The high proportion of ice-rich permafrost soils and bogs — often juxtaposed — would require remedial and preventative measures for much of the route; otherwise the pipe would heave and break, or alternatively, be washed out. Considering that the remedial and preventative techniques have been poorly tested and that there is little on-site soil information (*Northern Perspectives*, 'Technology & Optimism', III-I), it is also clear that there would be many on-site revisions. The construction and maintenance efforts could therefore be much greater and more expensive than anticipated. This has been the experience of the Mackenzie Highway, now halted at 1/3 of its proposed distance.

Because the route lies in a major river valley, it would cross every stream and river that flows in on the east side. Terrain difficulties abound at these crossings and great possibilities exist for fuel and testing-fluid pollution, siltation or blockage of water flow, and erosion and slumping of banks adjacent to the pipeline and the winter construction roads. These problems could drastically affect fish, waterfowl and aquatic fur bearers such as beaver and muskrat. These species could also be vulnerable to disturbance from aircraft harassment, compressor station noise, and to other forms of habitat alteration. Many of these difficulties are avoidable, but only if the builder is willing to pay the additional costs of careful implementation and monitoring.

Nor have Arctic Gas and Foothills witnesses been able to dismiss the potential social problems. When their route was plotted on the map, it was drawn through or near the many Indian and Inuit communities along the river or in the delta. The Arctic Gas approach was that the project would be a boon to those communities by providing jobs and reviving what the company viewed as a sagging economy. Yet Justice Berger heard from every community that the traditional lifestyle and economy is still viable and that their land is neither the property of the government nor of industry to parcel out for development. Rather, they insist on aboriginal rights to their traditional hunting and trapping areas. After a land settlement they expect to be in a position to negotiate with regard to a Mackenzie Valley gas pipeline.

Vern Horte, President of Arctic Gas, was straightforward about the way these concerns fitted the master route plan. As he saw it, socio-economic concerns were "subjective and subject to flux." Claiming that it was impossible to avoid traplines and traditional hunting and trapping areas completely, he concluded that "efficient construction of a pipeline with a minimum of environmental disruption is a most practical way of minimizing interference with these traditional pursuits." The route choice, he said, involved a tradeoff between locating the line further away to minimize impacts or to placing it closer to the communities to give the local people a chance for the "beneficial effects in the form of employment, infrastructure improvements, etc." But the Indians and Inuit living in those communities would have no say in any such tradeoff about their future.

It is not only the Mackenzie Valley that is threatened by Arctic Gas's choice of the Prime Route. The Arctic Gas line involves the lateral from the Alaskan Prudhoe Bay fields across the Yukon to the Mackenzie Delta. Foothills has admitted that it is investigating a similar plan, but at present is content to rest its case on a rather sanctimonious comparison to Arctic Gas, promoting its all-Canadian image and its willingness to want to take delta gas in the 1980s. For the moment, it is the Arctic Gas proposal which will determine much of the future of the northern Yukon, an area rich not only in terms of its abundant wildlife but in the fact that it is a key link in the evolutionary chain of life in North America.

The preferred or Prime Route of Arctic Gas traverses the coastal region of the Yukon, a route opposed by the company's own ornithological consultants. Along the coast of the Beaufort Sea are found migrating Arctic terns, sabine gulls, and jaegers from the Antarctic and other southern areas; Pacific brant from coastal Mexico and California; and murres, eiders and glaucous gulls from the north Pacific and Bering Sea. Whistling swans move westward in the spring from the Mackenzie Delta and travel along the Yukon and Alaska coast. The populations of some of these bird species number into the thousands, with some — such as the eider duck — approximating over one million. The calving grounds for the Porcupine caribou herd are also on the Yukon coast. Scientists agree that these animals are most susceptible to disturbance during this stage of their life cycle. Although Arctic Gas gives assurances that winter construction work will have ceased before the vast herd migrates to the coast, experience with the Alyeska oil pipeline has shown that tight schedules are impossible to maintain. Work stoppages would be inevitable along the Arctic coast where fog, harsh temperatures, and winds would limit the productivity of the construction spreads and the progress of snow roads essential to protect the terrain.

Since Fort Simpson and cross delta route changes involve half the length of the entire project and were not introduced until late in the Inquiry, they should not be considered as part of the application. In the opinion of the Environment Protection Board, these new proposals require the intensive assessment that the first application received.

Arctic Gas has introduced two fundamental route changes as part of its Prime Route. The first, known as the Fort Simpson amendment, avoids an unstable crossing of the Liard River but passes through the Ebbutt Hills, which have been recommended as a site to be preserved under the International Biological Program. The Foothills route skirts the Ebbutt Hills.

The second major route change is a more contentious one. This new Cross-Delta Route had first been discounted by the company since it did not appear feasible from an economic or engineering standpoint. However, studies continued and the company's skeptics were soon converted. The fact that it is one hundred million dollars cheaper than the original route helped to weigh the scales in its favour. The environmental repercussions of this choice are much more serious than the impacts of the initial route. Thousands of snow geese and other waterfowl use the Mackenzie Delta as a nesting and staging area, grazing on the grasses and sedges of the low flatlands. Like the caribou, the snow geese are a traditional food source for the native people and are an integral part of their economy. According to COPE witness, Tom Barry, an ornithologist with the Canadian Wildlife Service, the Arctic Gas proponents have chosen some of the best waterfowl habitat for their revised Prime Route.

Furthermore, when this route crosses Shallow Bay, extreme precautions would be required to protect the beluga whale population. Knowledge of the annual travel routes of the beluga is limited, as is the research base for predicting the impacts of noise and other disturbances on calving. Whales arrive in the mouths of the main delta channels in late June or early July and stay until mid-August. They tend to seek out the warmer, shallow waters which are

Nanisivik

The Department of Indian Affairs and Northern Development (DIAND) has pointed out some inaccuracies in our article "Nanisivik" in *Northern Perspectives* volume IV-II-1976. We are happy to print the following corrections:

The first is a minor point. We stated that "the federal government purchased an 18% equity interest in Nanisivik." In fact, the government interest was obtained in exchange for the federal and territorial governments providing an airport, a dock, roads, and townsite facilities. It is expected that over half the cost of these facilities will be recovered from the company.

More significantly, we stated that "projects which are proposed independently by private corporations will not be subject to EARP (the federal government's Environmental Assessment Review Process) unless federal infrastructural assistance is contemplated." In fact, any project on Crown land may be subject to EARP, provided the environmental impact is judged to be significant by the department controlling the land — in this case DIAND.

Further, we were incorrect in asserting that the requirements of the Fisheries Act could be completely circumvented by DIAND in issuing a surface lease for the mine whose conditions would allow offshore dumping of tailings. Because the lease for the mine is for more than 640 acres, the Territorial Lands Act requires that the lease be approved by Cabinet where the requirements of the Fisheries Act may be argued by the Minister of the Environment.

Bill MacLeod
Bob Gibson

more beneficial to the newborn calves. Since Arctic Gas will be dredging Shallow Bay during the summer months, the company will be challenged to schedule their activities to avoid disturbing the whales during this sensitive period.

Dr. Sergeant, of the Arctic Biological Station, St. Anne de Bellevue, discussed studies at Churchill River which indicated that although whales can generally tolerate human noise and activity, the calving population cannot. Most whales have abandoned their traditional calving waters at the Churchill River since development was initiated. As the estimated number of whales using the Mackenzie system is approximately 5000 — virtually the entire population of the Beaufort Sea — there is not a wide range of suitable waters in which these mammals can calve if their traditional areas are closed to them. Again, the success of the reproduction and rearing of these whales is vital to the subsistence and culture of the native people of the delta.

The hunters and trappers are equally concerned about the effects of the Cross-Delta Route on the habitat of the muskrat, beaver, and marten, which provide food and livelihood throughout the year. The delta is teeming with life during the summer months when Arctic Gas has scheduled construction. Various species of fish enter and leave these areas during their migrations and would be threatened by the siltation caused by dredging. When the timing is correct to mitigate the effects on fish, the timing will not be right for whales and birds, and costly environmental tradeoffs would have to take place.

Tom Barry has proposed that the Cross-Delta Route would have less overall impact of it were moved slightly south, but this would be more expensive and therefore less appealing to industry. Carson Templeton, Chairman of the Environment Protection Board (EPB), told Justice Berger that since Fort Simpson and cross-delta route changes involve half the length of the entire project and were not introduced until late in the Inquiry, they should not be considered as part of the application. In the opinion of the EPB, these new proposals require the intensive assessment that the first application received.

The Interior Route proposed by Arctic Gas is the company's second choice for a lateral line across the Yukon. It traverses the central Yukon in the vicinity of Old Crow. This alignment would affect two areas which are notably sensitive to birds: the Old Crow Flats, an important staging and breeding area of waterfowl; and the steep valley slopes of the Canning River, which are used as nest sites for gyrfalcon, the rare pere-

The State of Alaska has formally taken the position that no new lands, particularly those within the Arctic Wildlife Range, should be made available, as such access would pre-empt land use options for the future.

grine falcons, and other raptors. In spite of the expected impacts on these birds, ornithological witnesses testifying for Arctic Gas maintain that there would be even greater disruption to birds along the Prime Route.

One option along the Canning River is for the pipeline to cross at Marsh Fork. However, in order to protect its abundant wildlife, and its potential as a scientific study area, land officials in Alaska recommend that the Marsh Fork area "be closed to all development uses, including mining, oil and gas production, and other uses which would alter the existing ecology."

The other Canning River crossing directly affects areas which are extremely valuable as grizzly bear and moose habitat. In both sites, valleys tend to be quite narrow, there would be little hope that resident wildlife populations could avoid construction and maintenance activities. While the noise emitted by compressor stations along the coast could be disturbing to caribou and waterfowl, these stations would be especially damaging in the mountainous areas of the Interior Route, especially if they require ancillary facilities such as airfields and communication towers. There would likely be a station in the sensitive Marsh Fork Valley. Dall sheep, which besides caribou are the only surviving herding herbivores from the preglacial period, would be seriously affected by the Interior Route in terms of both increased access and construction activity. In addition, fish biologists feel that the Interior Route would pose a greater threat to fish populations than the Coastal Route.

Both the Interior and Coastal routes affect the area of the Yukon which archaeologists and ecologists value for its unique character. The northern Yukon was the only area not glaciated during the Ice Age, and as a result, vegetative species extinct in other parts of North America flourish there today. The region can unlock several archaeological mysteries if researchers have the opportunity to delve into the many sites. Already they have proved that giant beaver, camels, elephants and horses were once indigenous, as well as other large animals now extinct.

At the same time as these species were being uncovered, scientists found proof that man had been hunting them as far back as 30,000 years ago. These records provide the earliest evidence of man in North America. The lifestyle of the ancestors of the Loucheux — or Kutchin — people of Old Crow can be traced in the remains of caribou fences or corrals which show a consistency of land use over the ages as well as a uniformity in the migration patterns of the caribou. Furthermore, the high mountains, rivers, wetlands and slowly melting permafrost lakes, barrier beaches and lagoons along the coast are wordless arguments for the protection of the area.

For these reasons, the establishment of the Canadian section of the Arctic National Wildlife Range in Alaska is being promoted as a means of ensuring the preservation of this ecologically rich and sensitive area. This proposal would not ban all resource extraction, but would closely control all such activities, and if necessary ban those inconsistent with the wilderness character of the range. The proposal also recognizes the primary use of the land by the native people, particularly those in Old Crow who still rely heavily on trapping in the nearby Old Crow Flats and hunting the caribou. Officials of Arctic Gas maintain that a pipeline is compatible with the concept of the Alaska Wildlife Range but admit that if the U.S. government forbids their intrusion into that area, they would build either along the Interior Route or would even consider a more southerly routing.

Environmentalists fear that year-round access along either route would inevitably open up the area. Development of either route would initiate a new corridor along the alignment and the likelihood of a permanent haul road makes this prospect more alarming. Exploration would increase and the wilderness character of the range would eventually disappear. Any development such as a pipeline would prevent the Alaskan range from being classified as a wilderness area under the Wilderness Act in the United States, the only legislation tough enough to ensure its preservation. Summing up the case for the International Wildlife Range, Andrew Thompson, Chairman of CARC, argued that: "Since there are values that are intangible, that can't be expressed in dollar terms but which have a strong response from people here in the Yukon, from people in Canada and the United States and even around the world, somehow or other these have to be weighed against the cost savings that are principal reasons for the selection of this route."

It is CARC's position that neither the government nor the pipeline companies credibly examined alternative routes.

> *"The applicant (Gas Arctic) is proposing a temporary road of 375 miles from the Circle almost to Old Crow, and then across to the Dempster Highway at Fort McPherson. If you have a 375 mile gravel road of two to maybe six feet of gravel to protect the permafrost, it's going to be almost politically impossible to prevent the connection of the Fairbanks network of roads with the Dempster Highway through to that area. Then you've ruined hundreds of square miles of land on all sides, the wilderness and the lifestyle of the Old Crow Indians. Long ago, Bob Marshall, that great Alaskan Arctic explorer, wrote about temporary haul roads:*
>
> *'Little haul road,*
> *don't you cry,*
> *You'll be a highway by and by.'*
>
> *And all over the United States that has proven true, that when you make a temporary road it just gets better and better until it's finally there forever."*
>
> [illegible] to Berger Inquiry
> 13 August 1975

The Committee called Dr. Murray Roed to discuss possible alternatives. He recommended examination of a route roughly 50 miles west of the existing Mackenzie Valley corridor, east of the Franklin Mountains. This route would follow the crest of well-drained ridges for 60 per cent of the distance and would, in his opinion, minimize the erosion and heaving problems of the pipeline. He pointed out that compared to the Mackenzie Valley, the abundant deposits of much needed gravel for construction and the prospect of fewer water crossings (the route parallels drainage) would make this alignment preferable, not only for the gas pipeline, but for any other form of transportation, such as oil pipelines or highways. The main strength of the proposal is that if the hot oil pipeline is built it would be much safer away from the Mackenzie River Valley. This longer range perspective, Dr. Roed argued, should be the basis for choosing the location for the first major project for the region.

On the negative side, sufficient soil data are lacking to be able to verify the advantages of the route in detail. Logistics would be more difficult and expensive than in the Mackenzie Valley as no access to this route exists at present. Also, the route may be no more acceptable to native groups since it involves areas which are part of their land claim. Despite its problems, the fact that this route may be a plausible alternative to the Mackenzie Valley route illustrates the lack of serious or comprehensive study of alternatives by the industry or government.

An option avoiding both the wildlife ranges and the Mackenzie Valley is the Alcan Route. This route, rejected by Arctic Gas, has nevertheless received great attention from the other participants. Under this scheme, Prudhoe Bay gas would be brought south along the alignment of the Alyeska oil pipeline to Fairbanks, Alaska. South of Fairbanks, the pipeline would follow the route of the Alaska Highway into Canada. Delta gas would follow the Dempster Highway to meet the Prudhoe line at Whitehorse, and the line would then proceed southeast to Alberta.

Generally, Arctic Gas objects to this option on the grounds of additional length and extra expense. Its spokesmen also say that the route would be too far away from areas of probable hydrocarbon deposits (mainly in and near the wildlife ranges) and that its length would dictate a construction schedule too tight for completion within the three year period dictated by the economics of repaying money borrowed for construction.

On other grounds, Arctic Gas objected because the mountainous terrain in Alaska would require more blasting during construction, more surveillance for rock slides during operation, and the narrow passes would reduce the flexibility to route around problem areas. This could particularly affect dall sheep lambing areas, bear denning sites, and raptor nests. Although the Porcupine caribou calving and summer range would be avoided, the route would still pass through some critical wildfowl nesting and staging areas on the coastal plain south of Prudhoe Bay. The route would parallel drainage which Arctic Gas claims is a disadvantage for erosion control and hence for the protection of fish. Finally, the route would pass through an area near Fairbanks of higher earthquake risk. In Canada, the main route would skirt the new Kluane National Park and further south, traverse extensive moose habitat. The delta lateral would intersect the Porcupine caribou herd on its winter range and would be built along very difficult ice-rich permafrost terrain.

A stronger indication of the attractiveness of the Alcan Route along the Alaska-Canadian highway has arisen. The Federal Power Commission (FPC) of the United States recently accepted the application of a consortium known as the Northwest Group to build a line from Prudhoe Bay along the Alcan Route to connect with the existing facilities of Westcoast Transmission, Alberta Gas Trunk Line and then to U.S. facilities.

The Northwest Group has also filed to have its application accepted by the National Energy Board (NEB) in Canada. In light of the FPC decision to accept it as a contender in the American project, it would seem unlikely that the NEB could refuse to weigh it in its deliberations. There are four general advantages to such a route:

- it would not disturb any new territory. The State of Alaska has formally taken the position that no new lands, particularly those within the Arctic Wildlife Range, should be made available, as such access would pre-empt land use options for the future. An oil pipeline and a highway have far greater impacts than a gas pipeline, and the route south from Prudhoe Bay would run through territory already opened by the Alyeska oil line and the Alaska Highway. The Alaskan oil pipeline has had a major impact on the areas it has crossed and technical and environmental experts have urged that the gas line follow this alignment where damage has already been done;
- by following the oil pipeline and highway alignments, duplication of facilities (and therefore greater impact) can be avoided through the use of existing airports, work areas, and supply roads;
- the existing on-site information from construction of the Alyeska pipeline and the Alaska Highway would virtually eliminate the likelihood of surprises in the field. As these are highly probable in the undisturbed Mackenzie Valley and northern Yukon, it would be easier for the Alcan project to live up to the protective measures required of it and to stay within its budget. As implementation of the protective measures is essential to environmental protection, such protection would be greatly enhanced along this route;
- unless there is a policy change under its new leadership, the Council of Yukon Indians views this route with least opposition pending a land settlement, while it rejects outright both the Prime and Interior routes.

Two other routes were mentioned during the Mackenzie Valley Pipeline Inquiry — neither of which have been favourable to either the gas industry or the interveners because of the hurdles involved. It is futile to discuss the possible routes for a gas pipeline without looking at the implications of a total development plan. Even when the Berger Inquiry was first created, the Pipeline Guidelines stipulated that it look at the impact of an oil pipeline as well. The Inquiry was not to ignore the possibilities of a railway, hydro development or communication systems that could possibly follow a gas line. Although the latter are still hypothetical, a group known as the Beaufort Delta Project is currently preparing an application to build the oil line. It is likely that cost savings will be the criterion in building the oil line close to the alignment of the gas pipeline in order to take advantage of facilities such as access roads and air strips. Add the strong possibility of a second gas pipeline or a "looped" line if reserves prove sufficient and the impact projections intensify.

A case in point is the Dempster Highway from Whitehorse to Inuvik, which is in the final stages of construction. Arctic Gas environmental consultants were told to present the company and the Inquiry with only the potential impacts of a gas line, despite the fact that the highway will cause considerable disturbance. If the Interior Route were built, caribou enroute to their calving grounds on the coast might be faced with the crossing of two buried gas lines, an above ground oil pipeline and a highway travelled by curious tourists. When some of these consultants did try to get government reports related to the technical and environmental matters along the Dempster, they were refused because these were not public documents.

It must be clear that the evidence before Justice Berger on these and other less attractive routes has still not produced any easy answer. What the experts have told us, however, is that further developments of far greater potential impact would follow a gas pipeline and that these would be far more difficult to control. From this it follows that without control and without planning, this particular transportation system — a gas pipeline — would set in motion events affecting all the land in the region and the use made of that land.

Currently, land use planning is rudimentary in the North. The land use regulations in force are designed to control exploratory operations only, and they are ill-designed even for those, let alone for major projects or for regional control. The philosophy has been the felicitous "multiple-use" concept of land use that sees no conflict between development and the environment or the use of land by the native people, just as it sees no conflict between underwater seismic explosions and harvesting of seals and fish in the Beaufort Sea. According to this view, there need be no conflict between an open pit mine and a bathing resort.

A major study of existing land use legislation and practices and of mineral and environmental resources, is required as a base before planning can proceed. The only work to date has been extremely narrow in scope, compiled in response to project proposals such as the Mackenzie Valley pipeline. The gaps in elementary knowledge are

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stupefying, yet little is being done to remedy them.

The first major element before planning can progress is a land settlement for the native people of the North. Planning that ignored the need for such a settlement or its results would be unworkable as well as unjust.

But if impact assessment is subjective, so is planning, and for that reason wide access to the planning process and participation is essential. Current government practices whereby information is difficult to obtain must cease, in order for planning to be conducted effectively.

The Berger Inquiry cannot be a planning process because the preliminaries are not settled. Despite the popular journalism that sees Justice Berger as setting the course of future northern development, his jurisdiction is actually quite narrow. His mandate is to examine the regional impact of a gas pipeline and ensuing related developments; there is a limit to how far that mandate can be stretched. Furthermore, he is under great pressure to report by the end of 1976, and would have little time to examine planning possibilities widely even if he wished.

What Justice Berger can do, however, is recommend conditions for the gas pipeline that would allow long-range planning to proceed without being preempted by a barrage of facilities to supply southern demand for oil and gas. He has already set a precedent for openness in the decision-making process in the North.

Assuming the goals are to maximize planning flexibility and protection along the pipeline route, it seems that two options exist: to institute a land freeze pending results from the planning process, or to allow Arctic Gas or the new consortium to proceed using the Alcan Route.

In fact, these two options are not mutually exclusive. It is unlikely, however, that a freeze alone would be acceptable because the Canadian government is under great pressure to honour its commitments to the U.S. to allow passage of U.S. gas through Canada (*Northern Perspectives*, Volume IV-I). Permitting construction of the line along the Alyeska oil pipeline and Alaska Highway routes would honour this commitment without disturbing new areas. As the urgency to bring delta gas south seems less pressing than previously thought, there is still time for reasonable planning.

Delay would allow time for land claims settlements, further consideration of the Foothills proposal, of the Arctic Gas delta lateral proposal, and of the recent proposals to integrate gas transmission from the delta with the gas from the Arctic Islands. This extension would allow planning to proceed for northern land use and national energy policy. Precisely because modern development is only now arriving in the North, a tremendous range of choice exists in how that development shall or should take place. This has made it too easy for the general public to expect so much of Justice Berger.

John Jahn
Pat Anderson

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Editing & Production	**E. Van Alstine**

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NATURAL GAS SUPPLY
OUTLOOK FOR
THE WEST

SUMMARY OF COMMENTS

BY

ARLON R. TUSSING

AT

NATIONAL ECONOMIC RESEARCH ASSOCIATES, INC.

WORKSHOP ON ECONOMIC GROWTH IN THE WEST

AND RELATED ENERGY PROBLEMS

Los Angeles Marriott
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1. It no longer means much to speak of a gas supply outlook for the Pacific states as distinct from the outlook for the contiguous 48 states as a whole. With a nearly complete nationwide gas transmission network and transmission loads that are stagnant or declining, an abundance or shortage of gas in one region can be shifted to any other region or spread evenly across the country, without major investments in new transportation capacity.

2. The emergence of a single national market for natural gas is of course inhibited by FPC wellhead price controls, whic discourage both interstate sales generally and reallocatic of gas among interstate purchasers. And existing long term sales contracts together with the need for certification and abandonment procedings before the FPC and state commissions make even the most economically logical exchange and displacement arrangements difficult to put into effect.

3. Nevertheless, if institutional obstacles effectively prevent the smoothing out of gross regional disparities in gas supply, we can expect Congress to give the FPC authority to reach into intrastate markets, to allocate new natural and synthetic gas among regions, and perhaps even to reallocate flowing gas among interstate pipelines.

4. Congress would surely direct the FPC to allocate gas nationally if it were to approve any LNG system for the delivery of North Slope natural gas, which would require large areas of the United States to receive new gas supplies by displacement rather than directly. Approval of a MacKenzie or Alcan system without a western leg would also strengthen the demand that the FPC have direct allocation authority. Such an outcome would be unfortunate because any non-market allocation system would blunt the incentives of transmission companies and gas utilities to solve their own supply problems.

5. It is possible to make some broad generalizations about both the commodity value and the cost of gas on a national scale. The demand for gas can be separated into three main components: (a) a premium market in which only electricity is a competitive energy source, (b) an intermediate market in which refined petroleum products (distillate fuel oil, naphtha, propane, etc.) are effective substitutes, and (c) the "black fuels" market in which natural gas can displace coal and residual fuel oil only when it is cheaper.

6. The intermediate market, which is composed of household and small commercial space heating, and use for crop drying, in combustion turbines and for chemical feedstocks

(plus utility boiler fuel in times and places with severe air quality problems), is by far the major part of total consumption, so that all plausible projections of United States natural gas supplies through 1990 fall into this intermediate segment of the demand function. For this reason the long-term commodity value of gas will be equivalent, more or less, to the cost of refined petroleum products. Assuming that the real price of imported crude oil remains about the same as it is today, we can anticipate a long-term demand price for gas of $2.50 to $3.00 in 1976 dollars.

7. The demand price for gas will be somewhat higher than that of distillate fuel oil if total gas supplies continue to decline over the period, because the alternative to gas for many consumers will not be simply the substitution of a petroleum product but will also include the cost of converting or replacing existing gas-burning equipment.

8. The average (rolled in) cost of gas will be just about equivalent to this commodity value or demand price. Pipelines and distributors will continue to get some quantity of gas purchased on long term contracts or controlled at less than its commodity value. They will therefore be able to augment these low price conventional supplies with just enough high cost gas "supplements" at $4, $5, $6 or more per Mcf, to bring their average price up to the demand price.

9. For this reason deregulation (or the level of regulated gas prices) can not be expected to have a great effect on the average price consumers pay for gas. It might, however, have a powerful influence on how much gas is available at that price (although the direction of this influence is not obvious -- see footnote), and upon the economic cost to the nation as a whole of its gas supply. (The national economic cost would be lowest under deregulation, but the larger part of the net benefit would be captured by gas producers rather than by consumers.).

10. The most certain and economical source of additional gas for premium and intermediate markets are the volumes now being burned under industrial and electric utility boilers and as refinery fuel. End use controls

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The question hinges on the responsiveness of conventional gas supplies to price. If supply is relatively price-inelastic, the main impact of deregulation or higher wellhead prices would be to transfer revenue to gas producers and royalty owners at the expense of the pipelines and distributors. Since the latter would otherwise have used this revenue to finance the purchase or production of high-cost gas supplements, total gas supply would be less than it would be at the old regulated prices. On the other hand, if the supply of new reserves of conventional gas is highly responsive to price (as I believe is more likely), an additional dollar paid to the gas producers will elicit a greater volume of gas than the same dollar spent on such projects importing LNG or manufacturing SNG from coal or oil.

by the FPC and state authorities are already encouraging such a shift. But in order to employ existing reserves most efficiently around the year, elimination of interruptible sales for low-priority use must go together with investments in storage facilities and in increased peak deliverability in the field. Incentives for the latter adaptation are now blunted by price controls, but added storage is probably a worthwhile investment for almost every gas transmission company or utility.

11. The main supplemental sources of gas appear to be Canadian pipeline imports, LNG imports, Alaskan natural gas and SNG from coal and petroleum.

12. The price of future Canadian imports is reasonably predictable, but their volume is not. The Canadian federal government and Alberta have adopted an explicit commodity value standard for gas pricing in both domestic and export markets (though it is being implemented more slowly for Canadian consumers), and there is little reason to believe that this policy will be changed.

13. The approximately 60 TCF of presently proved reserves in the Western Provinces are sufficient to serve projected Canadian demand plus existing export commitments for about 10 years without creating deliverability problems. A continuation of recent Alberta discovery

trends may be sufficient to assure that existing export contracts will in fact be honored. But there is no development, short of huge discoveries (perhaps another 60 TCF) in the Arctic that would be likely to induce the Canadian government to approve new export commitments.

13. The sufficiency of present supplies to Canada for about ten years, means

that any Mackenzie or Polar pipeline will be superfluous to Canada's needs for at least that period, unless reserve volumes justifying exports are developed. This implies that there is no urgency for Canada in an early determination regarding the desirability, scale or timing of a Mackenzie Valley pipeline.

14. Large LNG import projects, coal gasification, and facilities to deliver gas from the Alaskan (and/or Canadian) Arctic to Lower 48 markets share several features which raise serious questions about their economic viability or practical feasibility. Each of them requires large, "lumpy" investments -- in the billions or tens of billions of dollars -- and involves unproved technology or a substantial scale-up of proved technology. Some proposals involve a unique physical or institutional environment e.g., the Arctic Gas proposal and Indonesian LNG) in which no engineering projects of their magnitude has ever been attempted. Each of them involves numerous regulatory jurisdictions, including more than one sovereignty or quasi-

sovereignty (states and provinces). Each of them involves major environmental and safety issues, real or imagined, usually in more than one regulatory jurisdiction.

15. The construction and operating cost projections offered by the proponents of each of these gigantic capital-intensive projects are already near the margin of economic feasibility, even assuming the absence of major delays, technological or engineering false starts, or cost overruns.

16. Recent experience with military procurement, nuclear power plants, the Trans-Alaska pipeline and other large custom-engineered construction projects indicates that all the large supplemental gas projects are exceptionally vulnerable to delay and cost-overruns, if not to non-completion.

17. The scale of these projects typically exceeds the net worth of their sponsors, precluding conventional secured financing. Uncertainty about construction costs and completion dates, aggravated by political and licensing uncertainty make no-recourse debt financing equally improbable. Each project therefore probably requires government loan guarantees (increasing their vulnerability to political opposition) and/or all-events tariffs,which state commissions are unlikely to approve.

18. In short, I believe that the odds are against any supplemental gas supply facility with a total projected capital cost of greater than $1 billion. The chances that all the supplemental gas projects considered necessary to provide an adequate gas supply to any region (e.g., California) will be actually completed, is nil.

19. Of the three proposals for transporting North Slope gas, the Alcan project is in my judgment the most credible, even though the comparison of pro-forma cash flow projections would seem to favor Arctic Gas. By using conventional pressures, pipeline size and construction technology, already developed transportation corridors, and existing pipeline routes and systems in Western Canada, Northwest Pipeline's Alcan proposal avoids or mitigates the major sources of cost overruns. Moreover, Alcan is the only proposal of the three which does not depend for its feasibility on larger volumes of gas than can be assured from presently proved reserves.

20. The Alcan proposal is probably the least vulnerable of the three to political opposition on regional or sectoral grounds. It does not involve the siting and safety issues of the LNG system, but unlike Arctic Gas, it is favored or at least is not vehemently opposed by any of the states or provinces (including Alaska and Alberta) which it must transit. The Alcan concept is the one favored by the major U.S. environmental organizations. Native claims issues, moreover, seem to be closer to resolution in the Yukon than in

the Northwest Territories.

21. The synthesis of pipeline quality gas from petroleum does not suffer from most of the handicaps of coal gasification or of the other capital-intensive sources of natural gas supplements. Here again, as in the case of the alternatives for transportation of Alaska gas, a priori cost comparisons may be deceptive. SNG from oil appears to be more costly than SNG from coal, but this comparison ignores the fact that it is a proved technology on a commercial scale, that its optimum economic scale of plant is an order of magnitude smaller, and that the feedstock is (barring a new embargo) available in unlimited quantities.

22. The smaller scale and general abundance of feedstocks for SNG plants using petroleum fractions (naphtha or LPG) means that each plant can be located within the consuming state, (freeing it from FPC jurisdiction), within the service area of the pipeline or utility which distributes it (reducing local opposition), and in a site chosen for environmental acceptability (rather than one dictated by location of the resource or by proximity of a deep water harbor). For all of these reasons, I suspect that the West Coast gas industry's ultimate recourse when almost everything fails (as it probably will) is the construction of decentralized SNG plants using naphtha feedstocks from overseas (or even Alaskan) topping plants which ship their residual crude oil fractions to Japanese or Atlantic customers.

23. The best bets for new pipeline gas supplies, I believe, come from state-of-the-art technologies and scales of effort, not from ten year leaps into the future and tenfold leaps in size. The source of gas that best meets this standard is conventional natural gas conventionally extracted. Exploration for gas (and for oil, which is found in similar environments by the same techniques) is an entirely different kind of business from producing synthetic fuels or building major gas transmission projects or the maximum scale electrical generating plants. The minimum unit of physical capital, a single wildcat well for instance, ranges in cost from tens of thousands of dollars to several millions -- a scale on the order of one thousand times less than the investment thresholds for coal gasification, oil shale, nuclear power or Arctic gas transmission.

24. There are literally thousands of enterprises in the oil and gas producing industry, with perhaps hundreds that are large enough and progressive enough to stand on the cutting edge of new technology. The journey to new frontiers of gas exploration and recovery, whether they are technological frontiers, deeper or stormier water, permafrost or deep rocks, can be taken in small steps, with part of the industry consolidating information and techniques from the last step while other firms take the pioneering risk.

Onshore, the payoff to exploration investment can be a matter of weeks, and is seldom more than two years. Offshore and in the Arctic, it may be three, five or seven years, but seven years is probably the minimum lead time for the big-ticket gas supply projects.

25. Regarding the potential price-responsiveness of natural gas supply, there are an incredible number of different opinions. It is obvious, however, that FPC price controls are not a major obstacle to exploration and development in any state large enough to have a significant intrastate gas market: these include present net exporters of gas like Texas and Louisiana as well as net importers like California. It has now been three years since the Arab embargo and the energy price revolution, so that some evidence one way or another on the price responsiveness of conventional onshore gas supply ought to be available before long.

26. Price controls on gas may or may not be an effective deterrent to development of new gas resources on the Outer Continental Shelf, but they are not the major deterrent. It is unfortunate that environmentalist opposition to energy development has been most effective here, because OCS oil and gas will be in my judgment/the least environmentally harmful source of large new supplies of primary energy for the United States, as well as the least costly in terms of real economic resources.

27. In summary, small seems indeed to be beautiful in energy supply alternatives. Or, at least, small is practical given today's political and financial realities. At the same time, I would urge along with the ecologists that diversity is stable, and so is decentralization. Diversified and decentralized systems are also more predictable in the aggregate. For this reason, a strategy for gas supply which depends mainly on a few large coal gasification and Eastern Hemisphere LNG projects and on the Arctic Gas pipeline stands a large risk of total failure. A strategy which puts even half of the cpaital projected for these projects into storage and increased peak deliverability, into conventional and modestly innovative onshore and offshore gas exploration, into SNG from naphtha facilities, into small LNG projects (as in Cook Inlet), and into a minimum scale transportation system for North Slope gas (like the Alcan system) may not yield the grandiosely optimistic projections for 1985 or 1990 gas supply which industry and government agencies like to put on their charts. Such a strategy will, however, surely and predictably produce enough gas at acceptable prices to serve the premium markets, and will continue to make some contribution to satisfy the intermediate market.

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after a ten minute recess and we will be prompt on ten minutes.

(Whereupon the hearing was recessed at 2:50 p.m. and reconvened at 3:00 p.m.)

SENATOR RADER: The committee will come back to order. We have asked Dr. Tussing and his associate to appear out of order or they rather asked that they might appear out of order, Mr. Scott, because of commitments that they have tomorrow.

Dr. Tussing, we will follow whatever order of presentation you and Mr. Scott think would be most appropriate. Do you wish to make a presentation first and then questions? Would that be the way of proceeding?

DR. TUSSING: Well, I think the way to proceed would be to let Dr. Scott go first and then to ask questions of him and I might have some comments on his answers. Dr. Scott has done an analysis of the Task Force Report and the documentation by the Department of Revenue for the Task Force Report. It is a technical analysis.

I intend to range more broadly on national and international political aspects of the contract. I am willing to take responsibility for everything that Dr. Scott is going to say because I have read his analysis. He can't take responsibility for what I am going to say because I don't have a prepared statement and I was not quite sure what topics I was going to handle before I got here. So don't blame him for anything nasty or unpopular that comes from this side of the table.

SENATOR RADER: I'd like to have both you and Dr. Scott, you are appearing here as expert witnesses and, therefore, a statement of your background and your qualifications would be appropriate in the record.

DR. SCOTT: My name is Dr. Michael J. Scott. I am an assistant professor of Economics at the Institute of Social and Economic Research, University of Alaska. I am a professional economist with a Ph.D. in Economics from the University of Washington. I am associated with the Institute's Man-in-the-Arctic-Program, which is an econometric modelling effort of Alaskan economy, and I have specialties in natural resources, public expenditure modelling and Alaskan cost of living.

I was requested by the committee to evaluate the report, "A Comparative Evaluation, Prudhoe Bay Natural Gas Pipeline Systems", prepared by the Gas Pipeline Task Force, November 1976, to check its technical accuracy as a supporting document to the sale of natural gas to El Paso, Tenneco, and Southern for the expressed purpose of securing an all-Alaska gas pipeline.

I was asked to do this since I had previously, in late November, evaluated for the Legislative Affairs

Special Subcommittee on Oil and Gas Taxation, a study by Dr. David Knudson of the Department of Revenue, which was titled "A Comparative Economic Study of Three Competing Alaskan Prudhoe Bay Natural Gas Transmission Systems", and possibly also since I was involved in the ISER studies on the subject of three gas transporation systems beginning in November 1975.

My comments, accordingly, will be directed to the internal logic of the section of the Gas Pipeline Task Force report entitled Economic Factors. I regret that I am unable to discuss the options for in-state use of gas. At the time ISER was doing its studies (that is April 1975 through June 1976), we were asked to look at only export options. We did this for the Department of Interior and the Federal Power Commission staff. Then, too, our analysis mainly took place before Alcan's proposal was before us, and there may have been delays in construction which we could not anticipate. We had thought, at the time we were doing our studies, that any of the gas transportation systems could have been started in 1977. This, of course, has proved not to be the case so far. There have been some changes in the state fiscal structure, so any studies we have done since the time we did them, have been overtaken by events related to the permanent fund. And so our analysis, while generally valid, has been overtaken to some degree so I don't want to be held to specific numbers that we have generated.

The economic factors mentioned in the state report are the cost of service, net benefits to the United States as a whole, fiscal impacts, impacts on the private economy and cost of living. The report makes several points with respect to cost of service, based mainly on a study which I mentioned previously I had evaluated earlier, the Department of Revenue study by Dr. Knudson. A large number of variables affect any cost-of-service calculation. Mentioned in the study are throughput, that is the amount of gas that would be forthcoming per day; total capital cost, I might add -- including overruns, if any; the rate of return to equity required by the company; inflation which could be generally categorized as the general decline in the purchasing power of money and then real price increases during construction; interest rates available. And I might also add the duration of the project, which affects the financing risk, and which I expect Dr. Tussing will mention.

The Department of Revenue technical report mainly shows that the cost of service considerations which they mentioned are favorable to the Arctic Gas line are extremely sensitive to changes in many of the variables which determine it, particularly volume of throughput and the capital cost. While Dr. Knudson does not treat the three proposals symmetrically, he does show that with Arctic Gas at eight-eighths of his proposed volume, that is the total throughput of, I believe, it was 2.5 billion cubic feet per day and with twenty percent cost overruns he is able to move the cost of service from One Dollar Eighty-One Cents per thousand cubic feet to around Two Dollars per thousand, while at seven-eighths of the volume or if the state gas were not available or if the throughput from the pipeline was not as expected, 2.5 billion, that moves the cost of service from -- I'm sorry. With seven-eighths proposed volume and ten percent cost overrun moves it to Two Dollars and Seven Cents, seven cents more; seven-eighths volume and twenty percent cost overrun yields Two Dollars and Seventeen Cents per thousand cubic feet. So that with only nominal cost overrun or changes in the volume of production which are within the realm of possibility, you can move cost of service all the way from One Dollar Eighty-One Cents per thousand up to Two Dollars and Seventeen Cents per thousand. That is holding everything else constant.

The Department of Revenue seems to imply by this -- from this to mean that Arctic is somehow less preferable; I think a more correct conclusion is that the cost of service is an extremely slippery entity. While the calculations are worth doing as illustrations, we can't know how the cost of service will be influenced by the various parameters at this time, so I don't feel that the argument that for any of the lines ought to heavily lean on the cost of service. The relative costs of service mentioned in the Task Force report may well hold, that is that Arctic would have the least cost of service, I believe it is El Paso next and Alcan the highest. Whatever the relative costs are there are large differences between the two studies they mentioned in the Knudson report and the Pipeline Coordinator's office.

The net national economic benefit, however, they do not have depending on the cost of service. They have it depending more -- they have it depending on the amount that is paid for the gas which is Two Dollars and Eighty Cents, less the cost of construction, allowances for interest on funds committed during construction, working capital, operations and maintenance expenses, taxes paid to foreign governments. I presume only that allocable to the American earnings on Arctic.

At any rate, the analysis, again, is sensitive to the assumption used, particularly to the price of gas and the timing and staging of the projects. It is interesting to note that to get net national benefits to come our superior for El Paso to the Arctic and Alcan proposals they require the following three assumptions, full production of gas, that is eight-eighths of the 2.5 billion cubic feet for the Trans-Alaska with 1983 production. Full production for Alcan, but later than El Paso, a year later in fact and Arctic Gas assumed to have a ten percent cost overrun and seven-eighths production.

Therefore, I'm not sure that the game was played exactly fairly with the proposals. However, I think it might be fairer to use the real schedules, whatever those happen to be at the moment, they seem to change from time to time, and the same throughput and the same cost overrun considerations.

In any case, I think that since Alaska could influence the benefits by its actions vis-a-vis any of the lines, and since the calculation is sensitive to the assumptions, we ought to be extremely cautious how it is used.

With respect to fiscal impacts, the results of this section depend on an earlier study by the State Department of Labor, Research and Analysis Section. Labor shows that the level of employment rises sharply in each case through about 1981, then levels off. This is supposed to include direct employment on the project, induced employment in the state economy brought about by the increase in the direct workforce. I did not have access to the report at the time I was preparing my comments here, so I can't compare their model to ours, the Man-in-the-Arctic Program, the econometric model. Their usual procedure, however, has been to use the HRPI, that is Human Resources Planning Institute labor market model, which does not take into account the impact on employment of state spending of additional revenues received by the state as a result of the gas projects.

Our work in this area, which does take this into account through the state government sector, shows that employment impacts are somewhat larger for El Paso than they show, I believe they show around nine thousand and we show around twelve thousand in the year 1990, a little more than for Arctic, and for what it's worth, about the same as the Alcan project.

So we have minor differences about the construction period, but in the main we agree about the ranking and approximate relative impacts on employment and on population, I might add.

I have no real arguments with what the Department did with revenues and expenditures. I would note, however, three things. Spending on local services and state services probably influences migration and population, especially in the El Paso case, where you have much larger expenditures possible. And in any case, El Paso proposes to use local communities more heavily than the other two lines so that you would probably have higher spending on local services.

All three routes show substantial front-end state deficits which will have to be financed by reduced services, higher taxes on someone, or both.

All three routes show substantial construction employment effects between probably 1978 and 1984. This may coincide with the timing of other major oil and gas developments, for example, the Gulf of Alaska offshore, and I can foresee that some of these routes may well be competing for transportation links and dock space, particularly in the Gulf of Alaska.

I think that we can safely agree that if the LNG plant proves taxable by the state under its property tax that the rankings that are shown in the report are, in fact, correct.

With respect to impacts on the private economy, we have no fundamental disagreements with this section. The section is based on work done by ISER and by state experts.

With respect to employment, there is an importance of acknowledging there that the fact that the jobs are available does not say "to whom". In order to really tell what the likely impact will be on state resident employment we would need to know the type of jobs available, including the requisite skills, the number and type of skills available in Alaska to fill those jobs and the type and effectiveness of "Alaska Hire" policies.

With respect to real income, no matter -- with respect to our work in this area, which is mentioned in the report, it seems like no matter what we do with respect to the relative throughputs of the lines, if the revenues of the state are spent in ways that induce migration, we found that it is impossible over the long run to increase the real per capita personal income of "Alaskans" and I say Alaskans advisably because that would include migrants as well as those people who are already in the state. It may well be that you could have a decline in real personal income even though everyone were made better off, in the sense that people who already live in the state could have increased incomes from building the pipelines, and those people who migrate to the state may enjoy increases in real income in spite of the fact that the average dropped. But we don't know what the answer is there yet. We should know in a couple of years. We are doing some work in the area right now about distribution of income and economic modelling in Alaska.

Results from our community survey in Fairbanks show that economic benefits, however, were much more widely spread than anyone had expected prior to the Alyeska pipeline being built. So that might be something you want to take into consideration.

With respect to cost of living, the analysis in the report seems reasonable and straightforward and I don't think we have any quarrels with that.

I would be happy to entertain any questions at this time.

SENATOR RADER: Let me advise the committee that Commissioner Martin, as you recall when he terminated his testimony Monday, asked for permission to come back after the conclusion of all the testimony and to supply us with any information that he felt was pertinent and I understand that he has an observer here. So I assume that those parts of your report, Doctor, which take issue with the Task Force and the other information will be presented somewhat to the committee at least for some rebuttal and I wanted to advise the committee members of that prior to their going on with Dr. Scott's questioning. But this would be an appropriate time I take it, Dr. Tussing and Dr. Scott for questioning on Dr. Scott's presentation?