

ALASKA LEGISLATURE SPECIAL COMMITTEE / SUBJECT FILES 8672

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HOUSE JOURNAL

ALASKA STATE LEGISLATURE

ELEVENTH LEGISLATURE - SECOND SESSION

Juneau, Alaska

Wednesday

June 4, 1980

One hundred forty-third Day

Pursuant to adjournment the House was called to order at 10:20 a.m. by Speaker Gardiner.

Roll call showed all members present except Representative Hayes, who had been previously excused from a call of the House; and Representative Meekins.

The prayer was offered by the Chaplain, Pastor Milton S. Hunt of the Resurrection Lutheran Church. Representative Malone moved and asked unanimous consent that the prayer be spread on the journal. There being no objection, it was so ordered and the prayer appears as follows:

"Gracious God, we rejoice in all Your many blessings, and particularly this marvelous weather in our Capital City.

We are approaching the conclusion of this Legislative Session and we request that You help all our citizens of this Great Land to appreciate the limits of our human endeavors.

We recognize that not all things are possible in one legislative session, nor by any single human agency, even government. Although some voters may find themselves disappointed, make them aware that the Alaska government cannot establish Paradise, perfect for all. Give them insights to reasonable expectations of equal protection under written law and an opportunity of justice for all.

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paragraphs of
Alaska Coastal Policy
AC 80.100(b)(3);

STATE OF ALASKA

THE LEGISLATURE

1978

Source

SCSHC 112

Legislative
Resolve No.

42



Approving the sale of royalty oil to Alaska Petrochemical Company.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the State of Alaska has the right under AS 38.05.-180 and its oil and gas leases to take its royalty of crude oil production removed or sold from these leases either in value (money) or in kind (oil); and

WHEREAS the legislature has, by enactment of AS 38.06 and AS 38.05.182, established a policy favoring the taking of that royalty in kind (referred to as "royalty oil"); and

WHEREAS, under his statutory authority as set out in AS 38.05 and 38.06, the commissioner of natural resources has negotiated an agreement entitled "AGREEMENT FOR THE SALE AND PURCHASE OF STATE ROYALTY OIL" ("Agreement") for the sale and purchase of royalty oil with Alaska Petrochemical Company; and

WHEREAS, under its duties and powers as set out in AS 38.06, the Alaska Royalty Oil and Gas Development Advisory Board has considered and, on February 22, 1978, approved the Agreement; and

WHEREAS the commissioner of natural resources has fulfilled the statutory prerequisites necessary to selling the royalty oil which is the subject of the Agreement and has obtained approvals from the Alaska Royalty Oil and Gas Development Advisory Board, to the extent required under AS 38.05 and 38.06; and

WHEREAS the Agreement contains a provision stating that it takes effect on the date on which it has been approved by a concurrent resolution of a majority of each house of the Tenth Alaska State Legislature; and

WHEREAS, under AS 38.06.055(a), no sale of royalty oil may be made by the commissioner of natural resources without the prior approval of the legislature by a concurrent resolution concurred in by a majority of the members of each house; and

WHEREAS the commissioner of natural resources submitted the Agreement to the legislature for consideration and approval; and

WHEREAS the legislature has reviewed and evaluated the Agreement, and has conducted public hearings and otherwise received background information, expert advice, and expressions of public opinion sufficient to make a reasoned determination with respect to the Agreement; and

WHEREAS the commissioner of natural resources and Alaska Petrochemical Company have negotiated certain amendments to the Agreement, dated May 17, 1978; and

WHEREAS the Royalty Oil and Gas Development Advisory Board has considered and, on May 19, 1978, approved those amendments; and

WHEREAS the legislature finds the Agreement, as amended, to be in the best interest of the State of Alaska and its citizens, and further finds that the Agreement, as amended, is in compliance with all applicable constitutional directives and requirements of law;

BE IT RESOLVED by the Alaska State Legislature that the agreement entitled "AGREEMENT FOR THE SALE AND PURCHASE OF STATE ROYALTY OIL," as amended, between the State of Alaska, acting through its commissioner of natural resources, and Alaska Petrochemical Company, is hereby approved.

STATE OF ALASKA

THE LEGISLATURE

1978

Source

HCSSCR 102



Relating to a direct investment by natural gas pipeline project.

BE IT RESOLVED BY THE LEGISLATURE:

WHEREAS Northwest Alaskan Pipeline selected by the President and the State to construct a pipeline to transport Prudhoe Bay to markets in the lower 48;

WHEREAS the cost of the project is 3.7 billion dollars to construct over 700 miles of pipeline;

WHEREAS timely completion of the project to transport North Slope oil is of concern to the nation's energy future;

WHEREAS construction of the pipeline will bring social and economic benefits for the State and local areas; increased state and local revenue; availability of natural gas for Alaskan industry; expansion of private enterprise; development of in-state manufacturing facilities; and

WHEREAS Northwest Alaskan Pipeline state that it would be of substantial benefit to the State in constructing the pipeline if the State provides financial aid, both through the means of the power to issue tax-free bonds and through the means of direct investment;

WHEREAS Northwest Alaskan Pipeline a direct investment up to a maximum of \$100 million would be beneficial to Alaska;

14B12

March 6, 1978

The Honorable Hugh Malone
Speaker of the House
Alaska State Legislature
Juneau, Alaska 99811

Dear Mr. Speaker:

Under the authority of art. III, sec. 18, Alaska Constitution, I am transmitting a concurrent resolution providing for legislative approval of the proposed contract between the State of Alaska and Alaska Petrochemical Company.

The contract with Alaska Petrochemical Company provides for the sale and purchase of up to 150,000 barrels per day of state royalty oil. In exchange for the oil, Alaska Petrochemical Company guarantees that it will pay the state the sum the state would have received from the producers if royalty were paid in value. Alaska Petrochemical Company also promises to construct a petrochemical facility in Alaska, with the capacity to produce 30,000 barrels per day of energy fuels for instate use. If Alaska Petrochemical Company fails to proceed with construction of the facility according to a timetable set out in the contract, the agreement will automatically terminate. A copy of the contract document is attached.

This resolution is being concurrently submitted to both the Senate and House in order to expedite consideration.

In the past, there have been questions raised over the constitutionality of the legislature's approval of an executive act by the means of a concurrent resolution. In an effort to avoid raising that issue by submitting this contract for approval, I insisted that a clause requiring legislative approval be placed in the contract itself. I did so to insure that legislative approval in this instance could be sustained on the basis of a contractual provision rather than raise a constitutional debate over legislative power to require such approval.

I hope that you agree that this sale is in the best interest of all Alaskans, and I urge your prompt approval.

Sincerely,

S/ JSH

Jay S. Hammond
Governor

SCOMM

28:34

File

February 20, 1978

Tim: ...been able to adequately demonstrate to them by outside legal counsel that this is a way to do it. Take the royalty oil, the State's oil, and put it in a facility that's run on behalf of the State then you get Uncle Sam paying for that facility, is what it amounts to, and that's why it's so dog gone attractive. For once you get something back from that so and so who's been taking it off for a long time. This is one legal way to do it.

Tim: Taker's contracts conditioned on your achieving that
(tape out)

Tim: That's why (unclear) we're ready to sign the contracts right now. It works. The deal works. (Tape out)

Lyon: Some of us would like to devote some time to other things, like little contract reading. I'd like to move for adjournment.

Triplehorn: Second.

LeResche: Discussion?

Gallagher: I'd like to know when the Alpetco contract will be available.

LeResche: Where's Connie. Did she go to get them? Does anyone know when the copies of Alpetco's contract -

Honig: It will probably be another 45 minutes.

(unclear talking - unclear)

LeResche: When those are available we'll make them available in

this room which will still be open so you should all be here if you want a copy about 5:00. We'll just lay them out on the table. We'll deliver copies to the Board Members.

Lyon: Will we pick the lock to get in?

LeResche: (unclear) Isn't the front door unlocked? Okay, all those in favor of the motion to adjourn - aye. Opposed.

The meeting is adjourned.

February 21, 1978

LeResche: Okay, we're coming to order now. I might suggest that everyone who wants to hear sit as close to the front of this room as possible. It's a barn and there's no amplification system. So especially those of you who want to hear the people who are going to have their backs to you come up.

We'll call the meeting to order and say it for the record that all members are present as well as the executive director. Joe Moore from Bonner and Moore is on his way in from the airport now. That was one reason we delayed the meeting. The other reason was we couldn't get in the door in time.

With the approval of the Board I'd like to deal with two measures before we get into the other two contract proposals and Bonner and Moore Report. The first of these is a resolution (tape out) of the Board Members of their objection to having a meeting called in 13 days notice rather than 14 days notice as the Bylaws suggest. Would anyone like to bring this up for action?

Lyon: I'd like to move for adoption.

Warwick: Second.

LeResche: Is there any discussion of this?

Warwick: Is this - never mind. The document explains itself.

LeResche: Okay. Any further discussion?

Lyon: Question.

LeResche: The motion's been called for. All those in favor of the Waiver of Objection Resolution - Aye. Those opposed - It's been unanimously adopted and somebody who has a clean copy let's just sign it.

(under current of talking)

LeResche: With Mr. Warwick's signature this is now an official meeting and so was yesterday. The other thing we have to deal with is the final draft of the Finding to Take Royalty Oil and Gas in Money or In-Value. This was distributed at the last meeting. It's newly required by the statutory revision of last year. And I hope you have all had a chance to look at it. Essentially it runs down all of our State oil and gas leases, summarizes the current status regarding the State's royalty share, the alternatives if any to our taking in value, and a finding for each field. Would anyone like to bring this up for action or discussion?

Lyon: There is no copy of that in our packet today.

Warwick: I think we had one set yesterday.

LeResche: Yes, it's the draft with a very few changes, typo changes and stylistic changes.

Wold: They did have a copy last time - copy - the old copy.

LeResche: Right, it was passed out at the last meeting.

Warwick: Mr. Chairman, I move that the findings be approved.

LeResche: Is there a second?

Lyon: Second.

LeResche: Okay, any discussion on these findings? (under current talking)

LeResche: Okay. Commissioner Gallagher asks that we table this until later in the day. He hasn't had a chance to consider it. Is there further discussion on it?

Lyon: Until later today though?

LeResche: Okay. We will then just delay this until later in the day. I think I saw a very tan Joe Moore come in the door. There he is. Welcome, Joe.

Okay. I would like to just move along then to a presentation of the contract proposal by Alaska Petrochemical Company.

Honig: You're out numbered.

LeResche: You can't scare us. (Laughter.)

Honig: Mr. Chairman, Members of the Royalty Board, we didn't intend to scare you on purpose. We did bring a lot of people here to Juneau and there have been comments from time to time about the large number of people we have taken to see Smith Barney or Joe Moore or anyone else. We've done this because from the very beginning we have been serious about this project and from the very beginning we have tried to bring aboard experts in each of the fields that are involved in this effort and this endeavor. We brought a large number to Juneau because we hope that we would be the choice of the administration and we knew if we were we could not go further without your blessings. Our

people are here to answer any questions about the project which you or anyone else may have. Most of them have been here since last Saturday. Most of us will stay as long as necessary to conclude your questioning. We have agreed to spend our time, effort and money to fulfill this contract because it will be a profitable business venture for us. We are interested in making profits. The State of Alaska will incur no risk nor lose any money in the process and when we succeed we think that the gain to the State will be substantial and it will be permanent.

We have a slide presentation in an effort to speed up our discussions. And those gentlemen at the table here will be addressing various areas in their various areas of expertise. We would like to discuss ownership (that says outline okay - that's ownership), benefits to the State of Alaska, viability of the project and a brief summary.

The first is ownership. Alpetco is owned by three companies, Alaska Consolidated Shipping, Barbour Oil and Alaska Interstate. As you can see Alaska Consolidated Shipping each of six Native Regional Corporations own 8 1/2 percent of Alaska Consolidated Shipping. We have some of the presidents of those Native corporations here today, some had to go back, but I believe that from Calista Oscar Kowalgy is here - right here; from Chugach, Bob Anderson; from Cook Inlet, Roy Huhndorf; and is Perry Eaton here from Koniag, Inc.? I guess not. Each of those gentlemen are president of their - also we have George Miller who is Chairman of the Board of Kenai Native Association. (unclear question from Board)

In addition to the Native groups Seatrain Lines, a New York Stock Exchange Company owns 49 percent of Alaska Consolidated Shipping

and from that company we have the Chairman of the Board from New York who came out Saturday, and has been here, Joe Kahn, from New York City. We also have Jim Strupp from Seatrain Lines who will speak later.

Seatrain is in shipbuilding, it's in container transport, it's in ship charter, it's in port management and has an oil refinery which is about the size of (unclear) in Texas. Seatrain and the Native groups formed Alaska Consolidated Shipping over a year ago and, as you know, made application over a year ago for the crude oil. Fred Notti is Chairman of Alaska Consolidated Shipping. Perry Eaton is vice-chairman of Alaska Consolidated Shipping.

We, Alaska Petrochemical, have no sweetheart arrangement with Alaska Consolidated Shipping. They are a stockholder, they are affiliates, we will work together and they have been terribly helpful in helping us with all shipping aspects, and our understanding with them is so long as they can do the job and are competitive they will certainly do the shipping. The second company is Barbour Oil, which is a privately held company in Houston. We were all saddened recently with the unexpected death of John on his way back to Alaska from Tokyo, and it's a great loss to all of us. No one, I think, had more dedication to this project than John. So when the refinery is built we plan to name it the Barbour Refinery in his honor.

The third company is Alaska Interstate, which I'm also chairman of and it is a diversified company. It started doing business in Alaska in 1959 through its subsidiary in Anchorage, which is Anchorage Natural Gas and Alaska Pipeline. We're also in gas exploration and liquifaction in Indonesia, we are in oil and gas exploration in the United States,

and we have a company that does engineering and construction of gas processing facilities, pollution control and sulfur recovery processes. We also have some manufacturing subsidiaries.

So those are the principals who own the amounts shown of Alaska Petrochemical.

First.. - Next we would like to talk a little about the benefits to the State of Alaska and we have a list of them there which starts with no risk; no subsidy; additional employment; additional taxes; the Alaska Endowment Trust we have agreed to form; our shipping capabilities; the specialized training we have already begun; labor policies in general; and controlled industrial development.

On the first item - no risk to the State of Alaska - we're proposing no subsidy, no price concession. We have included in our capital estimates the ports, docks, utilities as offsite items, but they're included in our numbers. There will be no interim take of crude by Alpetco unless and until we have a commitment for at least one and a half billion dollars of permanent financing. In addition to that we have already obtained a favorable opinion from the Department of Energy, which protects the State in the event we do take crude oil and have to stop taking it, and this opinion says yes the State can take it back from us. This was obtained by Bill Van Ness's firm in Washington. Bill was here until last evening.

Probably the biggest protection to the State in terms of no risk is in the area of what we call performance benchmarks which we developed with the Commissioner's staff some time ago and put in the contract. This is a brief resume of these. If at any time any one of

these is not met then the State has the right to terminate the contract with Alpetco. The first two items simply refer to reporting. During the first six months after the contract is approved we will provide monthly progress reports to the State, to the Commissioner of Natural Resources. Thereafter, after six months, we provide quarterly reports. At the end of six months we must have invested at least 2 million dollars in this project. We must have finalized the site selection by reporting to the Commissioner our first choice of site, which the Commissioner has the right to approve or disapprove; and we must begin optimization of the design of our plant.

At the end of twelve months we must have invested at least three million dollars. At the end of eighteen months we must have invested or committed to invest at least 10 million dollars. More importantly, we must have contracts for the sale of at least 70 percent of the output of the plant. This eighteen month criteria are benchmarks as you see, is the critical ones, really. In addition to having 70 percent of the output contracted for, we must have obtained financing commitments for at least one and one-half billion dollars. Firm, permanent financing commitments. We must have completed our EIA; we must have filed for permits everywhere we need to file, and we must have finalized the plant design. So if we have not done all of these things in eighteen months then the State has the right to terminate the contract with us and until we have gotten the financing commitment, which is key because we cannot get that until it is put together, we may not take any interim crude.

Then we have additional benchmarks. All of these we set

* | purposely and with the knowledge of the Commissioner as minimums, not as what we hope to do or what we expect to do, but as to what we must do as a minimum. Twenty-four months we must have committed or caused third party contractual -contractually bound third parties to commit at least \$100 million into the project. By 30 months we must have commenced construction; 36 months \$600 million; 48 months \$1 billion; 60 months, \$1.2 billion; 72 months, \$1.5 billion. Those are the benchmarks in the contract and probably the most important thing about the contract.

We might look at some of the other major contract terms. Since our economics, our planning and our financing are based on using 150,000 barrels a day, Alpetco will purchase royalty crude under the terms of the contract, up to 150,000 barrels a day from two sources: one - from no more than 85% of the Prudhoe royalty oil. Now this was reduced twice - initially down to 90 and later to 85 - as I understand it to make room for the needs of North Pole refinery. The next item is that we may take up to 70 percent of other royalty crude oil in the State if we need it to make up any shortfall. We may take it up to, but take it no further than the 150,000 barrels which we are designing the facility for. So it is simply because we had to reduce the amount of Prudhoe Bay oil we could take and to assure us that if this large investment is made in the plant that we will have a right to other royalty crude which may be discovered in the future.

The price terms, as we've mentioned, provide that we will pay the same in-value price plus a reimbursement of any costs the State may incur by taking the crude oil in kind. If the State incurs a cost it does not have now, then to keep the State even we must pay that.

The point of delivery was a discussion for quite some point of time, and we have agreed to the point of delivery the State wanted which was Pump Station No. 1. And I think understandably, or primarily, because the State and the Royalty Board did not want the State to become a shipper.

We have provided in our design and we are committed in the contract to provide at least 30,000 barrels a day of fuels for in-state use.

In the environmental section we not only have agreed to comply with all Federal and State rules and regulations which you would expect; but we have also agreed to meet supplemental State standards whether or not required by law. That is important to the State now because there apparently is some question about some of the environmental requirements the State wants to keep in place and we've said whether we have to or not legally we will comply with those standards. The one that is written in there, and also I'm sorry to say to say was missing from the contract that we reproduced, and the lawyers promised me it was because of mag-card difficulties in Juneau, but at any rate we did agree to the Governor's request that if we at any time want to amend or modify Article VIII, which covers price and all its ramifications, then we would be required to do so via a public referendum.

The next item which is a benefit to the State is additional employment and additional taxes. And I would like to ask Willard Hanzlik, who is a vice president with Alpetco to discuss those two items.

Willard Hanzlik: In making the preliminary planning estimate of employment which will be permanent in the State of Alaska as a

result of the facility we called on both Brown & Root and Chem Systems, each of whom has experience in working in similar facilities or at least components of the contemplated projects (unclear) and have established a range of jobs which they believe are consistent with other similar projects with minimums and maximums of numbers of permanent jobs.

I think you can see the first item, refinery which is comparable to a (unclear) refinery (unclear) with a range from 450 and 550 employees on a permanent nature. As we move into units of the petrochemical facility each of these items below here - aromatics, olefins, polyethylene, etc. represent employment structures of petrochemical facilities as a substantial number of jobs. These are numbers which are as I say are consistent with comparable projects on a world wide basis and the aggregate, we are talking about between 1900 and 2500 permanent jobs. At this point in time it is impossible to narrow down definitively much more accurately than that because the question of re-evaluation of that sort of thing will effect final numbers.

must check

We have previously in previous presentations talked about maintenance jobs. These numbers 800 to 950 jobs are included - spread along the components (unclear)

To summarize the new employment - the additional employment which the project will bring to the State of Alaska in the construction phase which (unclear due to a cough) about three years will average in the neighborhood of 2,500 to 3,000 jobs. These are temporary jobs as such. They are not permanent jobs - but the operations phase which will be 20 years or so - are permanent jobs and the petrochemical facility, the number we have just referred to on the previous slide, together with

the shipping arm (unclear) Alaska Consolidated Shipping representing 250 to 350 jobs, a total of 21 to 28 hundred permanent jobs with the project. (unclear) these numbers are not conclusive of additional jobs and jobs that will develop as a result of support businesses developing around the facility and estimates vary on this. A common rule of thumb is a three to one ratio so it is again premature to speculate on that. It's going to be a matter of (unclear) as a result of siting (unclear).

We've ...talked a lot about direct tax benefits to the State of Alaska. A common result is a substantial investment, the profits of (unclear) facility and here points to on an average basis what the property taxes on a 1% rate will (unclear) locally and along with State corporate income tax and gross receipt tax would mean an average per year of the contract period. These numbers come out of our financial projects submitted to you in October and (unclear) understand that those are definitive numbers, they are representative of what can be expected of a project of this scope and are probably accurate with some reasonable (unclear)

Again, these do not include any of the indirect taxes that will come from other investments made by others or from personal income taxes paid by employees of either Alpetco or other businesses. Incidentally, we have prepared a set of these for each of the Board members.

One way to look at what does a petrochemical facility mean in comparison with a average or normal sized fuel refinery look at imperative investment and imperative jobs. I apologize for the fact that our scale

20-2

is such that it doesn't all fit on the table. What we have tried to show in proportional representation in this column, over here, say \$750 million investment for fuels refinery and about 500 direct permanent jobs resulting. On the same scale there is a petrochemical facility at say 2.5 Billion with 2,200 direct permanent employees. All that is there to show is the significance difference in terms of the new capital base for tax base to the state and also the impact of new jobs.

Honig: Thank you, Willard. The next benefit to the State is
(end of tape)

Honig: ...environmental conditions in the State of Alaska. The reason for this trust was that rather than propose that we pay a direct premium per barrel on the oil before we built the facility and as it operates in the early years, we propose that instead of that that we contribute after ten years of operation, we contribute five percent of the net after tax profits each year into this trust. That estimated contribution would average about \$10 million a year based on our projections and model that we furnished you in October, and in ten years that would be \$100 million into the trust not counting any accumulation of interest. The administration of the Trust we have agreed would be by an independent board of directors unaffiliated with Alpetco in any way. They would be appointed by the Governor and confirmed by the Legislature and this is another provision in our contract.

The next benefits to the State we listed are shipping capability and specialized training for Alaskans. And I would like to ask one of our members who worked with us day and night on this project to talk

about those and that is Jim Strupp, who is Vice President of Alpetco and Vice President of Seatrain. Jim.

Strupp: As Mr. Honig indicated before, Alaska Consolidated Shipping will act as Alpetco's shipping arm and function in that role in several ways. One; ACS will provide specialized ships for products manufactured. There is enough lead time in this project to construct specialized new vessels optimize the transportation on this project. Two; we will provide career opportunities for Alaskan citizens in the maritime industry. As Mr. Hanzlik has said, we are looking at 250 to 350 jobs in the maritime industry for Alaskan citizens. We will talk about that a little more in just a bit. We feel we have the experienced management in ship building, as you know Seatrain ship building located in Brooklyn, New York and employs 2,600 people building crude carriers as well as barges and other transportation vessels. We have experience in ship chartering and we have a very experienced staff in port operations management.

The majority of Alaska Consolidated Shipping as you know, is owned by six Alaska Native regional corporations. We think backed up well by Seatrain Lines, one of the largest shipping companies in the United States.

I would like to talk now about our plans for specialized training for Alaskans. Some of it is already happening. In the area of shipping several months ago John Gunderson, a member of the Aleut Corporation and a Director of Alpetco, and I had lengthy discussions with the Harry Lundeberg School down in Piney Point, Maryland. They were quite intrigued with the chance of training Alaskan citizens in the maritime industry

and as of right now we have enrolled, and they are currently in school, two students who will be graduating at the end of March in basic seamanship. Those two students are Mr. Ray Clock, who is a member of the Doyon Regional Native Corporation, and Mr. Fred Hawes of Cook Inlet. The school works from this standpoint. Alaska Consolidated sponsors the airplane transportation to the school and then the school funds the training while the student is there. When the student graduates he is guaranteed a job.

In addition to this training we also wanted to begin in the exposure of some citizens here to refinery - basic refinery techniques - so we have for the last two and a half months had two trainees being exposed to all basic refinery principles at the Pride Oil Refinery in Abilene, Texas. They have been going through a job rotation program and been covering all of the operational jobs, quality control, lab jobs, maintenance jobs and getting a total exposure to basic refinery techniques - doing a lot of work. Talking to them on a weekly basis and they are going to come back up and help us in terms of further recruitment in our training programs down the road. At Pride Refinery we have Mr. R. C. Credo, Jr., of the Sea Alaska Native Corporation, and Mr. Loren J. Hoyt, of Cook Inlet.

Our plans in the shipping area, after discussions with the Harry Lundeberg School, is that they will begin taking more and more students whenever we want to send them. On the specialized training that is planned there will be extensive training programs for Alaskans as I indicated on all phases of shipping, plant operations, plant maintenance. These are considerable programs. They involve a lot of technical training.

We plan to go through this at the appropriate time. All of these training programs will be coordinated with Brown & Root, Chem Systems, Alaska state officials and labor union officials in the State.

Thank you.

Honig: Just a moment on the next slide, Willard.

When John Barbour and Jim Strupp and I were working, getting together our team and our management we decided early on that for a project of this size we would need someone to work with us in the design, engineering and construction phase. Some company that not only had done this before, many times, but a company that had a large enough net worth and balance sheet to make their statement that it would work and run worthwhile to not only us but buyable by our investment bankers and the people who would buy the bonds. So we needed a large company and a capable company, and there are only about three around that are large enough, I think, to head up some effort like this. So we associated early on the firm of Brown & Root and we have a slide that gives you some basic data about Brown & Root.

They have offices around the world. They are one of the largest and most diversified engineering and construction companies in the world. Last year they did the largest volume of any construction company. They are a subsidiary of Haliburton, which last year had revenues of 4.9 billion dollars in '76 and the shareholders' equity was 1.4 billion dollars and maybe they are embarrassed about their profit but I recall it was after tax 306 million dollars. They are experienced in Alaska. They did the North Slope production facility for BP, which was very largely fabricated on the Houston ship channel and was one of

the pioneering jobs to show how much you can prefabricate and bring to Alaska. They were in a joint venture with two - for the two northern most segments for Alyeska Pipeline and they are currently building an industrial complex for the Big-3 Industries, all in Alaska. They are very experienced in design, engineering, construction of what we are talking about, which is refining, petrochemical facilities and offsites. I would like to call on their senior Vice President, Jimmy Norris, to talk a little about labor policies and the environment. Jimmy.

Norris: Thank you Charles. I guess after that introduction that we don't have to say too much about Brown & Root except we consider ourselves an Alaskan company. We've been in Alaska for about ten years continuously now and any of the construction work we intend to do here will be done through our subsidiary, Alaska Constructors. This is the group that John meant - alluded to - when he talked about the British Petroleum work and the work that is now going on near Anchorage.

Alaska Constructors is associated has signed the Alaska plan, associated with the AG's group. Our relationships with the Alaskan workers and unions has been good. I've had these people say that we are a fair company, sometimes I can't remember their first names but we get along pretty well. As to the Alaskan company we intend to maximize Alaskan workers on this project. We don't intend to bring anybody in that we can hire here. We will work within the existing State and labor guidelines for the training of workers. We will forecast labor requirements by craft as far in advance as possible to allow for this particular training.

May I have the next slide, Willard.

It doesn't quite all go on. Well, just show me the first part then. That's good.

This is a very preliminary plan that show employment for both construction, then the blue would be the phase in between the maintenance and the construction and the start-up operations, and then a combined plant operations maintenance group. That shows a number - I think it's something like about 3,000 if you could read the chart there. We never find one of these curves that is that flat. They're usually peak a little higher and this one probably will but for a short duration, but that shows 3,000 people now and will probably go up a little bit - something close to 2,000 people for the operations and the employment and quite a number of the operations and maintenance people can phase in from the construction operation with very little training.

Now I'd like to address myself to one other aspect. This seems to be one of the things that has come up in our travels around Alaska. The people are concerned with the environment. They are concerned with the controlled industrial development. What we want to build is a clean environmentally safe facility. Now I've been doing this sort of business myself for thirty years and I've watched the Houston ship channel grow to where it only had a few chemical/petrochemical facilities to where now it is probably the largest in the United States in the collection of industrial facilities. It's grown so much that there is no more room on the ship channel, we're spreading to other places. We would like to see this in Alaska. We think this is probably the ground floor of what Houston did some thirty years ago.

One thing I want to talk about when I say that Houston is the

largest collection of petrochemical facilities. I want to say that it is an environmentally clean. There is relatively no pollution - industrial pollution - in Galveston Bay. There's still a little bit by the city of Houston, but they are rapidly cleaning that up. I say this because I live down there. I moved my home from the west side of Houston down to Galveston Bay. I live down near the Space Center where my wife keeps crab traps out in the front yard and we catch more blue crab than she can cook. Furthermore I'm a big fisherman and further down the bay I have a fishing camp. This particular fishing camp is located right within a fishing village. This is a group of people who make their living fishing, crabbing, oystering. And over the six years that I've watched that I've had that place I have watched that bay clean up and the fishing and the crabbing has gotten better and better. This is the type of facility that we see can happen here in Alaska; except that you won't have to go through the clean-up phase. You'll start with a clean plant.

Finally what we're talking about - Willard mentioned the high capital investment and the number of employees that you would get in this type of facility - it's a highly sophisticated industry; requiring high capital investment for employees. It's an industry that is synergistic - that is, by its very presence it's going to attract more people with to build more facilities. So I guess that's about the end of that. I'll answer ask for questions later. Thank you.

Honig: Thank you Jim.

So we've talked about no risk; no subsidy; additional employment and taxes; the Endowment Trust; shipping capabilities, specialized

training, labor policies and controlled industrial development.

~~There was an editorial in the Anchorage paper Sunday that I~~
think sums up better than we can what the benefits to the State are.
I'll take the time, if I may, Mr. Chairman, to read this editorial. I
don't think you can read it from there. But I think it does sum up this
entire section on benefits to the State of Alaska - and it's not written
about any particular company. It's by Bob Richards who is an economist
and Executive Vice President with Alaska Pacific Bank.

"This week the administration is to deliver to the Legislature
its recommendation regarding disposition of the State's royalty oil.

"Although several experts have questioned the viability of the
four proposals before the Royalty Oil and Gas Development Board, it
should be noted that the four bidders have been working closely with the
State over the past few months to develop plans that make sense for all
parties. Now consultants Bonner and Moore [Associates Inc.] have
concluded that at least three of the four contenders are 'fully qualified.'"
I'll let Joe Moore speak to that. I don't know whether that's accurate
or not.

"It seems to me that anyone concerned about the stability and
long run health of Alaska's economy should give careful consideration to
this marvelous opportunity to expand the vertical integration of Alaska's
industrial base. Our woefully lack of in-state processing of our re-
sources has contributed to chronic abnormal fluctuations in Alaska's
economy. Expanding the manufacturing operations in Alaska will help
create a more stable and therefore more socially healthy economy in
Alaska.

"Additionally, the petrochemical industry brings substantial benefits far beyond those of many other industries. It is highly capital intensive and one of the lowest labor intensive industries of any of our nation's basic industries. Therefore, expansion by the petrochemical industry results in very little population impact. The highly automated petrochemical operation requires very few workers and therefore imposes very little additional burden on public services, such as schools, hospitals, highways, and so forth.

"So it is very clear to see that the petrochemical industry, relative to other potential industries, imposes a very small social cost. But what about the other side of the coin? What does this industry do in the way of creating social benefits?

"Again, in this regard the petrochemical industry is a star performer. Its first social benefit results from its employing highly skilled, well educated, and highly paid employees. These people generally have a high participation rate in community affairs. Their high incomes are taxed commensurately high, and their socio-economic station in life generally implies fewer social problems in the sense of crime, disease and the like.

"The second social benefit emanating from the petrochemical industry is its contribution to creating a more stable economy. The industry is virtually non-seasonal. As we all know, those plants down on the Kenai Peninsula keep producing 365 days out of the year. Alaska's other basic industries, fishing, forest products and tourism, are highly seasonal industries. As a result typical employment in Alaska in January is one-fourth below the level of employment in July. Such seasonality creates all sorts of problems. The expansion of the

petrochemical industry in Alaska will help considerably to reduce the overall seasonality of employment in our state.

"Another way in which the industry employment varies is the swings from year to year. This phenomenon, of course, is referred to as the business cycle. Again, Alaska's fishing and forest products industries are highly cyclical industries. The petrochemical industry, on the other hand, experiences considerably less cyclical fluctuation.

"Therefore, the expansion of the petrochemical industry in Alaska would reduce both the seasonal and cyclical fluctuations in our economy, bringing about a considerably more stable employment situation.

"The third major social benefit from the petrochemical industry results from the huge taxes and other forms of government revenue generated from this industry. The key factor here is that revenue flowing to both state and local government exceeds by far the additional burden which the industry and its employees place on state and local government. So there are all sorts of excess funds available for the pursuit of a whole array of social objectives: parks, bike paths, better schools, better health care, and on, and on and on.

"This then, is what leads me to a very important conclusion which we should keep clearly in mind. It is simply this: because of the huge public revenue generated by the petroleum and petrochemical industries this type of economic growth is [not] now only compatible with, but indeed is conducive to the pursuit of the whole array of our non-economic objectives.

"Perhaps I can summarize by acknowledging the general positive relationship between our 'quality of life' objectives and our economic

development. Here we have the opportunity to encourage an industry which will bring wages, highly skilled, well educated people to stable employment and which manyfold more than pays it[s] own way in terms of social impact. The social and economic attractiveness of the petrochemical industry is self-evident."

Next on our outline is to talk about - we've talked about ownership, we've talked about benefits to the State, we now like to talk about the viability of the project. We are dividing that into four subjects: management, description and scope, marketing and financing.

On the matter of management we call this chart the development phase of Alpetco because that's really what it is. We've been criticized for not having experienced, seasoned petrochemical executives aboard our ship and the criticism is certainly warranted because we had to have that kind of person or those kinds of persons. But it's impossible when you are an applicant among many to recruit career, seasoned executives. You can get consulting firms but you can't hire chief executive officers when you are just one of many applying to someone for something. So we weren't able to get until recently someone who had been down the ropes as a chief executive of not only a petrochemical plant but a chief executive putting these sorts of things together.

All along we have had all of the people you see there with the exception of Gordon Cain and with the exception of ChemSystems. All the rest of those people have been working with us since our beginning of the project.

In the technical area we now have ChemSystems. We have had all along Miller & Lentz in Houston who are reservoir engineers. We

have a Vice President of Alpetco in the technical area - Hilton Lacy, who several of you know in the gas processing area. In marketing we have had Bill Strong, formerly with DuPont as a Vice President in our company since the beginning. We now have ChemSystems bringing their expertise to that area.

In the legal area Eddy Rogers has served as our special counsel and later Pat Dyer from Alaska Interstate has helped him. In Alaska our counsel is Cathy Chandler, who has been a great help to us from the very beginning.

Early on when we became interested in exploring Japanese markets we associated Joe Tyding's law firm in Washington to advise us in Washington and in Japan. Bill Van Ness's firm has been a counsel to us all along in the area of the Department of Energy and it was his firm who prepared the application for and received the successful opinion on the matter of our taking crude and not upsetting the State's position.

Jim Strupp has been with us from the very beginning in the area of shipping.

Engineering and design, I mentioned Brown & Root. Jimmy Norris you have heard from. We also have with us today and he's been with us everywhere we've gone, including Valdez and Japan, and that's Gary Montgomery who is project manager from Brown & Root.

In finance, Bill Anderson, who couldn't be here today, is a Vice President of Alpetco. He's also the chief financial officer of Alaska Interstate Company. He's a former senior vice president of Blythe, Eastman, Dillon, in corporate finance energy in New York. Raymond Trobh was at our Royalty Board Meeting in Anchorage earlier and

is a financial consultant to many companies including Alaska Interstate. He is also a director of Alaska Interstate and recently became a director of the American Stock Exchange.

From the beginning we have had E. F. Hutton and Kuhn Loeb - now Lehman Brothers, Kuhn Loeb - as our investment bankers and both of those companies have known us for a long time because they have been investment bankers for Alaska Interstate; and in the case of Kuhn Loeb also for Seatrains.

Chemical Bank has been with us from the beginning and they've made all the rounds with us and all the Royalty Board Meetings with us and have served as our commercial bank for interim lending and other purposes.

In legislative matters Henry Pratt has been with us from the beginning as has Terry McCall who is a Senior Vice President of Alaska Interstate and a Vice President in Alpetco and first came to Alaska with John Barbour on this proposal.

Willard Hanzlik is in planning and he's backed up by not only ChemSystems but two of our computer and planning experts in Houston.

On the matter of training for local hire backing up Jim Strupp has been Ron Dagon in Seatrains as well as the Pride Refinery which Seatrains owns in Texas. I believe it's about a 35,000 barrel a day refinery.

So that's our organization. I'd like to mention a few things about ChemSystems. They did not join us at the beginning but came in on all fours in December. ChemSystems we carefully selected. We didn't know anyone in the company but we did talk to a lot of chemical and

petrochemical people who placed them at the top of the list as being the leading firm specializing in both marketing and technical support of not the refinery industry but the petrochemical industry. They have offices in New York, London, Munich, Houston, Paris, Sao Paulo and Beirut. They have a staff of 80 professionals plus of course the usual support personnel. Their clients include most of the world's leading oil and chemical companies, as well as several national governments. They are experienced in petrochemical project development worldwide. The same kind of thing we're talking about here - including in the United States, Western Europe, Japan and Middle East. They're experts on supply and demand and the economics of petrochemicals both in this country and around the world. We have been very fortunate in having both the president of that firm and one of their senior vice presidents, Chuck Campbell, work with us almost constantly.

The next person I want to mention in our organization is a - has newly joined us and we did a lot of looking around to find someone that not only had been down the chute in terms of being a chief executive officer of something like this, but also someone who had successfully put these together - which is entirely different from running them and administering them. And we knew we could not at this stage, before we were even selected by the administration, we could not at this stage bring someone in, some career person in, from a petrochemical company unless we found someone in a particular situation. Gordon Cain's name kept coming up at the top of just about everybody's list we talked to and so we approached Gordon about having an interest in joining us. We had consulted with him on two previous occasions about this project and

he had been very kind to advise us on it. And Gordon studied it and he talked to a lot of people, including Joe Moore and including by the way Peter Spitz, the head of ChemSystems, they are all in the same industry, they have known each other for years. And Gordon decided that it was do-able and that it would be a challenge and that he would like to do it.

He's had over thirty years in the petrochemical industry and he has been, as I said, responsible for every phase of it. He has been in market development in major petrochemical facilities in the U.S., in Japan, in Europe and in South America. He has negotiated with the Japanese on just what we're talking about here in the past -- and successfully. He is presently employed as the chief executive officer of Petro-Tex Chemical Corporation in Houston, a company he organized some time ago. He left that company and became head of the chemical and petrochemical division of Continental Oil which he served for many years. He was one of the organizers of a joint venture in South America among primarily chemical and some (end of tape)

Cain: ...it is highly likely to include an aromatics plant and an olefins plant. In addition that it be downstream facilities to
convert aromatics (tape blank)

...It's one thing to build this facility but the key question is can we dispose of profitably the products from it. And I think we can and I think I should say that we don't have any intention of going out and hiring a lot of sales (tape problems - then tape blank)

...comfortable in being in the position of depending on someone else for their basic raw materials and very many of them have aggressive

campaigns to get more basic in raw materials. And so I have talked, Mr. Spitz has, Mr. Strong has and we've had a number of strong expressions of interest on the part of chemical (blank) both in the United States and in Japan and so we expect that these satellite facilities will be joint ventures with chemical companies from either the United States or Japan. (tape blank)

...such that it would be worth while for them to do this and you've heard about ChemSystems before and I can add to this that I have known Peter Spitz, well ever since he started his firm some 10 or 12 years ago. The fact that he was involved was certainly a significant factor in my agreeing to (tape blank)

Spitz: ... the major project for the United States as well as for Alaska. And I want you to think not about the current situation in oil and petrochemicals where there is a sort of a glut of oil on the world market, as you all know, and there is a not a glut but certainly an ample supply of petrochemicals available, but I want you to think about the years 1985 to 1995 and beyond when the situation, everybody believes, will be quite different. Studies made by a number of respected agencies, the Department of Energy, the CIA, (tape blank)

At that time the possession for the right to buy from large amounts, say 150,000 barrels a day of crude oil is going to be worth a great deal. And it is that factor more than anything else that has caused Alpetco to be very interested in this project for itself as well as for Alaska.

Alpetco's studied the possibility of building either a refinery or a petrochemical plant and when you do that you very quickly come to the conclusion that as far as supply and demand of either fuel products,

petroleum products, or petrochemicals is concerned the very likely choice would be to build a petrochemical facility.

I'd like to see the first slide. This is a representation of the expected growth rates for petrochemicals versus fuel products in the United States. If you look at the bottom part of the slide it figures the growth rate over the period '75 to '80 to '80 to '85 and so forth, you see that the growth rates for fuel of products, the petroleum products are actually very low. They go down to less than 1% a year. Lower actually even than the expected growth rates (tape blank) to use less oil and is trying to shift it's oil requirement from - it's energy requirement - from oil to whole and nuclear energy. And so it turns out that there really isn't a tremendous demand for new refineries in the United States. And in fact, somebody from Shell, not too long ago, said that in the early '80's will be the last refinery that will ever be built in the United States. Now that may be an exaggeration, but it's not probably too far from that. On the other hand, the growth rates for petrochemicals go lower than in the past - and in the past they've been in the range of 8 to 10 percent are still going to be quite high. So when you think about where petroleum and petroleum feedstocks are going to be going, they are going to go much more likely into petrochemicals than into refinery products. And, furthermore, the refineries that are going to be built are going to concentrate more and more on making petrochemical feedstocks than for instance gasoline, because gasoline will actually experience close to zero growth after '85 with cars becoming lighter and more efficient and also with prices for gasoline going up. So the conclusion that we reach is that the U.S. needs many (tape blank)

therefore building a petrochemical facility is a more desirable thing to do for the future. Let's take that slide off.

Now the next point is does petrochemical manufacturing in Alaska make any sense? We think it does, of course. And I believe I'm right in saying that Joe Moore believes that it does under the proper circumstances. I believe in one part of the report he says so. I want to talk about this a little bit right now.

The conventional wisdom is that petrochemicals in the United States are made in the Gulf Coast because they've been made there for a long time. And the reason for that of course was that the Gulf Coast is a very inexpensive petroleum and natural gas and gas liquids and that this lead to the preponderance of these plants being built on the Gulf Coast. And that includes, of course refineries, but particularly petrochemical plants for making olefins and aromatics.

Now in the rest of the world the major petrochemical manufacturing facilities are in Western Europe and in Japan. Alpetco is not interested in the Western European market - it's too far away - we are interested in the Japanese and the Pacific Basin markets and so I'll really talk more about the U.S. and the Pacific Basin in this part of the discussion.

It's become quite obvious that the Gulf Coast will suffer a decline in its petrochemical growth mainly because gas and oil running out are becoming much more expensive and in fact some of you may not even know that - several large petrochemical producers and oil companies are making plans to ship large amounts of coal to the west Coast. A rather startling development but certainly one that will without a doubt happen in the '80's and '90's. They know that oil is going to be hard

to come by and that the government is putting all kinds of pressure on producers to switch to coal. Now there has been another problem of having all these petrochemical plants on the Gulf Coast in the U.S. - which is that markets have grown all over the United States and yet most of the production facilities have remained in the Gulf Coast. And a very good example of that is the West Coast market, which is a very large market, and which at the present time does not yet have a petrochemical plant of any size.

Now looking at the rest of the world, the petrochemical plants in the past were located pretty much close to the market but in the future will be more and more located where the crude oil is produced, or where the gas is produced, because the producers of oil and gas are getting in a sense more and more leverage from the fact that they do have these raw materials and they would like to get the kind of industrial development that we were talking about earlier in the presentation - that we believe Alaska should be benefiting from. Moving to Japan - Japan has problems that are also becoming fairly severe. They are running out of space to build plants while growth rates are still continuing. Furthermore, they are having problems building up too high a trade surplus. They would like to buy more things from the United States and one of the things they could be buying from us are feedstocks and primary petrochemicals which would be good for the balance of payments. So the message here is that petrochemical production facilities are going to be built more and more where the crude is, where the crude owners want to build these facilities and not necessarily where the markets are even though this may not be as economically

favorable in all respects when you look at the entire chain. You will note that the OPEC nations are thinking about building petrochemicals and we think this will come very slowly but it is a good example of this situation.

The next point is - and there has been talk about why - there have been letters written in some of the newspapers here. . . it's ridiculous to build either refineries or petrochemical plants in Alaska - this is against all economic sense ... you are going to be shipping petrochemicals all over the world ... this is going to require all kinds of subsidy, etc. - well the fact of the matter is that petrochemicals are already traded all over the world. The flow of petrochemicals from various parts of the world to other parts is immense. Aromatics are shipped from the United States to nd Japan and Western Europe currently in very large quantities. Butadiene goes from Japan and Western Europe to the United States. Chemical intermediates like styrene and vinylchloride are shipped from the United States and Japan to various other parts of the world. Even ethylene is starting to be shipped in chronogenic tankers, though we don't intend to do this here, but it's another instance of a structural change in the industry.

The people who trade these chemicals all over the world are the multi-national companies, U.S. trading companies, and particularly the large Japanese trading companies, whom - at least one of whom - possibly more of which will probably play a fairly important part in this project. The Japanese requirement for materials is also one that we ought to dwell on for the moment because it really consists of three parts. People have said, well Japan doesn't need petrochemicals, it is

very well supplied. It has enough production facilities for a long time, it's not sensible to expect the Japanese to buy petrochemicals from the U.S. or from Alpetco. But the fact is that it's not just the Japanese domestic market, the Japanese export market is very large and will progressively have to be supplied from other places than Japan. Furthermore the Japanese trading companies move materials all over the world and whenever we at ChemSystems get into a new project anywhere, we are almost sure we will hear from one or two Japanese trading companies who say we will take the output of this plant, or we will take half the output of this new plant, because we need this material to move it to Europe or to Latin America, and so forth. So think of the Japanese requirement as a global requirement and not necessarily the Japanese market.

The Japanese also have as a matter of policy started to decide that they also really got concentrating on the downstream chemicals - the chemicals where more value is added because they import all their raw materials, they have - as I said - a limited amount of space for new plants, and they furthermore have a number of older, more antiquated facilities and than they feel with rising unemployment that they ought to concentrate more on downstream materials and whether they now start to import primary petrochemicals instead of crude oil and naptha may not make much difference to them. That, we think is another plus for the Alpetco project.

So, looking at the question then of does it make sense to make petrochemicals in Alaska, we have an established world trade, a growing need for more petrochemicals on the West Coast and in the Pacific markets

from a plant that has an insured crude supply and what we think is a favorable geography.

Now I would like to just show you what we mean by the West Coast market - and that is shown on the next slide. It is a market that consists of 28 million people, about 3/4 in California, the rest through the other West Coast states (it of course includes Alaska) but by far the largest number of people are in California. This market is almost entirely supplied from the Gulf Coast petrochemicals shipped down around the Panama Canal and up the West Coast, or else in hopper cars by rail, which is a very expensive form of shipment, and if you think about the geography shipping down from Alaska to this market, which needs petrochemicals badly, is an eminently sensible proposition. Now, the Pacific market, as shown in the following slide, consists of quite a large number of countries. At the top there is Japan and Korea, which are reasonably self-sufficient, but which have a growing market and will need more products because they are already at a high base. You have many countries with a developing population, such as the Philippines, Malaysia, Singapore, of course Hong Kong, etc., these are areas that are starting to import fairly substantial amounts of petrochemicals from other parts of the world. A lot of them have come from Japan in the past but Japan has become less competitive and a lot of the materials are being shipped in from the Gulf Coast now, and therefore represent good opportunities for a project in Alaska. And our studies on West Coast and Pacific Basin imports show that this is a very interesting market which a week ago after together with companies that are already U.S. companies and Japanese companies that are already in this market.

Now I would like to now go on to the question of supply and

demand - because there again has been a certain amount of criticism that this project will make products that are not needed by the world and it doesn't make sense to manufacture petrochemicals here when there may not be adequate market for them. While the petrochemical industry is not cyclical in terms of employment, because it provides very stable employment, there are periods of excess supply and excess demand. And it will probably be that way for a long time to come and just because right now the pendulum has swung a little bit in the direction of too much supply it was only three years ago when companies were literally fighting with each other to get the last pound of polyethylene or styrene and there is no reason to think it will not reoccur in a few years when the current surplus of (unclear) capacity has been worked off. The key point is that the petrochemical growth rates, while lower than in the past, are still enormous and I think the next slide will give you a very good illustration of that.

The three most important petrochemicals are ethylene, propylene and benzene. The U.S. demand currently for ethylene is about 27 or so million or billion pounds, which will be about 31 billion pounds by 1980 and if you look at the projections, and these are not we believe very optimistic projections, they are lower than Stanford Research projections, they are lower than Arthur D. Little's projections, just to mention two companies that do this kind of thing - you see a requirement going from 31 billion to 85 billion pounds of ethylene in the year 2000 and comparable growth rates for the other petrochemicals. These growth rates come about because petrochemicals grow much faster than GNP. There are still many applications for them, for example in the packaging industry only about 6 or 7 percent of packaging materials are currently

made from plastics and many people think this can get up to 30 or 40 percent level and that in itself could account for 1/3 or 1/2 of this growth. And when we contract these growth rates to the Alpetco expected production of ethylene, propylene and benzene, they do sort pale into significance. I'm not saying that these aren't large amounts of material than can be sold quickly - I'm merely putting them in prospective against U.S. requirements and not even total world requirements.

Now in the next slide we look at ethylene a little bit more closely. This is a chart that was actually published by Union Carbide. On the left side we see the billions of pounds of supply or demand and along the bottom the years and we see that supply and demand go up with each other as companies install incremental capacity. It appears that every three years or so the supply is always used up and so new plants are required and this gives us an estimate, for example, that just between now and 1990 fifteen new ethylene plants will be required in the United States to meet this kind of growth rate. And, again, we're talking about one such plant for Alpetco and for Alaska, which does not seem unreasonable, and four such plants for the West Coast.

Moving then, to the West Coast market where we have carried out a large amount of study work - on the first slide we show generalized demand growth curves for several major petrochemicals such as polyethylene, styrene, vinyl chloride and ethyl glycol, and these are substantial amounts of polyethylene, for example, going up to a 3 billion pounds per year requirement by 1990 (if you move that up a little bit) and Alpetco who ought to be very well located to serve this market would hope to get perhaps no more than 20 percent of the West Coast polyethylene market

and perhaps comparable amounts of some of the other chemicals. This is also shown in the next slide where we have actually contrasted supply and demand for three petrochemicals on the West Coast, and you see for example that ethylene demand will go from 1.7 to 4.5 billion pounds in 1990 and the current supply is negligible.

There is a very small ethylene plant on the West Coast. The reason I put the 250 million pounds in parentheses in '85 and '90 because I feel sure that sooner or later there will be one or two West Coast plants that as you know they've been held up for a long time for various problems - Dow recently gave up in their attempt to build one there and even though we think there will be some plants built eventually, the market opportunity there is very good and the economics for shipping these materials from Alaska to the West Coast is certainly as good in our judgment as shipping them from the Gulf Coast.

Moving out to the Pacific Rim Basin - again on supply/demand and on opportunities for Alpetco - the Japanese market is tight right now. There is surplus capacity there but when we went around to a lot of the Japanese companies, and of course to the government, and to the Japanese Energy Commission and the Ministry of International Trade and Industry there was a tremendous amount of interest in this project. In fact, the surplus in some of these materials was almost belied by some of the statements that were made by some of the major companies. For example, Matsui Trading, which is a 30 billion dollar company worldwide told us, and wrote us a letter, which will be distributed with the other letters to members of the Royalty Board, -- anyway they told us that Matsui will face a shortage of olefins and aromatics sometime in

the mid to late 1980's and would be extremely happy to start taking materials from an Alaskan project. Similar letters were received from other companies.

I think the slight negativism among industrial people that Commissioner LeResche saw in Japan and reported on, was perhaps at least partly influenced by the fact that when a company, which is certainly true right now - a number of companies in Japan are suffering from a slow growth in petrochemicals and have surplus capacity, it's difficult for them to see more than a year or two ahead while they are having problems working off their excess capacity. We see the same thing in the United States very frequently. Operating companies are very much influenced by what happens in this quarter and this year and they worry about their p and l's for the current year and sometimes have difficulty focusing on a situation six to ten years ahead. But, the government agencies are in a little different situation. They have been extremely supportive of this project as Joe Tydings will talk about in a moment.

Now Japan is therefore one area we are going to concentrate on very heavily. We are also going to try, as I said before, to sell materials in other parts of the Pacific Basin and in the next slide we have summarized the results of some of our studies on the type of input requirements that we see for the Pacific Basin countries for 1985 and we see the need to import namely - there would be a net deficit when you add all the demand for these areas and subtract the known production capacity. We see a need of 1.4 billion pounds of polyethylene, 1/2 billion pounds of polypropylene, and so forth. So these are again interesting markets for an Alaskan project.

The next slide then shows again the number of ethylene plants that we think will be needed in this entire region. This is the net deficit and we see that by 1990 (and now I'm really just focusing on the West Coast and on the Pacific Basin) ten plants will be needed to make up the deficit for ethylene and again Alpetco plans to build only one of these. The West Coast and Pacific Basin market will therefore need a large amount of new capacity and when I look at our projects, which is shown in the last slide, I think you will now perhaps agree that a) there is a market for a number of different products which I won't get into because you've heard these names before in this speech, and a lot of these different areas and that the project that we are planning - Willard, I'd like to see that last side, please - does not make an excessive amount of these.

I would like to just go over that with you briefly. The plant is designed to make approximately 4% of U.S. plus Pacific Basin requirements (1985 requirements) of aromatics, about 3% of total requirements of olefins, and the downstream facilities we are thinking about and these are typical because we're not sure of our product slate - none of them make more than six and in most cases 3 or 4 percent of the U.S. and Pacific Basin market requirements for these materials. Now the olefins plant I'll say one more thing. While we plan to currently crack petroleum feedstocks to make olefins, Alpetco is going to design its cracking furnaces flexibly enough to be able to crack gas liquids because we know that there is a possibility if and when the Alaskan gas pipeline is built that gas liquids such as ethene and propane could conceivably be extracted (end of tape) Kenai ethylene depending on which feedstock turns

out more economical. And so, I want to stress the flexibility that we are proposing to use in designing this plant. The approach on marketing, which was discussed by Gordon Cain, is one that I personally feel that is very likely to be successful, namely to find one or two (tape blank)

help coming of our next speaker who has a tremendous amount of background in Japanese matters. This is Mr. Joe Tydings, a counsel to Alpetco, who has been a consulate to the Condron, the Economic Association in Japan, the Japanese Energy Council. He's been a special counsel to the Japanese Embassy on U.S. trade relations, and for seven years he has been a counsel to the U.N. Fund for Population Activities. I would like to now introduce Mr. Tydings who will talk about what we've been doing in Japan.

Tydings: Thank you Peter. Chairman LaResche, and members of the Royalty Board, I'm reminded of an old Maryland proverb that the mind can absorb only so long as the seat can endure - and I wonder whether it would be in order for the chair to entertain a five minute seventh inning stretch so that the members of your Board - or I can go it either way..

Mr. Chairman, you have heard from Peter Spitz, the economics of marketing in the Japanese area (tape blank)
...Japan and the United States and also the strategic problems of Japanese industry. Given the needs of the Japanese economy it is almost inevitable that given the opportunity there will be a Japanese and a strong Japanese participation in this project. Since World War II as a result of many factors, including United States manificence, Japanese

industry and initiative - the Japanese have built a remarkable industrial economy. However, the fundamental precept of that economy is the importing of raw materials, the adding of value in Japan and then the exportation of those raw materials. The basic raw material of Japan are those raw materials which relate to energy. Take a little look at history. Thirty-seven years ago you can see how important Japanese leadership felt an embargo of oil was with respect to their continued health.

Today we have a situation where the Ministry of International Trade & Industry predict that the increase in demand for oil or the derivatives of oil will be something like 1 and 1/2 million barrels a day between 1978 and 1982.

The Japanese political leadership since World War II has been entrusted in the hands of one party, the Liberal Democratic Party. That party is very closely aligned and associated with the business leadership of Japan. They interface on a daily basis and their top officials move freely back and forth. It was almost inconceivable that a steady source of petrochemical feedstocks in the mid 1980's would not be the subject of decision making at the highest level of Japanese industry and Japanese government given the strategic importance of fuel, energy related fuel, in Japan. The fact that no official of Alpetco set foot in Japan until October the 3rd, that in three visits negotiating - preliminary negotiating visits - Mr. Barbour met on two of the three occasions with the Prime Minister of Japan gives you an indication of the importance and the strategic importance of a steady available supply of petrochemical feedstocks to the overall well being of Japan.

You tie that to the present problems of the United States/

Japanese trading relationships, which are perhaps caused by many factors, but the bottom line is that for the past few years the deficit in U.S./ Japanese trade balances has been such as to cause concern at the highest levels of our government. Within the past two months two separate deputations from our own government - the Rippers (?) and Ambassador Strauss - all to explain and in public fashion - the need for Japan to materially increase their purchases from the United States if the Carter administration is to be able to hold off the forces of protectionism which are mounting in our Congress and throughout our country. Anybody who watches the steel caucus shoe caucus, the textile caucus, the number of protectionist measures introduced within the United States Congress in the past two years know that this is a very real problem indeed.

So you have with the Alpetco proposal a unique timing. A timing of a facility for which Japanese participation for the Japanese would not only mean, as Mr. Spitz has outlined, an opportunity to participate in a very viable economic endeavor but an opportunity to secure and to participate in securing a steady, dependable supply of petrochemical fuelstocks over a period when the shortage of fuel and energy in Japan will be very, very material. In the United States we have briefed top career civil servants in our own government on the basic proposal of the Alpetco project. Without exception the initial reaction from our top career civil servants and this is State, Treasury, Interior, National Security Counsel - has been that it is consistent with the fundamental direction of U.S. international trade policy; that at such time as the State of Alaska makes a definitive decision with respect to the competing proposals before you, that top decision makers would meet to consider

what steps might be appropriate in light of the United States' vital interest, with respect to further discussions between United States and Japan with respect to trade matters. No commitments or anything like that. Just plain common sense and the understanding that this is the type of proposal which needs the scrutiny and study at the highest levels.

The sum total of the timing of this proposal is that quite aside from the economics, quite aside from the great Japanese ability to make money in trade, that the timing is such as to make Japanese participation almost inevitable. Now we will distribute, and I think - Will, - have we distributed the letters, the last group of letters? We have strong indications of interest from one of the Japanese trading companies, Nissho-Iwai, whose sales last year were over 26 billion dollars; we have interest from Mitsui which already has been spoken of by Mr. Spitz; we have letters from Marubeni Seoto (sp?). Bear in mind the first preliminary discussions with the trading companies didn't take place until really January. We have strong letters of support, of course, from governmental officials. And I think in the last analysis, the facts of the world conditions and relationships between the United States and Japan and the very real strategic needs of the Japanese economy as such, indicate that quite aside from the economics of this Japanese participation given reasonable opportunity by Alpetco is assured.

LeResche: Okay, thank you very much....we'll reconvene at 2:00 p.m.

Meeting recessed until 2:00.

LeResche: Will the meeting please come to order. Mr. Honig, please proceed.

Honig: We'd like to put up the outline we showed you at the beginning this morning, of our presentation, and that still should be ownership on the top, and the next is benefits to the State of Alaska, next is viability of the project and finally, summary. To remind you where we are now, we have been talking about viability of the project and we've discussed the management, the description and scope was discussed by Gordon Cain, marketing was discussed by Peter Spitz and the political aspect of marketing by Joe Tydings. We would now like to address briefly the subject of financing.

As I mentioned earlier, we associated immediately on getting into the project - last June - we associated with E. F. Hutton and Kuhn Loeb as co-investment bankers for the project. Both were already bankers for Alaska Interstate Company, and Kuhn Loeb also for Seatrains. The other reason we associated them, not just because we knew them and they knew us, but each has had extensive experience in the field we are talking about here. Particularly in the tax-exempt financing and particularly in large project financings involving energy companies.

To talk to you about the permanent financing, both conventional as well as tax exempt, I'd like to call on Tom Kenny, who is managing director for what is now Lehman Brothers, Kuhn Loeb, and he is assisted by John Vickers, who is a Vice President of E. F. Hutton. Tom.

Kenny: I feel just a little bit like the place kicker in the waning moments of a football game when the opposing coach calls a time out to make him nervous. But the analogy really isn't true here. Two

reasons: first of all E. F. Hutton and ourselves are not unaccustomed to being in the position that we are in at the present time, and that is advising businessmen concerning the financial soundness of an important project such as we have at the present time; and secondly, and perhaps most importantly, as Charles says we have been involved in this right from the inception and we have not changed our minds one bit, have not altered our thinking at all concerning the financial soundness of this project.

Charles says I'm a Managing Director of Lehman Brothers, Kuhn Loeb. This is a relatively recent firm created by the merger of two important banking organizations, both of which were created in the middle part of the eighteenth century...nineteenth century. I'm a hundred years behind, and.. Both Lehman Brothers and Kuhn Loeb, during the more than one hundred years they were in existence, I think it's fair to say, were certainly in the forefront of capital raising in the American capital markets for industry and we intended the combined firm will continue to be so. Our partners in this chore of advising, structuring and implementing the financing for this project, E. F. Hutton & Company as represented by Mr. Vickers, is by most measures the second largest of the full-line investment houses and also by most measures is the most successful of such full-line investment houses. E. F. Hutton has some particular merit and standards and expertise in the flotation of tax free issues. We anticipate that in this roughly 2 and 1/2 billion dollar capital requirement that we have here that as much as perhaps 300 million to 350 million of it may be accomplished in tax free issues. In connection with this an in depth study has been prepared concerning the

availability of such tax free financing in Alaska which I have a copy of here. Some of you may have seen it. We certainly have copies available to anyone who would like to see it.

E. F. Hutton and now Lehman Brothers, Kuhn Loeb - incidentally it's known as Lehman Brothers, Kuhn Loeb in the United States and Kuhn Loeb, Lehman Brothers every place else. That's an interesting compromise. You might have guessed about the negotiations that went into that one.

We've written letters early in the game concerning what we thought was the financial soundness of this project. We've written further letters elaborating on the earlier letters. We prefer to stand by the letters that we wrote and are prepared to say to you at the present time that we don't feel any differently and that feeling is that given the Alpetco approach to this project it can be successfully financed, that appropriate capital costs with the conventional important financial institutions primarily in our judgment in the U. S. capital market. Now in this market we anticipate that the financing will be structured as the project financing. The project financing, generally speaking, will have more debt in its capital structure than a normal business enterprise. It will do this for two reasons. The first of which is of course is it is a sensible business scheme in the first place and we've heard lots of that this morning. The second and perhaps more important is that we would anticipate support, financial support, with respect to this capital structure because of executory contracts which would run to users of the output of the facility. This project financing would be accomplished over a period of time that's going to stretch for several years and will be done in several discrete financial increments. We

anticipate that they will aggregate, as has been said here before, a total of approximately 2 1/2 billion dollars. In our judgment given the nature of the project, the type of financing scheme that we contemplate here, the time frame of which we're going to accomplish it that it can be readily accomplished.

We do expect, as was earlier mentioned here, participation in this venture by the users of the output of the facility. We would anticipate that the participation that these users have might very well take the form of equity interest in various parts of the project as it was been described. This would not be unusual. Quite to the contrary this would be something that would not surprise us at all. It would be a quite normal arrangement. We were asked during these negotiations what we thought about the availability of equity monies for this project, and we have written a letter on the joint letterhead of KL and Hutton, a copy of which is in the update that was delivered to you gentlemen, I believe in the last several days, in which we say that we believe that any necessary equities for this project can in fact be raised readily. There are two matters I would like to emphasize concerning financability which I've heard about in the past two days during these hearings that I think are probably essential in accomplishing the financing and certainly in pushing the financing beyond the stage that it is at the present time. That is I'd like to emphasize that we cannot reasonably expect the progress of this financing to proceed any farther than it has without an award of a contract. And the second is that I believe that it is also essential that the supply of the crude oil be assured just as much as it possibly can via, of course, the initial contract and also

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that the option, if it's necessary to - and if it's available, of course, to build the supply up to the originally contracted for amount.

Charles, that's all I have to say.

Honig: The other part of the financing we have someone here to comment on is the part of the financing that most of must be done between the time that we break ground and the time the project is completed in phases. This is called construction financing or interim financing, and we have with us John Mazzuto, of Chemical Bank in New York. I keep introducing him as a vice president. He keeps missing that promotion and I believe is working on it again. John Mazzuto.

Mazzuto: I'm not sure I'm happy about that introduction or not. I'll have to think about it. But just a few words about the Chemical Bank for those of you who are not familiar with it. We are the sixth largest bank in the United States; we have at approximately 1977 I think \$31 billion in assets. \$105 million dollars in net income. We consider ourselves one of the leading financial suppliers of monies in the United States to corporations such as Alpetco and Alaska Interstate.

Before I talk for a few minutes on the various financings that we have been discussing over the past several months - one thing I would like to make very clear. That these financings that we have discussed and we have committed letters to are not esoteric and they are not exotic. The type of financing that we deal in day in and day after. They're sort of a plain vanilla in our language.

There are three financings I would like to outline briefly. One deals with one of the partners in this venture and two others deal with Alperco. We realize within Chemical Bank that original monies are

usually spent on these projects in the form of equity contributions. Mr. Honig of Alaska Interstate has asked us to consider what type of debt capacity his company could offer as to equity contributions. We have submitted to him a commitment letter that Chemical Bank would lend as part of the bank group \$100 million dollars to Alaska Interstate for equity contributions to this particular project. Twenty million dollars of that money would be available on day one upon execution of the contract. We feel that the additional funds between our \$50 million commitment and up to \$100 would be easily obtainable within the U.S. bank market. We have discussed with other banking institutions on a general concept basis how we would do this and they are in agreement that it can be done.

As to Alpetco - one of the necessary ingredients here is a construction financing loan - the as you build it before the permanent financing comes in on take out. On the stage basis that this project is being presented, we believe that a \$400 million credit would be adequate which would be obtained by a group of banks lead by Chemical Bank. We have indicated to Alpetco that the Chemical Bank out of that 400 would be willing to commit \$100 million dollars of its resources. Again, we have discussed this type of credit with other colleagues in the banking industry. We think it's a - I wouldn't say simple- but is a type of credit that we see every day and we believe can be put together in an orderly manner.

The third financing that we have analyzed is that when the Alpetco group reaches certain benchmarks and it starts marketing the interim crude oil. Our studies have indicated for the amount of crude

oil marketing sales and payment terms that have been discussed heretofore that a line of credit in the amount of \$100 million dollars would be sufficient to finance such an operation. Again, we have committed in writing to Alpetco that the Chemical Bank believes that \$100 million line of credit could be set up and the Chemical Bank would be willing to take up to \$50 million.

All these commitments that we have made, and I believe they are in letters that are available, - I'm sort of emphasizing again, there's nothing exotic about these, there's nothing esoteric. They're subject to a credit agreement. The credit agreements that we deal in day in day after - it is a thing we follow all the time.

I guess my piece is very short. My concluding remarks are -- start with my beginning comment. We believe that the commercial bank role financing within the Alpetco project is one we are familiar with, and two that we feel fairly confident can be accomplished in an orderly manner.

Honig: I failed to mention that both John and one of the senior vice presidents of the Chemical Bank were with us at the Royalty Board Meeting in Valdez and the other member of our team, Gren Paynter, was unable to get here for this meeting, but has kept in touch with us by telephone and is also very interested in the project.

One other thing I might comment on in the area of financing that I think deserves clarification perhaps to some, and that is what our position is and what our plan is with respect to joint ventures which have been mentioned from time to time. This is just a for instance if we can get it in focus. The center part there with the three boxes -

the center box says "core refinery". Just to call it a "core". Then the box on the left says ports and docks and the box on the right says utilities. Let's just take those for a moment.

It's quite possible, both on the financing and on the ownership of some of these off-site facilities, that they could be owned by someone other than Alpetco. Perhaps a municipality, if there were interest, could own the port and docks facilities. The financing backup is going to be identical. It will be the credit of the Alpetco project that makes it possible whether it is owned by Alpetco or not, and the availability of tax-free financing is no different in this case. So those are possibilities.

Then we show other boxes off the core refinery and one says aromatics up at the left and the one on the right says fuels - it shows both domestic and other. And these are possible areas of joint ventures. Below the "core" refinery we show olefins plant #1 and olefins plant #2 and those might be a joint venture where we would bring in a chemical company to own part of the olefins unit and Alpetco own part of the olefins unit and form some joint venture. So, the main purpose of this chart is not only show that such things are possible but that this is what we are talking about when we say this kind of project lends itself to attracting ancillary and related other businesses and also indicates our willingness to take partners in who bring as Gordon and Peter said, who bring talent and knowhow and money and markets to the table.

I'll ask Gordon Cain if he will summarize for you briefly.
Gordon.

Cain: John I suspect that it's a little relief to hear that

this is a summary which ought to suggest that we're nearly finished.

All of us have a tendency to think about the future as though it's just a simple extension of the present. And if we thought that the conditions in the oil and petrochemical business five years from now would be the same that they are today there would be clearly no reason at all for us to be here trying to persuade you to let us sign a contract for a large amount of oil for a long period of time. We understand (unclear) ...

we have sold you and that is today it's very difficult to take market price oil refine it and make any money. And we suspect that Mr. Wetzel will tell you shortly that there's a big over supply of petrochemicals.

But we're not talking about (tape out) now, I think all of you know that the informed opinion is that sometime in the eight years this current surplus of crude oil will be converted into a shortage. And that when this shortage is either honest or is evident then at that point having this substantial commitment for feedstock in a politically stable area will be a valuable piece of paper. And it is with this asset that we think the - it is this asset that we think gives a high probability to the success of the Alpetco project. It is our plan by the time - by 1984 - to have a facility that will supply the fuel requirements to the State of Alaska, that will produce petrochemicals that at that time will have a favorable market environment. The things that we plan to produce are all now growing at a rate of six to ten percent a year and the output of this plant will represent less than five percent of the total Japanese/U.S. market. So we think that at that point the market conditions for this plant output will be favorable.

We've also said to you, and I think it should be clear, that

we are not uniquely astute in recognizing that sometime in the middle 80's this supply of hydrocarbon feedstock is going to be very valuable. There are other people who recognize this also and we're confident with the help of these companies who are very much interested in this hydrocarbon feedstock with the organization that is being built up, with the support of the owners, with the help of the State of Alaska, we can make Alpetco and Alaska a significant factor in the world petrochemical business.

Thank you.

Honig: We would like to conclude with a list of the Royalty Board goals as mentioned by Governor Hammond in his speech on the 19th and we think that Alpetco has met all of these goals. First - no less money for the oil than the State receives in-value; second, no subsidized sales; third, an in-state facility for processing the royalty oil; fourth, a minimum risk to the State; fifth, comply with strict environmental standards; sixth, provisions for job training; and seventh, commitment to hire trained Alaskans.

Thank you, Mr. Chairman.

LeResche: Thank you all. Does the Board have any questions, public members?

Lyon: It's nice to know that if we did we have 29 people here who could answer.

Triplehorn: ... mentioned a figure of financing to the extent of 2.5 billion and yet the contract now specifies 1.5 billion - I assume that's (unclear) previous figures in the earlier version.

Honig: Dr. Triplehorn, let me give you my understanding of those differences. There has never been any change in Alpetco's position as to what we wanted to build. I think we came along initially perhaps a little too rigid in talking about the exact configuration of the petrochemical complex. If we did, we didn't mean it. We gave everyone a book which had pictures of vessels and pictures of different parts of the petrochemical complex and I think if we'd left the impression that it was rigid we wouldn't change that at all. That's not the case obviously because it will have to be modified in various configurations making more of this and less of that as we line up partners and sales contracts for products. But whatever configuration all of our people have always been convinced and still are convinced that it's going to cost at least 2 1/2 billion dollars. Now the 1 1/2 came into play when Commissioner LeResche and his staff said we want some benchmarks in this contract. You don't have it all signed up and put together and ready to break grown tomorrow - we want some benchmarks, we want some requirements progress requirements as you go along. These should be minimum requirements; and they are. both in time and in dollars and in other measures so we said don't set them if you can't make them. So when we set a billion and a half that did not mean that we cut the refinery down. It meant that we've got to meet that or you can cancel the contract. And we also said as we looked at these - well you get to the eighteenth month and have a financing commitment then I can relax or the State can relax because the bankers are going to see that it goes from there to they commit money - and that's correct. At one time there was a misunderstanding when we mentioned six hundred million dollars and people said

well you've cut back on what you're going to build. Well, we hadn't at all. And later in a subsequent conversation Commissioner LeResche, looking at the benchmarks, and he was one who felt we had cut back earlier, looked at the benchmarks and said well I'm not concerned after you get the six hundred million. I don't think we need to put those other numbers in. And then he realized why we had said six hundred earlier.

So these are just minimums and they are guideposts or progress marks that we have made. But they don't represent any curtailing down of what we planned initially. Does that answer your question, sir?

LeResche: Don, let's see if the Board members have any questions.

Wold: I just had one add-on, ... that also means you're not committed to build anything more than one and a half plant.

Honig: That is correct. That is correct. I am advised, however, by Brown & Root and by ChemSystems and by Gordon Cain that to build what we are talking about is and that's an academic number because it's going to be more than that. There's no way to build what we talking ...

LeResche: Yeah. I might add the commitment - it's also in words in the contract as to type of facility.

Honig: Yes, but, but not - we're not tying the configuration of it down. We don't know how much of ethylene and pyroethylene we would end up (unclear)

(unclear)

Lyon: Sir, we have - we're going through the contract (unclear)

and I guess I don't feel like I'm quite through too far enough in case some of you will be around tomorrow in case something else comes up.

Honig: Yes. Not all of our people can stay but I will be here and Peter Spitz will be here in the technical area.

LeResche: I think it would be important if your attorney could be here, too, if that's possible.

Honig: We will work on his plans. Are there any other particular areas that Commissioner you would like us to have people here for - such as finance or engineering or construction or

Gallagher: As for myself I'd like to know what the contract (unclear)...any questions of a non-technical contract word nature.

Lyon: It's a shame to have all that power sitting there and not be able to ask a question.

LeResche: You're wrong, that's the talent, here's the p r.

Lyon: Mr. Honig, your team has done its work effectively.

LeResche: Thank you all very much.

LeResche: Okay. The next side we're very glad to have our Pardon me - you're not next. We're glad to have Joe Moore from Bonner and Moore here and he's agreed to give us a very short summary of his report and to be available for Board questions on the record this afternoon. Joe.

And I would ask speakers to speak up and anyone who's having trouble hearing to come closer.

Moore: Mr. Commissioner and Members of the Board - I have submitted my written report to you some weeks ago and most recently I

submitted an update of that report in the form of a letter which commented on some additional developments which had been made in the Alpetco group since the date of my evaluation. At this time I will just comment on our conclusions and summaries of our report and will not go into the details.

Our report first concentrated on the question of what the likely in-value price of oil would be to Alaska in the future. Since the objective of one of the policy statements of the Governor has been that the State will receive at least the in-value price of crude oil and that our charter was to determine the economic characteristics of these projects it was necessary that we first get some idea about what the range of in-value prices are likely to be in the future. Those numbers are a part of our report and they are used in subsequent comparisons where we determine on a pro-forma basis how each of these projects might be able to afford to pay that price. We are trying to put ourselves in the shoes of perhaps a financial institution - how viable these projects would look from an economic standpoint given the objectives of the State of attaining at least the in-value price of the crude oil supplied to this project.

We determined that four separate categories of evaluation would be used. Our purpose of breaking our evaluation procedure down into four categories was because the relative importance of these categories are almost a matter of policy and certainly of subjective evaluation. How each of these projects meets the overall objectives of the State of Alaska is certainly not a matter of direct calculation because many of the objectives of the State are not readily quantifiable.

The four categories we choose to describe these projects are first - economic viability; second, management; third general business merit - which obviously is a catch-all phrase intended to describe you might the viability of the general business plan. And then the fourth category we listed as a probability of implementation. Which was an attempt to put into one category all of the doubts and uncertainties which might accrue to either of the projects which would determine whether or not any of them ultimately became implemented.

In terms of economic viability we made a calculation using certain standard economic parameters which enabled us to back calculate the price of the feedstock which each of these projects could afford to pay based on some standard market prices for the products and then we choose to compare that back calculated affordable price to the in-value price of the crude oil. As I mentioned, the in-value price of the oil covers a substantial range which is effected by the outcome of the present litigation concerning the payment of field costs for the oil and secondly by the future logistics which determine the ultimate transportation cost of Alaskan crude to its ultimate destination. The lower those transportation costs being the higher the in-value price being to the State.

In terms of economic viability, and now I'm speaking always in terms of our report as amended by the letter to Commissioner LeResche, that the order of economic viability would be the Alpetco project and the Alaska Petrofining project essentially comparable and clearly viable from an economic standpoint. | Thirdly, would be the Alaska Petroleum Company proposal which is somewhat less attractive economically but

still I would consider it to be financially viable by normal measures. Now I must emphasize that these criteria are one dimensional. When I say economically viable that is to say if you get this price for the product and you sell a volume of the product then that proves as an income. It's sort of like saying if you have ham we'd have ham and eggs if we had eggs. So the economic viability does not speak to the question of whether the markets really exist or whether the projects can actually be financed.

The second category was that of management. In terms of management we classified Alaska Petroleum Company first. The reason for this was very clear cut. Alaska Petroleum is the only large corporation proposing to build a project in Alaska which is presently in the business of refining crude oil and marketing it. The parent of Alaska Petroleum Company Coastal States is quite a substantial member of that industry and as such is clearly qualified with substantial resources to provide the management that their project would require. I might also say that in evaluating management we took into account the problems they had to work. I think that as my other comments will indicate building a crude oil refinery is less of a developmental problem than building a petrochemical facility. So although two companies might have the same quality of individuals if one of them tackles a harder job we would say that their management is less qualified relative to their ultimate objective. So in an absolute sense we are not necessarily saying that someone who is lesser qualified has incompetent people - but rather that they may have tackled a harder job.

The second project or the second group that we ranked in management was Alaska Petrofining. Third, Alaska Oil and Chemical and fourth, Alpetco. With the exception of Alaska Petroleum Company each of these other three groups could be called promotional groups. That is they are companies who have or syndicates or partnerships who have been formed to pursue a specific investment objective. They do not represent major companies who are simply expanding ongoing operations. Now in terms of their management capability, or their management resources, I think it's useful to try to add a dimension of what in an absolute basis is the depth or the adequacy of this management given the general context of the proposal. Alaska Petroleum is clearly proposing to expand their supply of crude oil, they are qualified to do this, they have management depth, and therefore they come out ahead. The other three groups are developmental groups and in terms of what other typical developmental groups look like I think they all three have quite adequate management resources. Now they certainly don't compare to an ARCO or a Shell or someone who is already in the olefins business. But compared to other developmental projects I think that all three are adequately managed for this phase of the project. And I think all four are qualified to tackle their project in the sense that they have been represented to the Board.

The third category, general business merit, we categorized Alaska Petrofining as being particularly well qualified in terms of their business plans and we felt that they were particularly well qualified because they recognized, as did all the proposers, that there were certain unique economic situations in Alaska brought about by

geography, cost of construction and so forth, and that there had to be some answer or some property of their proposal which would overcome these characteristics of the problem. Alaska Petrofining in our judgment had a very effective and somewhat unique business plan that effectively answered the problems that the location in Alaska poses - at least on a current basis. The general business merit of the Alaska Petroleum Company was ranked second. It was ranked second because - or it was ranked highly - because it simply represented an extension of a present business and as such was founded on a fairly strong business plan.

Third Alaska Oil & Chemical Company and fourth Alpetco at this time I would say that their business plans are much more similar than they are dissimilar. I think both of these companies - I couldn't at this point distinguish their business plans. I couldn't rank Alpetco third and Alaska Oil & Chemical fourth. I think that at this point the business plans are comparable and I would rank them comparably. I will say one thing in view of the presentation that we have heard here today. My prior exposure to an Alpetco presentation was the one in Valdez - and particularly since I have modified certain of our evaluations with regard to Alpetco I would like to say that I have been much more favorably disposed towards Alpetco's general approach toward developing their project. I had some considerable concerns about it earlier. I feel that it's quite professional at this point.

The order of the probability of implementation - essentially I ranked the two refineries more likely implementation and the two petrochemical projects less likely of implementation. I ranked the Alaska Petrofining Corporation first on the basis that their economic

looks strong, they appeared to have their market well defined and within reach, and their project in general seems to be at a more advanced stage of development. Alaska Oil and Chemical Company I ranked second primarily on the question as to whether or not the parent company Coastal States would ultimately decide to invest in Alaska relative to other investment opportunities they had. Yes.

LeResche: Alaska Petroleum is the one who has Coastal States as a parent company.

Moore: Pardon me. Alaska Oil and Chemical Company I still rank second.

Alaska Oil and Chemical Company was ranked second because of the proposal they made which is you accept their crude oil purchase terms would clearly be a financable proposal and would be one which they probably could implement with regards to their business plan. Thirdly - excuse me, the Alaska Petroleum Company was ranked third because of uncertainties as to whether or not the investment opportunity in an Alaska refinery would be favorably compared to other investment alternatives that their parent Coastal States would have. The Alpetco proposal was ranked fourth.

Now if we were to say that both Alpetco and Alaska Oil & Chemical Company would be subjected to the same conditions regarding the purchase of crude oil then I would probably reverse the rankings of the two chemical companies - well I would change the rankings around quite a bit - the oil companies would be the most likely - the refineries would be the most likely projects of implementation - the Petrofining first Alaska Petroleum second and the two chemical projects being less likely

of implementation with Alpetco ranked third and Alaska Oil & Chemical ranked fourth.

I would sum up the our evaluation this way. We really have two kinds of projects that are proposed. These two kinds of projects represent substantially different business circumstances. Refineries are dealing in commodities where the competition is essentially a price competition and where if certain financial or economic conditions can be arranged then a suitable price can be evolved wherein the product can be sold. The markets are well known. I think that both the refinery proposals that were submitted have good feasible business plans, the markets are known, the rate of growth are know; they are quite predictable. The two chemical companies - the two petrochemical projects are similarly unpredictable. And I think that we have heard this morning what I would consider a very fair and balanced representation of the uncertainties in developing a petrochemical project.

I would - I think I would paraphrase a couple of the comments that we heard. Dr. Spitz discussed at great length the difference between the short term outlook and for chemicals and the long term outlook for chemicals. And I concur completely with the evaluation that it's a cyclical business from the standpoint of supply and demand and currently we are in a state of oversupply but we will not be for many years. So down the road there definitely is and will be for many years to come room in the market for projects that are carefully conceived and patiently executed.

By the same token the problem in putting one of these proposals together was I think identified by one of the other speakers in connection

with the reaction of certain of the parties in Japan. That as long as you sit there with overcapacity you can't sell out for the next two years it's hard to think about what you're going to do five years down the road. And I think that's the fundamental problem that any petrochemical project in the United States or abroad faces in trying to get the thing developed in a limited period of time. So the question of likelihood of implementation or the certainty that Alaska would have an industrial complex based on hydrocarbons in the future is going to be somewhat less if you go the petrochemical route, it would be greater if you go the refinery route. By the same token, the existence of a petrochemical complex of a type that is contemplated definitely offers the opportunity for future growth, growth of satellite industries, growth in demand for the products that are built by the facility and the opportunities to upgrade in the future fuels into additional production of petrochemicals. So I think then one might say that the State's long term interests is to foster a substantial and growing industrial development based on hydrocarbons. Then certainly the petrochemical industry offers a much greater opportunity to do that. Accompanying this greater opportunity is a much higher risk of uncertainty that within the time frame we are discussing such an opportunity can be effectively promoted. However, I think the proposals that have been made at this time are well conceived, if aggressively and intelligently executed would maximize the chance - would maximize the chance that this was a difficult undertaking could be accomplished. Thank you.

LeResche: Thank you, Joe. Questions from the Board?

Lyon: Your first report was in January.

Moore: January 3rd. I have a calendar. I missed the football games to come up to that, I remember.

Lyon: I think I recall asking you whether any of these will fly and you said as they are presently constituted, no. You probably didn't say that because you don't say it quite that hard. Is it your opinion now that these can be made to fly?

Moore: I think that I'm having to - part of my answer has to do with what I've heard second hand about the financing report; particularly as it regards Petrofining's. If the Petrofining project did not have any financing problems which I don't know whether it does or not. I feel that project had a high likelihood of flying. I think the Alaska Petroleum is limited primarily by the actions of its own parent company - if the parent company decides that it's a viable business they want to be into then I think the business certainly is there to make it fly. The petrochemical ones they're riskier. In trying to quantify how risky they are I just - it's just a very hard thing to say. You know are the chances 50-50 that it will fly? I guess I would answer I don't think they're better than 50-50. But I don't know if I could be more precise than that.

But I think there is very definitely a risk in either of the petrochemical ventures; but in the timeframe we're talking about, and I take into account particularly the Alpetco timeframe, time line, that by 18 months they would have 70 percent of their output sold, and that it could be sold under terms that will ultimately permit the financing to take place; that's a tough job.

Lyon: You're asking someone in 1979 to be wise about how

things will be in 1983 or 1984.

Moore: Uh huh.

Lyon: It's hard to do.

Moore: Well and it's a competitive business I think the approach they are taking minimizes the effect of competition. They are now proposing, perhaps they were earlier and I did not understand their plan as such but the notion of taking in joint ventures, the notion of positioning themselves as a supplier to non-competitive interests I think is a vital tactic in strategy in developing a project of this sort. It was first articulated to this group by Alaska Oil & Chemical and has now been more specifically articulated also by Alpetco, and I certainly agree that that's the way to go. And I think that sort of thing is do-able. You know - there's a certain amount of luck and a lot of hard work and a lot of astute negotiation I think. There certainly are - there certainly are ample - well ample, there are a few examples of similar projects having been developed elsewhere. I mean there's not a lot of them - but there are some. (unclear)

Moore: Are there other questions?

Warwick: Joe, if you were involved in say a not one of these proposals but say there was a fifth proposal and you were retained as a consultant to the firms bidding for the royalty oil for this Board what would you recommend as far as implementation and acknowledging that there is a high degree of interest on the part of the Board in petrochemicals. How would you ... what would you recommend to the people who retained you as far as a method of proceedings. Not necessarily telling the Board what it wants to hear but implementing the project.

Moore: In terms of a business plan?

Warwick: Yes.

Moore: Well, I think I would follow the same general strategy that has been outlined in the two proposals at this time. That is the notion of developing a core facility which can produce products for next line consumers if you will, or the producer of petrochemicals up the chain from the basic petrochemical raw materials who themselves do not have assured sources of supply. In terms of basic strategical issues in the petrochemical industry the question the future question of hydrocarbons supply has been predominant for many years. By many years, 10 years; perhaps even longer than that. And on one hand you have the oil companies who let's say traditionally were not in the petrochemical business but certainly have gotten heavily into that business in recent years. Then you have the traditional petrochemical manufacturers who traditionally have not had a supply of hydrocarbons. They have bought hydrocarbons on a market which had an excess supply. And as that excess supply disappeared then the long term strategy of the company is how it stays in business has gotten very much involved with where does it get it's future supply from. Now the thing that a petrochemical project in Alaska can offer as has been stated very concisely from the people from Alpetco, is an assured source of supply. So the problem that you have in development or in promoting such a project is to offer that secured source of supply to someone to whom that is an advantage. Now that means you don't go out to the major oil companies and say won't you buy some of our ethylene, probably. They certainly are trying to protect their own share of market. But I think the general plans that emphasizes

the control of the feedstock and goes to companies who are insecure in a source of feedstock is the basic strategy you deal with.

Warwick: I'm not sure what you are saying - it appears what you're saying is initially you commit yourself to an oil products refinery and then at some future date, maybe after the refinery is in production, that you add on petrochemicals. Is that -

Moore: No, I didn't mean to say that. I think that the basic industrial process of producing petrochemicals does lend itself to a gradual conversion, if you will, from the utilization of the most of that material - fuels to utilization of most or at least a high percentage of that material to petrochemicals. And that can be done over a period of time as markets develop.

Warwick: Historically what percentage of refineries do convert to petrochemicals? Is that -- transition?

Moore: Oh, I think most refinery capacity in the United States has been most of the barrels of oil that are refined in the United States do have some petrochemical byproducts produced by most I mean 80 or 90 percent. There may be very many small refineries that don't produce any petrochemicals but in terms of the quantity of crude oil that is processed in the United States most of it has some petrochemicals extracted from it. Now in terms of percent of crude oil which is converted in petrochemicals I think in the U.S. right now it is about 4 percent. But - and this is because the bulk of petrochemicals in the U.S. have not been made from crude oil in the past. They have been made from ethane, natural gas or natural gas liquids which was how the petrochemical industry in the U.S. basically started - or at least that's how

the ethylene business started. Most refiners produce what are called aromatics. You've heard the term several times today - benzine, tylen, zylene or BTX - that's a one word term in refineries and U.S. refineries started in that business right after World War II and most of them are in it.

Warwick: It would appear to me and I don't have anything to base this on should we get initially an oil products refinery that would be somewhat difficult to add on the petrochemicals if for no other reason because of the financing agreement the company would have more or less long term commitment for oil products rather than petrochemicals and the incentives or the ability to convert to petrochemical might be somewhat difficult.

Moore: If you couldn't get any more crude oil to add additional feedstock to your facility and if in fact all of your output was tied up in long term contracts then I would agree. It would be difficult. You have less flexibility here in these proposals than you would have if you had a major oil company that was established in the market and was simply supplying to the market or on short-term contracts where they had more flexibility in their planning process. I think here the financing requirements do impose certain rigidity on that problem.

Warwick: What additional quantities of crude would we be talking about?

Moore: Well, I think a significant petrochemical production facility can require not much less than 100,000 barrels a day of oil. If you are going to make ethylene in a world scale unit as we say here - roughly a billion pounds per year of ethylene this requires something in

the range of 55 to 60 thousand barrels a day of liquid hydrocarbon. And some of the hydrocarbon out of the crude oil is not suitable for an ethylene unit so to make 60 thousand barrels a day available let's say you'd probably have to run at least 80 thousand barrels. So perhaps that represents the minimum throughput for facility that is feeding one - primarily feeding one world scale ethylene unit.

Warwick: Let me phrase the question a little differently. Suppose you have a hundred thousand barrel a day - no let's make it 150,000 barrel a day oil products refinery - what - how much additional crude would be necessary in order to add on petrochemicals?

Moore: Given your premise that you had all the output tied up in long term contracts? or most of it?

Warwick: Yes.

Moore: Well, the amount that you would not have tied up in long term contracts probably if I excluded the Alaskan, the in-state use of fuels from that, there might be only 5 to 10 percent oh..I think one proposal said at one point said they would like to have 20 percent of their products available for spot fills in the market. But we might say in the order of ten percent of the oil output might not be readily tied up in long term contracts so if that ten percent represented 15,000 barrels a day and we needed a minimum of 80,000 barrels a day then you need another 60,000 barrels a day or so of crude throughput to add a major petrochemical facility on top of the the existing refinery that couldn't get out a long term contract. Have a tortured answer to a kind of complicated question.

LeResche: Sterling?

Gallagher: ...five years we see that conspicuous lack of new refineries being built, also (unclear) take place in America.

Moore: If you look at long term projections for petroleum products we see that there is we would expect that there will be continuing growth in the demand for heating lets say fuels as opposed to gasoline. We generally pretty well think that for sure that the present regulations that have been enacted by Congress on automobile - the future efficiency of future automobiles - will cause the gasoline demand to plateau and then to recede. So we think that the complicated part of the refinery, which is that part required to produce gasoline, both the complicated and expensive part, we probably don't need any more of that in the United States except to replace what rusts or has fallen down. We do need more fuel oils for industrial use, power generation, and for home heating. Now those oils in the United States - those oils have to be low sulfur. If we're going to process high sulfur crude oil in the United States which tends to be what's available to us as far as extra supply is concerned, it's very expensive to take the sulfur out of that oil in the United States because we have to make hydrogen and generally our raw material for making hydrogen is expensive. If you look at the alternative of doing this overseas they have ways of making hydrogen that are much cheaper than we can do. For example, in Venezuela, there are gas resources which do not have markets that can be converted into inexpensive hydrogens but - so they can produce low sulfur fuel oil less expensively than we can produce it. So if you look where the increment of growth will occur in the United States it is very susceptible to being replaced by imported product. Gasoline we really can't import

because we don't need any gasoline. Fuel oils we can import and probably we will import most of our future demands for growth in that area.

Callagher: One of the things I was trying to get at is do you think that current price differential between sweet and sour crudes will widen or become more to reflect the capital cost of installing a sour crude refinery or will it continue not to be reflected.

Moore: If there is no change in the relative availabilities of those crudes then perhaps right now the sour crude - right now the posted price between the sour crude and the sweet crude cannot hold up in the market really. Because the posted price represents more of the quality differential than the refiner sees. I think in the future the refiner will be more taxed to take sulfur out and so I think we would see the price spread continuing to widen unless there were major discoveries of sweet crudes which just would dilute the problem throughout the part of the world that is concerned about sulfur crude oil. But if we take the present supply as being representative of future suppliers the present ratio supply then I would say that the spread would tend to widen. Well let's say the present posted price would tend to return to its actual posting.

Callagher: So if you feel that a sour crude refinery the chance is the economics will improve in the future/better.

Moore: If I build a sour crude refinery the change of economics will improve--- Oh yes. Right. Right. Yes. Right. Yep, if you wouldn't want to build a sweet crude refinery today unless you put it in Indonesia or somewhere. Then I guess there is some question you want to do that.

LeResche: Don?

Tripplehorn: When we finally end our discussion of an oil disposal problem. You know we're going to face the gas issue and specifically the possible use of gas liquids - is there any incompatibility between a proposal to build a oil based refinery and let's say a possible very large petrochemicals complex with a gas or gas liquids feedstock?

Moore: Okay. The question is there is an incompatibility between an oil refinery...

Triplehorn: Oh, I'm sorry the petrochemical complex based on oil feedstock .. could we, for example, we sign a contract involving development of a petrochemical complex and then also foster the development of another large one based on gas liquids and would that make the previous one uneconomical. As I understand it gas liquids is the preferred feedstock.

Moore: At the right price it is. Don, I think there is an element of time if for example you were to award a contract to one of the petrochemical project proposers here and then six months from now award a - discover that the gas liquids will be available at a suitable price and you awarded a contract to a second group they would out getting in each other's way. I think they would certainly tend to confuse the market and each project would suffer because of the presence of the other.

Triplehorn: But that would hinge on future decisions - at the price.

Moore: Right now we can't say anything about how likely it is that gas liquids or gas would be available at an appropriate price to

foster petrochemical development.

LeResche: Joe, how about the possibility that working together with petrochemical/oil refinery large customer for the ethylene plant. That's one answer I've been given.

Moore: I guess the Alpetco people in essence addressed - Peter Spitz in essence addressed that question. I think in his discussion - he said that they might very well be a customer for the off - the product of an ethylene plant built elsewhere. And if it came along at a time when they were ready to expand their production that would certainly be a business decision that might be a viable business decision for them. It's a matter of timing, I think, more than anything. If an oil based petrochemical plant is in operation and it has a market, it has contracts then the general rate of inflation, if it's not changed, will make all future plants more costly in terms of the cost of their products simply because the capital cost per unit of throughput or unit of product inflates. These petrochemical plants, a high portion of their total costs are capital costs. So if that component is escalating then a plant that is built is already in existence already has some built in price protection from plants that would come in at a later date.

Triplehorn: I'm lost it - You ranked these issues. I wonder if you could also rank the obstacles that are to be overcome. I've heard a lot of cost of doing business in Alaska perhaps the geographic location, the variety of things - I don't have a very good feeling for the relative size of the different obstacles - what do you view as the most serious obstacle in making an economically viable project.

Moore: Well, let's take the question of an oil refinery first. I think that well no - in fact - let me not make that distinction - let me open the question simply to processing of hydrocarbons for fuels or chemicals. In the long term I think that the ownership of the raw material, the location of the raw material, is a very strong, positive factor. In the short term you are dealing with trying to create a link in a logistics system that's pretty well defined but that link doesn't exist now. There's nobody set up to take products from Alaska. You have customers and suppliers, who have a long standing relationship. For example, I'm a purchaser of polyethylene in California and I buy mine from the XYZ Oil Chemical Company, if you will. Now if I'm going to come in with a new project and get that guy's business I have to give him some incentive to abandon the XYZ Oil Company as a supplier and take me on as a supplier. Now that's a pretty crucial decision because I, as a consumer of polyethylene say, have got a lot of capital tied to my plant. I have customers I have to supply, so before I decide I'm going to let you supply me with polyethylene I want to be darn sure you're going to be as reliable as the XYZ Oil Company. And I think if you go out into the real world in trying to develop a project like these petrochemical projects particularly, or an oil project either, I think that you have a major problem of overcoming the - I don't know whether it's an energy barrier or a natural conservatism, or whatever it is - to create new supplier/customer relationships. You overcome that in various ways. And I think one way that we've talked about overcoming that here is you go to that customer who presently does not control the feedstock which

goes into the production of his polyethylene.

You say now in place of buying from me why don't you come in with me and you can build your own plant or I'll go in 50/50 with you if you don't want to put up that much money. And together you could integrate backward in your supply chain in effect. In general that's an attractive thought for a businessman. He controls one more element of his business. So I think this is both a problem that you have in developing any of these ventures from a remote geographical area and as a new promotional company and the thing that you have to do to respond to that. You've got to say that I'm going to be a reliable supplier and I'll supply to you at a price that is attractive to you. Of course this is another problem too, that anyone can promote a project and give the product away and the trick that any of these people will have in putting the project together is to build their market at prices that will support the financing. Because ultimately you still have to protect the rate of return that the financial institutions will demand in order to feel that the project is viable. So you have to develop the market in a way that does not lock you into an adverse profit position and you have to overcome the problem of historic supplier/customer relationships and establish credibility in the eye of the customer that you are a preferred supplier. One of the tricks you have of dealing with this is to get him to join in with you because you give him an opportunity to integrate backward that he perhaps he doesn't have otherwise. I'm sure there are many other answers to that question, but - Based on a short thought about it...

Triplehorn: ...much more serious than the increased costs of

doing business in Alaska would be ...

Moore: Well the increased cost of doing business gets down to the cost that you can afford to sell a product for. And one reason that given - forgetting all of the variables and just looking at the petrochemical products versus refinery products - generally petrochemicals are more a more profitable business per unit of throughput than a refinery is. And they are cyclical. There are times that they are very profitable and there are times that they're not so profitable but I'm not sure they ever - at least very rarely - get as unprofitable as a refinery is. Refineries are just not very profitable businesses. But, the petrochemical plant or the petrochemical venture if you establish market situations that are stable enough you have more profit margin to reduce if you exchange it for certainty that you actually will be able to supply the product.

For example, I can, if I'm just - if I build a plant without an established market - you know I'm the giant ethylene supplier and in the Gulf Coast in the Houston/Louisiana area we actually have a network of pipelines that supply ethylene. So I can build a plant essentially anywhere on this pipeline and put my ethylene in that pipeline and somebody else will take it off 200 or 300 miles away. So I have a very simple logistics problem. I just simply put just simply (unclear) some ethylene in the pipeline and go out and make my contract and the user is assured of how he will get his supply. He will get it from the same pipe that he's got it from for ten years.

Now here we have a totally different situation in that you don't have an established supply pattern. And that is a problem to

overcome but you do have enough profit margin in the typical petro-chemical project that you have a little bit more latitude in what you will accept as a rate of return if you have a certainty that you've got a customer/supply relationship that you can count on long term. And I think that all these people have implied that they do need a very long term commitment on offtaking product. With that long term commitment you then have quite a bit of flexibility on paid price of product because you will have an adequate return to play with, if you will.

LeResche: Sterling?

Gallagher: (unclear)

Moore: Well, you've got the Middle East, for example, well they're much higher. To my knowledge construction costs outside of Iran, for example, probably hasn't even stabilized enough to where you know for sure. I think all the major projects that are presently being constructed in Saudi Arabia are continuing to escalate primarily because there's not the infrastructure there to carry out an industrial development project. It's one of those things that if I had a port I could unload the ship; if I had a warehouse to put the stuff in, if I had a road to get it out of it, if I had a railroad, -- you just don't have anything there. So what has happened that caused construction costs to escalate so very rapidly in those areas is that every turn you take you're bottlenecked for some reason or another. And a lot of money is spent on activities that you don't normally think of associated with the construction. You have to build roads, you're delayed tremendously; you can't get cement unloaded. For example three years ago there was not a single bulk cement plant in Saudi Arabia. I don't know exactly how