ALASKA STATE LEGISLATURE
SENATE RESOURCES COMMITTEE
February 7, 2001
3:55 p.m.

MEMBERS PRESENT

Senator John Torgerson, Chair
Senator Rick Halford
Senator Pete Kelly
Senator Robin Taylor
Senator Kim Elton

MEMBERS ABSENT

Senator Drue Pearce, Vice Chair
Senator Georgianna Lincoln

OTHER MEMBERS PRESENT

Senator Alan Austerman
Senator Gary Wilken

COMMITTEE CALENDAR

Briefing by Gas Pipeline Consortium:

Mr. R.D. (Robbie) Schilhab, Manager
Alaska Gas Development
ExxonMobil Production Co.
P.O. Box 2180
Houston TX 77252

Mr. Joseph P. Marushack, Vice President
ANS Gas Commercialization
700 G Street
P.O. Box 100360
Anchorage AK 99510

Mr. Ken Konrad, Sr. Vice President
Business Unit Leader Alaska Gas
BP Exploration (Alaska) Inc.
P.O. Box 196612
Anchorage AK 99519

ACTION NARRATIVE

TAPE 01-8, SIDE A
Number 001

CHAIRMAN JOHN TORGERSON called the Senate Resources Committee meeting to order at 3:55 p.m. and asked Mr. Marushack, Phillips Alaska, to begin and the following is his presentation:

> Good morning. My name is Joe Marushack from Phillips Alaska. With me are Ken Konrad from BP Exploration and Robbie Schilhab from ExxonMobil. Together we comprise the Management Committee of the North American Natural Gas Pipeline Group. We appreciate the opportunity to appear before you today to discuss the project. Each of us will participate in the presentation.
>
> At the outset, let us say that we fully understand and share the strong interest Alaskans and others have in ANS gas commercialization. An economically viable project would encourage new investment exploring for and developing North Slope gas, provide construction and employment opportunities, maximize state royalty and tax revenues over the long term, and create the potential for increased access to gas in Alaska. From a producer prospective, an economic project will provide the value that our shareholders expect from us. We are highly motivated to progress an Alaskan gas project. Recognizing your interest, the Project Team plans to provide periodic updates to you on project status as various milestones are reached. The Team also plans to engage in ongoing dialogue with appropriate government agencies and other parties. The evaluation and route selection process cannot be done in isolation. We want to move a project along most efficiently and so it must be an inclusive process that provides opportunities for interested parties to participate. This is an Alaskan project, but it is also an international project of enormous scale. To be successful, it will require the full cooperation of Alaska, the U.S. federal government, the Canadian federal government, as well as affected provinces, territories, First Nations, and many other interested stakeholders.
>
> At the same time, those participating in the dialogue must be open and realistic. There are many groups with many viewpoints. To be successful, we must listen to and respect these viewpoints. And we must not lose sight of our objective: a commercially viable gas pipeline that can deliver natural gas from the North Slope to the

lower-48 states at costs competitive with other supplies in the U.S. and Canada. We do not have a full feasibility cost estimate at this time that addresses all the technical, permitting and logistics issues of the two pipeline routes. That's why we have to consider the costs and benefits of both major pipeline routes before selecting one. Indeed, it is our obligation, and for permit filing purposes a requirement, to evaluate alternative options with the governments, communities, regulators, and our shareholders. We recognize that Alaskans are concerned about the route selection process and with the huge investment required we have committed to establishing a factual basis for the evaluation.

Graphic 2

The next graphic outlines the various topics we plan to cover. I'll briefly address the resource background, and the market. Next Ken will provide you with an update of the ongoing work effort. Lastly Robbie will get into the details of the permit applications, deliverables and plans.

Graphic 3 (Project Overview)

On December 6, 2000, the three major Alaska North Slope gas producers--BP, ExxonMobil and Phillips--announced a joint work program to evaluate and progress an Alaskan Gas Pipeline Project. The project would ultimately involve a large diameter pipeline system to deliver gas from Alaska's North Slope to Canada and the lower-48 states.

The three producers will share the costs and leadership of the project equally. The initial work program is expected to cost at least $75 million. Staffing levels are anticipated to total about 90 full time equivalent personnel from the three companies, with significant contractor support. The work effort will be primarily managed and staffed in Anchorage, with other work locations in the U.S. and Canada.

The work team has initiated the first steps in progressing the project. Key program activities over the next year include:

- Conceptual design of the world's largest CO_2 treating plant; and

- Conceptual designs for a large diameter pipeline, high-efficiency compressor stations and a NGL recovery plant.

We'll discuss three of these facilities in more detail a little later in the presentation to give you a better understanding of the size and magnitude of our work effort and the facilities being evaluated.

Other program activities include:

- Project costing;

- Environmental field surveys;

- Permitting requirements and plans;

- Design of a commercial structure; and

- Overall viability of the project.

A focus of the work effort will be on route evaluation and selection, leading to filings with U.S. and Canadian regulatory authorities--the Federal Energy Regulatory Commission (FERC) in the U.S., and National Energy Board (NEB) in Canada. The target objective is to file FERC, NEB and other appropriate applications in late 2001.

This is a very aggressive target. Once the work planning process is finalized we will understand the timing better. Of course, the filings are contingent on developing a commercially viable project that can competitively deliver gas to the lower-48 states. The latter is especially important since there are potential competing sources of gas that could also supply these markets. A competitive project also means that no cost overruns can be tolerated, especially in a gas project of this magnitude and we will utilize our company and contractor resources to realistically understand all of the costs and risks.

Graphic 4 (Alaska Gas Resources & Major Producers)

Turning to slide 4, this is the first of three graphics covering North Slope Gas Resources and Gas Market Outlook. It shows the major North Slope gas resources and their locations. Developed fields are depicted in green

and include, from west to east, Alpine, Kuparuk, Milne Point, Prudhoe Bay, Endicott, and Badami. Major discoveries not yet developed are in yellow and include Northstar, Liberty and Point Thomson. The known North Slope natural gas resource totals about 35 Tcf. The total potential gas resource on the North Slope has been estimated over the years at around 100 Tcf. Industry's ability to realize the full potential resource will in large part be dependent on an efficient transportation system which yields attractive netbacks, and hence the incentive to explore and develop. It is worth noting that there is potentially enough gas on the North Slope for projects other than a gas pipeline to Canada and the Lower 48 states if market conditions are supportive. For reference, the pie shaped chart to the right shows the relative ANS gas ownership interests for the 35 Tcf of known resource. Through the state's royalty share it is obvious the state has an important position in the resource.

Graphic *5*: Current Gas Utilization

Gas historically has played a significant role in improving Prudhoe Bay's oil recovery. In the 1970's, an estimated 9.6 billion barrels were originally forecasted to be recoverable from Prudhoe Bay. As of today, we've recovered over 10 billion barrels and are still counting, with over 3 billion barrels remaining to be produced. This improved recovery is achieved with the help of the world's largest gas processing system.

The overall process is summarized in the slide 5 schematic. This image shows Reservoir Gas being routed through our Central Gas Facility where natural gas liquids are extracted, then blended with crude, which is then transported down TAPS. Current NGL production rates run at about 50 mbd to TAPS, with the sale of another *25* mbd to the neighboring Kuparuk oil field for use in their miscible gas enhanced oil recovery project. Miscible injectant is also manufactured at the CGF, for use in enhancing oil recovery from the waterflood areas within Prudhoe Bay.

The remaining dry gas is compressed and re-injected into the Prudhoe gas cap. This re-injection process enhances oil recovery, by maintaining reservoir pressure, and also helps vaporize residual oil that is then cycled back and re-produced.

The gas resource at Prudhoe will continue to be used to improve oil recovery and until we are able to export gas from the Slope by whatever means.

Graphic 6 (Market Environment Demand Growth: 2000-2020)

Turning to slide 6, we often get asked why we believe the time is now more appropriate for a gas pipeline project from the North Slope to the Lower 48. The Lower 48 gas market is the largest in the world, with the best transportation infrastructure and the ability to move gas from a single hub to many market sectors. It's a market where gas can be sold long term or short term, priced at spot or fixed, float with the general market or locked in with caps and collars. It is also a growing market due to the historic abundance of the energy and the environmentally friendly aspects of the source. The U.S. Energy Information Agency projects a continuing increase in demand for natural gas through the year 2020. Natural gas demand for the commercial, residential, and industrial sectors increases at steady but modest rates.

Demand for the power generation sector, on the other hand, is projected to increase from about 1l bcfd to over 3O bcfd between 2000 and 2020. Power generation is driving expected growth in natural gas demand, accounting for 64 percent of total expected demand growth during this 20-year period. Overall the use of natural gas in the Lower 48 is forecast to grow from about 56 bcfd to 86 bcfd by 2020.

Our current view is that 3-5 bcfd of North Slope gas could be supplied from Alaska into the Lower 48. We should also point out that there are many supply sources that will be competing to meet this projected demand growth. Those that are most economically viable will succeed. Our gas will be competing against Mackenzie Delta, Eastern Canadian gas, deepwater gulf gas, coal bed methane, tight sands and LNG sources. But we know that existing conventional gas resources cannot keep pace with demand and we want Alaska's gas to be one of those new sources. I'll now turn the microphone over to Ken for a look at the Project Team's early efforts.

Graphic 7 (Organizational Structure)

Let’s turn now to the organizational structure of the Project Team. A three-member Management Committee composed of Robbie Schilhab of ExxonMobil, Joe Marushack of Phillips and Ken Konrad of BP will lead the day-to-day operation of the Project Team. Below the Management Committee are seven groups consisting of engineering, commercial, environmental and regulatory, legal, and external affairs specialists. This chart shows several of the key leadership positions on the team.

Team members shown in red are from Phillips, those in green from BP, and those in blue from ExxonMobil. Company staff is being drawn about equally from the three producers. This will allow us to access top quality people from each organization and ensure full alignment as we proceed through our work program. We are currently engaged in a major effort to fill remaining organizational slots. About 50 team members are in place or have been identified.

Graphic 8 (Objectives)

Our team has set itself a few key objectives.

First, we want to create a project that can succeed – an economically viable project that is sufficiently robust to attract the billions and billions of investment dollars that will be required to get gas to market.

North American gas prices have spiked during the past year to $5 -$10/mcf from historic levels of around $2/mcf. The duration of this current price spike is impossible to predict. What we do know is that the laws of supply and demand have not been repealed – just as they were not repealed during the oil price spike in the early 1980’s or the U.S. gas “shortage” of the 1970’s. An Alaskan project needs to look past short-term volatility to the fundamental long term – 10, 20, 30 and 40 year - supply trends, and the cost of those competing supplies.

A variety of studies reveal that there is still an enormous gas resource in the US. Some of this gas can be economically developed at $2/mcf, the average price for gas over the past decade. Much of this gas requires higher prices or technological advances to be economic. We need to establish Alaskan gas as a competitive source of supply against these alternative sources of supply.

Clearly, we believe Alaskan gas can be made competitive, otherwise we wouldn't be investing our dollars and our people in this effort. But we do need to be realistic – Alaska is still a long distance from the market and our cost challenges are very real.

Of course the real prize for Alaska is not to simply make the known resource base of 35 Tcf competitive. The larger prize is creating a highly efficient and expandable transportation system that yields a high field netback providing an incentive for investors to explore for and develop new gas fields. Incentive to move past 35 Tcf towards 100 Tcf and beyond. Incentive to create a second industry on the North Slope – an exploration and development industry centered on gas – and the associated long term jobs and revenues.

Our second objective is to establish sufficient engineering, commercial and environmental definitions to support permit applications by year-end 2001. This is not a simple undertaking and as mentioned earlier, it is an aggressive time target, but it remains our goal. We will cover some of the specific application requirements later.

Our third objective, assuming we are successful with the first two, is to prepare for the next phase of activity. Project applications are not an end but a beginning. A further ramp up in activity including advancing engineering design, working through the permitting process and preparing detailed project execution plans.

Graphic 9 (Scope of Project)

This graphic shows the overall scope of our study, which I'll speak to in four parts. First, nearly all the known gas on the North Slope has carbon dioxide content above required sales gas specifications and thus needs to be treated before gas can be sold to end consumers. Gas treatment facilities on the North Slope would condition the gas for sale by removing C02 from the gas stream, compressing the gas and cooling the gas before entering the pipeline. It is worth noting that these gas treatment facilities would be the largest such facilities ever built, anywhere.

Next, a pipeline from the North Slope into northern Alberta. Two major routes will be engineered and

evaluated – 1) a northern route which runs offshore north Alaska to the Mackenzie delta and then up the Mackenzie valley to Northern Alberta; and 2) a southern route which broadly parallels TAPS to Fairbanks and then follows the Alaska Highway into northern Alberta.

The specific detailed routing along these two routes as well as the termination point in northern Alberta will be part of the work program.

The next area of study will look at pipelines from Northern Alberta to end markets in the U.S. because simply getting gas to Alberta is not enough. Pipeline infrastructure in Alberta has grown over the years and currently there is some excess pipeline capacity. However, many expect that capacity to be fully utilized as more supply comes on stream over the next few years. In any event, volumes from an Alaskan project will be sufficiently large that some significant expansion of capacity will be required.

The joint team will engineer and evaluate a new build pipeline(s) from northern Alberta into U.S. markets. At the same time we will meet with existing pipeline operators to determine if there are cost effective expansion opportunities on existing systems.

In aggregate, these two pipeline segments – Alaska to Alberta and Alberta to Market – represent a pipeline system 4-5 times the length of the Trans Alaska Pipeline System. This is an enormous undertaking.

Finally, gas delivered to market will need to meet specifications relating to the heating value of the gas. North Slope gas contains various amounts of ethane, propane and other gas components commonly called NGL's or natural gas liquids. Some of these components may need to be removed from North Slope gas to meet end sale specifications. Additionally, there may be an opportunity to export additional gas liquids to enhance overall economics.

We will be looking at various options for placing NGL facilities along the export system. The location and nature of these facilities will be determined in the study

Graphic 10 (Conceptual Pipeline System Components)

I just provided an overview of some of the major facilities that would be associated with a gas pipeline system from the North Slope to Canada and the lower-48 states. Now I will discuss a few more of the specifics associated with the pipeline itself.

The pipeline being considered will utilize 21st century technology and will be designed to the highest standards. Many things have changed since the major pipeline studies of the 1970's and by leveraging today's technology we can design a system that is more cost effective and a system that meets the highest environmental standards.

We will design a new system from the bottom up to match today's needs with modern technology. Pipeline diameter, throughput rates, operating pressure, compressor station design and location, construction methods and pipeline termination point will all be re-addressed. The end result will be a more cost effective system with a smaller "footprint", less fuel consumed along the system and lower emissions.

Our work program will determine a specific design but at this point there are some general attributes we can share today. The pipeline will be buried along its length with temperature carefully controlled to not disrupt the permafrost. In this sense, once installed, it will be almost invisible.

The pipeline would be plus or minus 48 inches in diameter and operate at a pressure of perhaps 25OO psi or more. It would utilize advanced high strength steel. However, even with high strength steel, the steel requirements for this system will be enormous. Consider a pipeline system *4 - 5* times the length of TAPS with a wall thickness of around one inch. Literally hundreds of millions of tons of steel.

This efficient pipeline design would require fewer compressor stations and with today's automation and communication systems, these stations can be built as not normally manned facilities. While highly efficient, the total installed horsepower necessary to move gas from Alaska to end markets will still be many times the total installed horsepower on TAPS.

Between compressor stations there would be block valve stations as necessary to ensure safe and efficient operability and maintenance. Intermediate pigging facilities would enable monitoring of the pipeline system with "smart pigs", again ensuring long term safe operations.

Graphic 11 (Current status)

This is clearly a big undertaking and we are currently moving aggressively to get the team fully staffed. We currently have about 50 staff identified to date with 90 or so positions expected to be filled by April.

Of course we will also need the support of contractors. A number of requests for proposals have been issued for various work packages. These include front-end engineering design and costing for various scopes of work, land and environmental surveys as well as legal support both in the U.S. and Canada. We will speak to these in more detail later.

A key current activity is developing greater detail on all the work scopes and objectives for each component of the study. This will allow us to identify the critical path issues we will need to address to meet our aggressive time targets.

We are in the process of finalizing our near term work schedule and are already initiating specific plans for early field surveys, some of which are seasonal in nature and thus very time sensitive. Now I'll turn the microphone over to Robbie Schilhab who will describe some of the FERC certificate requirements.

Graphics 12 and 13 (FERC Certificate Requirements)

Conducting our joint work program is not an option for us. It is an absolute requirement. The next two charts show the information required on an application for a FERC Certificate of Public Convenience and Necessity. It's voluminous and detailed. There is a comparable set of requirements for applications filed with Canada's National Energy Board.

The information required includes:

- A description of the legal entity applying for the certificate.

- Descriptions and locations of the pipeline, associated plants, compressor stations, and other facilities; flow diagrams; and information on construction and operations management practices.

- Data on natural gas supply and demand, and

- Estimates of facility costs, method of financing the project, anticipated revenues and expenses, and a model and methodology for calculating tariffs.

FERC also imposes a number of other requirements. The application must include a mile-by-mile description of water resources; fish, wildlife and vegetation; geology; soils; and air quality and noise along the pipeline route. Given the length of the pipeline segments to be evaluated, this requirement potentially means 5,800 separate descriptions.

- Other required reports include the socio-economic impacts of the project; cultural resources that may be impacted; land use, recreation and esthetics in affected areas; alternatives considered; and project reliability and safety.

It will require a massive undertaking to gather, evaluate and report the information required by FERC.

Graphics 14 and 15 (Work Program Deliverables)

This chart and the next show the work program deliverables expected from the various work groups. The results will be used in determining the economic viability of a pipeline project and then if warranted in the evaluation of the gas pipeline routes and in FERC and NEB filings.

As shown in this chart, the Technical groups are responsible for the design basis and scope for pipeline systems to bring ANS gas to market. This includes plant and pipeline components for an integrated project, cost estimates, and both a plan and schedule for project implementation. The Technical group will also be

responsible for providing some of the information required for applications for regulatory permits.

The Environmental and Regulatory group is responsible for environmental field studies for northern and southern routes, development of plans for filing permit applications, and the completion of applications to be filed with FERC and NEB.

As indicated on the next chart, deliverables from the commercial group includes a plan to move natural gas from Alberta to the lower-48 states, a model and methodology for determining pipeline tariffs, a plan to finance the project, the structure and ownership of the project, and studies to determine the social and economic impacts of the project. The group will also provide the commercial elements needed to complete FERC and NEB applications.

Finally, the External Affairs group will lead the community consultation program, help coordinate U.S. and Canadian external affairs activities, facilitate discussions with government agencies and officials and other interested parties, and provide communications support. This group will have a major role in arranging periodic status updates for you.

Graphic 16 (Initial Contract Packages)

Our work scope covers great breadth and depth, from the North Slope to Canada and the Lower-48 markets. A major area of current activity is the identification and selection of qualified contractors. Requests for Proposal (RFPs) were issued on January 17 covering 9 distinct contract areas. These include front-end engineering design; environmental and land surveys in Alaska, the lower-48 and Canada; and regulatory and permitting requirements. In addition, legal firms in the U.S. and Canada are being selected through a separate process.

On January *25,* a pre-bid conference was held to brief potential contractors on the initial work we are planning and the criteria that will be used in awarding contracts. Team members have also begun interviewing contractors who will be submitting bids to assess their qualifications.

The timing of contract awards will vary based on the size and complexity of the individual packages and the ability to conclude contract negotiations. We are currently

receiving and reviewing bid submissions, and anticipate that successful bidders will begin work before the end of the first quarter of this year.

Finally, each group is currently planning its work program. This includes identifying what it needs to achieve, when the work needs to be done and what information will be needed from other groups. The various groups are also identifying critical issues that will affect their work and that of the entire Project, and options for addressing them. All of this information will then be integrated into detailed work schedules that will help guide the Team's efforts during the months ahead. All of the groups are in the process of developing more detailed near-term work schedules.

Graphic 17 (Near Term Plan)

The final chart shows what we will be doing over the next couple of months.

As indicated earlier, we will continue to bring additional personnel on to the Project Team. By April, the personnel complement is expected to reach about 90 people on the team with additional support provided by the firms awarded the various contracts.

There will be additional effort to determine in greater detail the work scope and end products for each group and for the overall Project Team.

We do not currently have definitive milestones for completion of the many Project components. The Project Team will be working to better define a timeline over the next few weeks.

Lastly, we expect to execute most, if not all initial contracts over the next two months. The exact timing of contract awards will vary based on the size and complexity of the individual packages and the ability to conclude contract negotiations. It is important that both parties have a thorough understanding of the terms, expectations and schedule for each contract before the document is signed.

Conclusion (No graphic)

Before concluding, I would like to summarize some of the key points we made today.

First, the three major North Slope producers have agreed to a joint work program to evaluate and progress a North American Natural Gas Pipeline Project that could ultimately culminate in the construction of a large-diameter pipeline system to deliver gas from Alaska's North Slope to Canada and the lower-48 states. And we are fully engaged in this effort now.

Second, an Alaskan Natural Gas project that can deliver cost-competitive natural gas to customers can play an important role in meeting the nation's energy needs, while providing substantial economic benefits to Alaskans, leaseholders and others.

Third, no option should be precluded at this point. It is important that all parties fully understand the costs and benefits associated with the various options. Much of the information to be generated and analyzed is also needed to complete applications for FERC and the NEB. We urge the Legislature to allow this critical work to be completed and not prematurely attempt to preclude any development option. It's in the States' and all parties' best interest to fully understand the options on how to best proceed.

Finally, given the strong interest in this project, the Project Team plans to provide periodic updates to you as various milestones are reached and to engage in an ongoing and meaningful dialogue with government agencies and other interested parties.

We'll be glad to answer your questions.

MR. KEN KONRAD, Sr. Vice President, BP Gas Group explained that graphic 7 show the team's organizational structure. He, Mr. Marushack, and Mr. Schilhab, will be responsible for the day-to-day management of the joint team. The Company staff across the project is being drawn from each company in approximately equal measure. This will allow the best people from each organization to create a team that is the best and will help the three companies stay aligned throughout the joint study effort.

Number 1100

MR. KONRAD said that they want to create an economically viable project that can succeed and get the gas to market. North American

gas prices have spiked during the past year to $5 - $10 mcf, relative to historic levels of $2 mcf. The duration of a price spike is impossible to predict. "An Alaska project needs to look past short-term volatility to the fundamental long-term 10 - 40 year supply trends and the cost of those competing supplies," he said.

A variety of studies reveal that there is still an enormous gas resource in the United States some of which can be developed at $2 mcf, the average price for gas over the past decade. Much of this gas requires higher prices or technological advances to be economic. We need to establish Alaskan gas as a competitive source of supply against alternative sources. Being realistic, Alaska is a long distance from the market and cost challenges are very real. The larger prize is to create a highly efficient and expandable transportation system that yields a high field net-back price, providing an incentive for investors to explore for and develop new gas fields.

MR. KONRAD said their second objective is to establish sufficient engineering (commercial and environmental definition) to support permit applications by the end of the year - not a simple undertaking and an aggressive time target.

A third objective is to prepare for the next phase of activity, such as engineering design, working through the permitting process itself, and preparing for project execution.

Regarding Graphic 9, the Overall Project Scope, Mr. Konrad said, nearly all the known gas on the North Slope has carbon dioxide content above required sale-gas specifications and needs to be treated before it can be sold to consumers. Gas treatment facilities on the North Slope would condition the gas for sale by removing CO2 from the gas stream, compressing the gas, and cooling it before putting it in the pipeline. These facilities would be the largest ever built anywhere.

Next to the pipeline from the North Slope to Northern Alberta, two major routes would be engineered and evaluated. A northern route would run off-shore of North Alaska to the Mackenzie Delta and up the Mackenzie Valley to Northern Alberta to a destination in Northern Alberta. A southern route broadly parallels TAPS to Fairbanks and then follows the Alaska Highway into Northern Alberta. Specific detailed routing along these two routes as well as the termination point in Northern Alberta will be part of the work program, he said.

> The next area of study will look at pipelines from northern Alberta to end markets in the United States. Pipeline infrastructure in Alberta has grown over the years and currently there is some excess pipeline

> capacity. However, many expect that capacity to be fully utilized as more supply comes onto the market over the next several years. The joint team will engineer and evaluate new build pipeline or pipelines from northern Alberta into United States' markets. At the same time, we'll meet with existing pipeline operators to determine if there are cost effective expansion opportunities on existing systems. In aggregate, these two pipeline segments represent a pipeline system four to five times the length of TAPS.

Gas delivered to market will have to meet heating value specifications. North Slope gas contains various amounts of ethane, propane, and other gas components commonly called NGL (natural gas liquids). Some of the components may be removed to meet end-sale specifications. There may also be an opportunity to export additional gas liquids to enhance overall project economics. They will look at various options for placing NGL facilities along the export system, Mr. Konrad said.

Graphic 10 is a picture of the overall pipeline components. "Pipeline diameter, throughput rates, operating pressure, compressor station design and location, construction methods, and pipeline termination point will all be readdressed."

Some specific design attributes, MR. KONRAD said, were that the pipeline would be buried along its entire length with temperature carefully controlled not to disrupt the permafrost. The pipeline would be approximately 48 inches in diameter and operated at a pressure of about 2500 psi or more. It will be built of advanced high-strength steel and a wall thickness of approximately one inch. The specific pipeline design would require fewer compressor stations and these do not need to be manned, he said. "While highly efficient, the total installed horsepower necessary to move gas from Alaska to markets will be many times the total installed horsepower on TAPS. Between compressor stations, there will be block valve stations as necessary to insure safe and efficient operability and maintenance. There will also be intermediate pigging facilities that will enable monitoring the pipeline with smart pigs."

They will need to support contractors and have already issued a number of RFPs for various work packages. These include front-end engineering and design and costing for the various scopes of work, land and environmental surveys, as well as legal support, both in the United States and Canada.

MR. KONRAD said they have developed in much greater detail all the work scopes and objectives for each component of the study. This

will allow them to identify critical path issues that need to be addressed to meet their aggressive time targets.

Number 1450

MR. ROBBIE SCHILHAB, ExxonMobile, said the FERC application is voluminous and detailed. Canada has a comparable set of requirements for its National Energy Board (NEB). The requirements include:

A description of the legal entity applying for the certificate of the owner company

Descriptions and locations of the pipeline associated plants, compressor stations, and other facilities

Flow diagrams

Information on the construction and operation management practices

Data on natural gas supply and demand

Estimates of facility costs

Methods of financing the project

Anticipated revenues and expenses

Model and methodology for calculating the tariffs

MR. SCHILHAB explained that included in the FERC application is an analysis of alternative projects that have been considered. There are also environmental requirements. The application must include a mile-by-mile description of water resources, fish, wildlife, vegetation, geology, soils, air quality and noise along the pipeline route. This requirement could mean 5,800 separate descriptions. Other required reports include the socio-economic impacts of the project, cultural resources that may be impacted, land use, recreation, and aesthetics in effected areas, alternatives he mentioned earlier, and project reliability and safety.

The next two charts, pp. 14 & 15 summarize the work program expected from the various core groups. The results will be used in determining the economic viability of a project and, if warranted, an evaluation of gas pipeline routes.

The technical teams are responsible for:

- Design basis and scope for pipeline systems to market
  - Plant and pipeline components
  - Integrated project
- Cost estimates
- Project execution plan/work schedules
- Inputs to regulatory permits and process

The environmental/regulatory team is responsible for:

- Environmental field studies for northern and southern routes
- Permitting plans
- Completed FERC/NEB application
- Completed ROW application
- Other permit applications as appropriate

The commercial team is responsible for:

- Plan to move gas from Alberta to U.S.
- Tariff model and methodology
- Financing plan
- Project structure/ownership
- Socio-economic studies
- Commercial elements of FERC/NEB applications

The External Affairs Team is responsible for:

- Leading the community consultation program
- Helping to coordinate U.S./Canada external affairs
- Facilitating engagement with governments and other interested parties
- Supporting communications

The work scope covers great breadth and depth. A major area of current activities is the identification and selection of qualified contractors to assist in their efforts. RFPs were issued on January 17 covering 10 distinct contract areas. These include:

- engineering and design work for the gas treating plant
- two pipeline segments
- NGL plant
- environmental and land surveys in Alaska, lower 48, and Canada
- regulatory and permitting requirements

MR. SCHILHAB added that local Alaskan firms were well represented in the bid process. Legal firms in Canada are being selected through a separate process.

On January 25, a prebid conference was held to brief potential

contractors on the initial work they were planning and the criteria to be used in awarding contracts. Team members have begun interviewing contractors who have submitted bids to assess their qualifications. The timing of contract awards will vary based on the size and complexity of the individual packages and the ability to conclude contract negotiations.

Finally, MR. SCHILHAB said that each group is currently planning its work program to include identifying its deliverable products, when the work needs to be done, and what information will be needed to support the other groups.

> Various teams are identifying critical issues that will affect their work and that of the entire project and options for addressing these issues. All this information will be integrated into a detailed work schedule that will help guide the teams' efforts to conclude the contactors' support during the months ahead.

The final chart was their schedule for the next couple of months. They will get their personnel up to about 90 people with additional support provided from the firms awarded the various contracts. There will be greater efforts to determine in greater detail the work scope and end products for each group and for the overall project team.

MR. SCHILHAB said they hope to execute most, if not all, of the initial contracts over the next two months and concluded his remarks as follows:

> The three major producers have agreed to a joint work program to evaluate and progress the North American gas pipeline project that could ultimately culminate in the construction of a large diameter pipeline system to deliver gas from Alaska's North Slope to the lower 48 and they are fully engaged in this effort now.
>
> Second, an Alaskan natural gas project that can deliver cost-competitive natural gas to consumers can play an important role in meeting the nation's energy needs while providing substantial economic benefits to Alaskans, lease holders, and others.
>
> Third, no option should be precluded at this point. It is important that all parties fully understand the cost and benefits associated with the various options. Much of the information to be generated and analyzed is also needed to complete applications for FERC and NEB permits. We urge the legislature to allow this critical work to

be completed and not preclude any development options. It is in the states and all parties' best interests to fully understand the options on how to best proceed.

Finally, given the strong interest in this project, the project team plans to provide periodic updates to you as various milestones are met and to engage in an ongoing and meaningful dialogue with government agencies and other interested parties.

CHAIRMAN TORGERSON asked Mr. Schilhab to give them a history of why the 1977 act was amended in 1992 to allow producers to own part of the pipeline.

MR. SCHILHAB replied that the 1977 act precluded the producers from being an owner of the pipeline. It was recognized shortly thereafter, that a project of that size needed other owners. The producers were a natural owner for the pipelines.

CHAIRMAN TORGERSON asked if they currently own large gas pipeline projects.

MR. KONRAD said that BP operates the largest gas pipeline in the North Sea and is building a 48 inch line across the Algerian desert now. BP is looking at a number of very large projects across China.

CHAIRMAN TORGERSON asked if they had any idea of amendments that would be needed to go forward.

MR. SCHILHAB replied that the original 1977 requirements had specific locations for compressors, certain diameters, certain routing, and many other specifications. With current technology, lots of changes have to be made to those. They know they have different pressure, different pipe, and different composition of the gas. They do not know whether amendments or a whole new system is needed.

CHAIRMAN TORGERSON asked if the Treaty timeline of 35 years is a problem.

MR. KONRAD responded that they need to define a project first and then they can define the best process. They are talking among themselves about these issues:

- Is it more efficient to go forward in a more conventional sense?
- Is it easier to change the existing legislation?
- Is there a third way to do it?

CHAIRMAN TORGERSON asked if Foothills is part of their planning

process and where they fit in the process.

MR. KONRAD replied that first they need to design a system that is going to be economically viable. Ownership and permitting are part of it and they have been and will continue to be in discussions with them. Now is the time to create options and they are talking to a number of companies.

SENATOR HALFORD asked if they would be at the point of permit application by the end of the year.

MR. KONRAD answered that is their target. That would include all the information in place for the NEB and FERC permits and other permits they would need to go forward.

SENATOR HALFORD asked if their timeline included deciding the ownership at the time of application.

MR. KONRAD replied that they would decide the routing, but he didn't think they would have to know the ownership at that time. Companies can always sell interest in assets that they own.

SENATOR HALFORD asked if going to FERC on a public convenience/necessity standard would require some kind of compromise with Foothills in terms of ownership or a competing proposal.

MR. KONRAD said that Foothills could be a partner; a number of companies have approached them. They first need to determine the project. The termination point is most likely going to change as well as the evacuation plans out of Alberta. The pipeline design itself is going to change. Their goal is to have the best process.

SENATOR HALFORD asked if using that process again would be the most streamlined method.

MR. KONRAD replied if it was most cost effective to change it, that's what they would do. They have to know everything about the project before they can commit to using the permits. They need to know how the modifications would take place within the process.

Number 2200

SENATOR ELTON asked if he was wrong in assuming some options had been precluded. It sounded like they were focusing on a southern highway route or a variant thereof or the over-the-top route or a variant thereof.

MR. SCHILHAB responded that there are numerous routes that they continue to look at until they get a base design in place.

MR. KONRAD said he was talking to the committee as the group doing the pipeline work. Various companies, like Phillips and BP, are in the gas sponsor group. BP is constructing a gas to liquids demonstration facility on the Kenai Peninsula. Right now the gas pipeline is the leading contender. Work is being done on other options.

SENATOR ELTON asked if he was defining the base effort as an overland route that goes through Canada and anything else would be an optimization of that and be considered in the future.

MR. KONRAD said, "We are focused on an overland pipeline to the lower 48."

SENATOR TAYLOR asked where Alaska was represented on the chart on page seven.

MR. KONRAD explained those three companies on the chart represent the companies that are funding the studies right now.

SENATOR TAYLOR asked if the state had been invited.

MR. KONRAD replied that they had a lot of discussions with various state agencies over time.

MR. MARUSHACK responded that each of the companies were looking at separate pipeline projects.

TAPE 01-8, SIDE B

Number 2400

MR. MARUSHACK said it just made sense for them to come together. The 12.5 percent interest owned by the state is a very important part of this and that interest could be sold.

SENATOR TAYLOR asked if there were any internal conflicts that had precluded considerations of a tideland gas line.

MR. KONRAD answered that they are actively looking at LNG, but that doesn't appear to be competitive. So they are focusing on the gas pipeline project. "Projects that are economic get funded and projects that aren't economic don't get funded."

MR. MARUSHACK also responded that Phillips is a 7 percent owner in the LNG facility in Kenai. They own a proprietary technology that is very valuable and being used in other parts of the world. They have made sales to Japan for over 30 years and have not missed a delivery. It's been a very lucrative business; they like the LNG business. They know those markets. "Phillips would be very, very motivated to have an LNG facility out of Alaska using this gas."

The problem they have is that it's not a stand-alone economic project.

CHAIRMAN TORGERSON asked how they planned on interacting with the smaller groups who might want to sell gas.

MR. KONRAD answered that any project that goes forward for application will go through a period called "open season." At that time, people who want to ship on that pipeline will be given opportunity to do so. The same thing happens in pipelines all over the U.S.

CHAIRMAN TORGERSON asked if they [open seasons] happened after the line is built.

MR. KONRAD said it happens before the application.

CHAIRMAN TORGERSON asked how they anticipate interacting with the public on their planning process and would they have news releases.

MR. SCHILHAB responded that an entire team is dedicated to external affairs both here and in Canada.

CHAIRMAN TORGERSON asked how the committee could interact with their planning process.

MR. SCHILHAB replied that once they reach milestones and it's appropriate, they would like to come back and keep the legislature updated on the project. There would be time to have discussions and contacts through meetings in-between those periods.

CHAIRMAN TORGERSON asked if he could assume 90 percent local hire or at least what they have now on the project.

MR. MARUSHACK replied that they wouldn't have 90 percent local hire. There is a job for Alaskans on this project; it is so huge that they are going to have to bring in lots of people.

CHAIRMAN TORGERSON asked if there was a human resources person on their planning team so that the state could learn in advance about jobs and train people.

MR. KONRAD replied that part of the engineering studies will determine what manpower is needed and that will be shared with Alaskans and Canadians.

CHAIRMAN TORGERSON asked what was more important to their suppliers, long term supply or price.

MR. KONRAD replied that price is probably the leading factor.

CHAIRMAN TORGERSON said they would be marketing to larger consumers like industry and power plants.

MR. KONRAD replied that it really depends on what application one is talking about. Some facilities need to have constant supply and will pay a premium for it. Other consumers who have other power options are more interested in price. Each company will doits own marketing.

CHAIRMAN TORGERSON asked if the supply or price was more important when marketing in Japan.

MR. KONRAD answered that each negotiation there [in Japan] is a little bit unique. He said when there is lots of competition, price is the driving factor.

SENATOR AUSTERMAN said they are driven by profits and that they are obviously not going to be taking Alaskan gas to the Asian markets because it would cost them more than to take other gas. He thought the only reason we are talking today was because the lower 48 markets need the gas.

MR. KONRAD said that the North American market is growing and they expect it to keep growing, but he said the current price is not sustainable. One of their main considerations was that technology has lowered the cost of building a pipeline [supply]. So they think they can compete with coal bed gas and gas coming in from eastern Canada.

MR. SCHILHAB commented that the producers have been very interested in marketing Alaska gas since the start of Prudhoe Bay. They are just looking for a competitive project that is economic.

SENATOR AUSTERMAN commented that they were basically saying that, "…going to the Asian market is not economic right now, so we’re not going to tidewater. We're going to the lower 48." He said he was concerned about what jobs were going to be created long-term for Alaskans. He asked what their views were on extracting NGLs in Alaska.

MR. MARUSHACK answered that they are normally extracted and some are used as fuel and some are used as petrochemical. He described a petrochemical facility on the lower Gulf Coast of the U.S., from Corpus Christi to Mobile Bay. There are large refineries and chemical facilities, a very detailed infrastructure, great transportation, and feed stock [ethane, propane, naptha, and butane] coming in from lots of locations. All these things are clustered together. Their individual processing throws off other smaller chemicals that can't be used economically, but someone else very close to them could use it in their process. This happened all the way through the Gulf Coast because at one time there was

low cost feedstock. There was also good transportation.

MR. MARUSHACK thought gas could be used in Alaska for heating and industry. Petrochemicals are a little more difficult, because Alaska doesn't have the economy of scale on a new facility or the infrastructure and there are also transportation difficulties. Huge plants are being built in Southeast Asia where they take advantage of the infrastructure and the transportation system.

SENATOR AUSTERMAN asked if he thought that petrochemical extraction would take place outside the State of Alaska.

MR. MARUSHACK said that was how he sees it right now.

MR. SCHILHAB said they are considering the feasibility of extracting liquids out of the gas.

MR. MARUSHACK said that extraction is different than using a product for something else. One can extract in a lot of different locations if you can transfer that product for higher value some place else. You normally put your extraction somewhere close to a location where you distribute it or where you have a petrochemical facility.

MR. KONRAD said in terms of long-term jobs, Alaska's competitive advantage is its geology. If they can create a system of incentives for investors to explore and develop gas, that is the long-term legacy of this project.

SENATOR AUSTERMAN said, "That's if you look at us as a colony."

MR. KONRAD responded that across the entire industry, most of the investment goes into the upstream portion of the industry.

CHAIRMAN TORGERSON asked if LNG production would be too expensive or did they just not look at it.

MR. SCHILHAB said they looked at LNG to lots of different markets. "LNG is a good thing except we've got this 800 mile pipeline we have to overcome. That is our problem. It's not where you take it…."

MR. KONRAD added if you can pipe gas to California for $1.75 or $2.00, you're not going to pay $2.50 or $3.00 to get it there by LNG."

CHAIRMAN TORGERSON said he thought that was why El Paso lost out years ago. It was less costly to do a pipeline.

MR. KONRAD said that they are still looking at all the markets.

CHAIRMAN TORGERSON asked if they chose a different route than the one that's approved by Congress, what kind of hoops would they have to jump through.

Number 1500

MR. KONRAD answered that they would try to get the support of the State of Alaska and the Canadians. There is an existing regulatory framework that allows a company to look at international pipelines on virtually any route; it's called the Natural Gas Act.

CHAIRMAN TORGERSON said he thought there was only one approved route and that it would be up to the president to change it.

MR. KONRAD responded that they would have to confer with FERC and NEB.

CHAIRMAN TORGERSON said he read their opinion, but it was only the chairman's opinion. He knows they already turned down the over-the-top route. "The only difference is you want to go under water and they were on the shore of ANWR." He asked if there were any major impacts in not reinjecting the gas into the production oil. He asked if there would be a decrease in oil production.

MR. KONRAD answered, "As you sell gas there may be reservoir impacts." He explained that part of the work they are doing now is to understand that. They feel with additional investments that the oil losses can be held to a low number. There is a slight tension there, but it is less than it was 10 years ago. The fields have matured and technology has moved on. They could inject a lot more water into the reservoir.

CHAIRMAN TORGERSON asked what "tension" means.

MR. KONRAD answered, "You get to sell a whole bunch of gas and you lose a little bit of oil."

Number 1400

CHAIRMAN TORGERSON asked if the state would have that data before the plans go forward.

MR. KONRAD answered that the AOGCC has already kicked off a study on that issue, but he didn't know what their timeline was. He was sure the information would be shared.

SENATOR HALFORD asked if the companies own the same proportion of oil to gas.

MR. KONRAD answered, "Yes. They're not identical, but they're proportional."

SENATOR HALFORD asked if that means you own 20 percent of the gas if you own 20 percent of the oil.

MR. KONRAD said, "Yes."

SENATOR HALFORD asked if the arguments of the efficiency of gas versus the efficiency of oil would still apply in the cases before the AOGCC.

MR. KONRAD said it's important because they are producing both and want the most economic outcome possible. He thought the producers in the state were far more aligned than most people seem to think.

CHAIRMAN TORGERSON said the state wants to know if there's a trade-off.

MR. MARUSHACK said they are trying to assess the composition of the gas. They are also asking if there is now an opportunity to throw off more CO2 and do more CO2 floods - ways of mitigating potential loss you might have through taking the gas.

CHAIRMAN TORGERSON asked what the percentage of CO2 in our gas is.

MR. KONRAD answered about 12 percent at Prudhoe, about five percent at Pt. Thompson and about 18 percent at Endicott.

CHAIRMAN TORGERSON asked if they could ship up to two percent.

MR. KONRAD indicated that was correct.

CHAIRMAN TORGERSON asked what their goal would be in shipping.

MR. KONRAD answered between one and two percent.

CHAIRMAN TORGERSON asked if that number would be out of their reserve number.

MR. KONRAD answered that CO2 is not worth much in Chicago and that their reserve is about 35 tcf.

CHAIRMAN TORGERSON said that some people say they have already used 3 tcf and that hasn't been deducted.

SENATOR TAYLOR asked if CO2 can be reinjected to help with field pressure.

MR. KONRAD answered that it has some different characteristics, but they intend to dispose of it underground to help recover [pressure].

SENATOR TAYLOR said he liked the term "open season" and asked what access there would be for future production facilities and the pipe for independents.

MR. KONRAD answered that the pipeline would be regulated extensively by FERC and NEB. Transparent access and costs are central to their reason for existence.

SENATOR TAYLOR asked if that also applied to production facilities.

MR. KONRAD replied that would be up to each field, which all has its own facilities.

MR. SCHILHAB added if someone came up and leased lands and made a discovery, they would develop that field much like North Star is being developed. Those facilities would be constructed and they would have gas available to go into a pipeline if there's a pipeline there. It would be an open access pipeline, but they would have to work out arrangements with the shippers on that pipeline. If they wanted to use existing facilities, they would negotiate with the facility owners.

SENATOR HALFORD asked if that includes the initial processing facility that takes out the CO2 and whether that was subject to open access.

MR. KONRAD answered that depends on if it's in the project and if the each field builds its own facility.

CHAIRMAN TORGERSON said the question had to do with the independents, not one of their working partners.

MR. MARUSHACK responded that, "You need to know the size of the asset you're talking about." If you have room in an existing facility, that leads you down one set of negotiations. If you're talking about a large asset, it may be cheaper for them to support their own gas facility.

CHAIRMAN TORGERSON said it seemed like they could lock out a competitor because he would have to negotiate with existing owners to get the right to run product through the CO2 facility.

MR. KONRAD answered that he didn't know if they could be locked out or not, but there would have to be capacity.

Number 1000

SENATOR TAYLOR asked what if we find more gas than we originally thought was there, do all the independents potentially have to build their own CO2 facility or pumping facility because someone else owns the only pipe.

MR. KONRAD replied, "When you build a pipeline, you build in capability for it to be expanded. We want exactly that. We want a pipeline that has low transportation costs that encourages more investment. Usually those expansions lower the tolls for everyone." He said this is what is called the "virtuous cycle."

SENATOR HALFORD explained that the Committee's concern is that the conditioning facility be treated the same way so there is effective access.

MR. KONRAD explained further that producers in the Lower 48 know what the rules are before they go drilling in an area.

SENATOR TAYLOR asked if their evaluation of the economics would include participation either by equity, tax reduction or severance.

MR. SCHILHAB answered that they would base their economics on their understanding of what the taxing regime is today.

MR. KONRAD replied that their goal is, "to create an economic project that stands on its own and is profitable…. We are not asking for help today. If at some point in time we think we need help, we'll let you know that, but it's certainly not our goal."

SENATOR TAYLOR asked if the economies of scale would be improved if they considered LGN tidewater and the Lower 48 jointly as opposed to considering them separately.

MR. MARUSHACK answered that they wouldn't even know how to construct all those things together. These are serious construction issues. "What makes most sense is you look at an economic project on the Lower 48 pipeline. You have capacity to expand that volume. Then you look at if there are alternatives that come off of that to go into other markets. By the time we get this thing on line, it's several years out there. You don't know exactly what the market is going to be for oil on which LNG is based. You don't know exactly what's happening with the market with gas. You may do things in terms of hedging…. A single pipeline project is a big undertaking all by itself."

MR. KONRAD said they are planning a pipeline that has incremental compression capacity. If they built a 4 bcfd pipeline, they could easily expand it to 6 bcfd.

MR. SCHILHAB commented that they are looking at a base pipeline design that would get gas to the Lower 48. They hope to come up with an economically viable project with that. If they can't, they will look for ways to mitigate cost or change the overall economics. One of the things they might look at is taking LNG or GTL to tidewater.

SENATOR ELTON asked if equity ownership tax issues would be addressed if the base pipeline didn't pencil out and or would it be a consideration before that. As an owner, he thought the state would want him to address the question: "Does it make sense to invite Alaska in as an equity owner, because it's clearly going to have some cost to the project?"

MR. KONRAD answered that they would look at potential partners throughout the process, including Foothills and a number of other investors who have expressed interest. He said they had not precluded anyone. He thought it was a fundamental issue for the state to decide whether it would want to be an owner.

MR. MARUSHACK added that there was a very big difference between what they do with the equity versus what happens on the taxing side. "We are not asking for anything now and our base case is we ask for nothing in the future. That's on the tax side. On the equity side, that will come." He explained that the three of them represent six companies that have made a major acquisition. They are trying to blend three cultures together to see if they can come up with an economic project. They are limiting the numbers of people right now to make the discussion easier in coming up with a base project.

SENATOR AUSTERMAN reiterated his concerns that there be jobs for Alaskans and the need for energy in Alaska be met. He asked Mr. Schilhab [ExxonMobil] if there would be some kind of settlement with the people of Alaska soon.

MR. SCHILHAB said he wasn't the one to answer that.

TAPE 9, SIDE A

CHAIRMAN TORGERSON said he didn't want to get into that issue right now, but that it would be a very big one. He asked them to explain the "hub" concept.

MR. MARUSHACK asked if they are familiar with the Chicago hubs where there are many pipelines coming together where people trade products back and forth. There are storage and NGL facilities - "Lots of product in, lots of product out."

CHAIRMAN TORGERSON asked if they were looking at doing something like that.

MR. MARUSHACK replied that that was Ken Thompson's plan. He said there would be excess capacity and valves and flanges would be available.

CHAIRMAN TORGERSON asked how FERC would include a conditioning

plant as part of the permitting process.

MR. KONRAD answered that the state would put in a request to the regulators and they would then decide. He explained that initially they are not regulated with pipelines. "CO2 facilities are not at all uncommon in a whole host of gas fields across the U.S. Typically, the CO2 is taken out on a lease. Our particular one will be enormous, but they are normally not part of a pipeline."

CHAIRMAN TORGERSON asked if part of their study included in-state usage in Cook Inlet.

MR. KONRAD answered that access to in-state gas is important criteria. That's clearly facilitated on a southern route. They are looking at creative options on a northern route. But markets would drive any further extensions. "Anybody that wants to buy gas off of this pipeline will probably be asking in open season whether they want to commit to pipeline capacity for the first activity."

CHAIRMAN TORGERSON asked him if the answer was no.

MR. KONRAD responded that if they're coming the southern route with flanges at Fairbanks, they're talking very small volumes of gas. He said there would be ability to access it, but the volumes would be insignificant and wouldn't impact the pipeline design. If someone would want a larger capacity, they would design around that.

SENATOR HALFORD said he liked the accelerated schedule, but it means their decisions would be made internally without, necessarily, much interaction with the legislature. He thought the state and the legislature should have input, but he didn't know how they should achieve that.

MR. KONRAD said they would have a better idea in 60 days of how achievable their goal is.

SENATOR TAYLOR noted that the state participated to the extent that state permits are required.

SENATOR AUSTERMAN asked when they thought the gas would flow.

MR. KONRAD answered that it would take three years to build and a year to a year and a half to order the materials to build it. They do not know how long the regulatory process will take. 2007 would be the fastest humanly possible timeframe.

CHAIRMAN TORGERSON thanked them for coming in and adjourned the meeting at 5:20 p.m.