ALASKA STATE LEGISLATURE
SENATE RESOURCES STANDING COMMITTEE
October 26, 2015
2:59 p.m.

MEMBERS PRESENT

Senator Cathy Giessel, Chair
Senator Mia Costello, Vice Chair
Senator John Coghill
Senator Peter Micciche
Senator Bert Stedman
Senator Bill Wielechowski

MEMBERS ABSENT

Senator Bill Stoltze

OTHER MEMBERS PRESENT

Senator Mike Dunleavy
Senator Lyman Hoffman
Senator Anna Mackinnon
Senate Click Bishop
Senator Charlie Huggins
Senator Pete Kelly
Senator Kevin Meyer
Representative Lora Reinbold
Representative Shelley Hughes
Representative Liz Vazquez

COMMITTEE CALENDAR

Overview by AOGCC: Offtake Authorizations for Point Thomson and Prudhoe Bay

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

DAN SEAMOUNT, Commissioner
Alaska Oil and Gas Conservation Commission (AOGCC)

Anchorage, Alaska
POSITION STATEMENT: Explained AOGCC offtake rulings for Prudhoe Bay and Point Thomson.

CATHY FOERSTER, Engineering Commissioner and Chair
Alaska Oil and Gas Conservation Commission (AOGCC)
Anchorage, Alaska
POSITION STATEMENT: Explained AOGCC offtake rulings for Prudhoe Bay and Point Thomson.

ACTION NARRATIVE

2:59:47 PM
CHAIR CATHY GIESSEL called the Senate Resources Standing Committee meeting to order at 2:59 p.m. Present at the call to order were Senators Coghill, Stedman, Costello, Micciche, Wielechowski and Chair Giessel.

Overview by AOGCC: Offtake Authorizations for Point Thomson and Prudhoe Bay

CHAIR GIESSEL said the goal for this meeting is to advance a natural gas pipeline project for Alaskans, and today the committee would hear from the Alaska Oil and Gas Conservation Commission (AOGCC) on its recent ruling on gas offtakes for the North Slope.

She said the AOGCC is a very significant organization that most Alaskans aren't familiar with. It was established in [1955]. The commission had a hearing on gas offtakes and methods for it and she looked forward to hearing about how that went along with the criteria they used to evaluate that request and their conservation order.

CHAIR GIESSEL recognized Senators Dunleavy, Hoffman, Bishop and MacKinnon.

3:02:00 PM
DAN SEAMOUNT, Geologist Commissioner, Alaska Oil and Gas Conservation Commission (AOGCC), said the most important reason they are here today is to talk about their decisions on gas offtake, which was based mainly on engineering analysis. While he is a geologist, Commissioner Foerster is best qualified to talk about the engineering part of the four decisions they made.

He explained that the geology of the North Slope has been worked over the decades. Hundreds of wells have been drilled there; at

least nine were drilled before Prudhoe Bay was discovered; and the reservoir and structure is very well understood geologically.

MR. SEAMOUNT related that mainly the AOGCC regulates the subsurface operations of oil fields, not the surface or air quality. They make sure wells are drilled safely and efficiently, and try to ensure there is no waste of the resource - neither oil nor gas.

CHAIR GIESSEL recognized Senators Meyer and Stevens.

3:05:08 PM
CATHY FOERSTER, Engineering Commissioner and Chair, Alaska Oil and Gas Conservation Commission (AOGCC), explained that the offtake rulings for Prudhoe Bay and Point Thomson were made in anticipation of major gas sales from the North Slope in 2025. She would tell the committee what they decided and then the history behind those decisions and what they mean going forward.

She said the gas offtake allowable at Prudhoe Bay was changed from 2.7 bcf/day to 3.6 bcf/day. However, if they were to wake up tomorrow morning and find a gas pipeline, the commission would have an emergency session and take that allowable [the 2.7 bcf/day] to zero, because it would be too soon.

MS. FOERSTER explained that Point Thomson had no gas offtake allowable, because that field had no pool rules - the operator applies for pool rules when they are ready to start operating it. There are statewide rules that all fields operate under, but when a field comes on line, it typically has some special rules that require tweaking the statewide rules or new rules need to be added that will allow for that field to be operating appropriately. Pt. Thomson had no rules in anticipation of coming on line next year with a gas cycling for a liquids removable pilot, so it's time for them to have pool rules. Along with those, in order to move forward their gas pipeline, they needed an offtake allowable, which the commission ruled is now 1.1 bcf/day total gas offtake (including fuel and tiny sales to little users).

3:07:54 PM
MR. SEAMOUNT related that when he first started his job in 2000, the state was talking about putting in a gasline in 2014. That just "scared the hell out of me," because the North Slope was producing 1 million barrels of oil a day and the gas was being used to help produce it. His thought was that if a gasline is

hooked up by 2014, there will be a lot of waste. However, the timing is right for 2025.

MS. FOERSTER added that the AOGCC is responsible for regulating oil, gas and geothermal exploration, production and development in Alaska on all state lands and in state waters. The agency oversees drilling, well work, well production operations and reservoir management. Their primary responsibilities are protection of human safety and fresh ground waters, waste prevention, encouraging greater ultimate recovery and protect correlative rights; the two that come into play most in making gas offtake decisions are to prevent waste and encourage greater ultimate recovery.

MS. FOERSTER said all of the known proven gas on the North Slope resides at Prudhoe Bay and Point Thomson, and there is a lot of it. That gas has been called stranded for a long time, because there is no way to get it to market. As the agency charged with encouraging greater ultimate recovery of all hydrocarbons, it is AOGCC's job to help see that this gas does get to market.

3:10:39 PM
SENATOR GIESSEL and asked what other potential gas fields are on the North Slope and how much gas is in them.

CHAIR GIESSEL recognized Representative Reinbold.

MS. FOERSTER answered that a little Barrow gas field is being used to fuel the City of Barrow, but they consider it to be off the table. Kuparuk is gas poor and other fields are having gas exported from Prudhoe Bay to them. So, nobody else has significant gas to contribute to a pipeline on the North Slope. The United States Geological Survey (USGS) estimates a potential 154 tcf/gas yet to be discovered. But how much of that can be counted on? The oil and gas business is a gambler's game, she said, and the potential is only that until someone discovers it. Money has to be spent to discover it and it's got to be in some place that the federal government hasn't put off limits.

MR. SEAMOUNT remarked that the North Slope is on the same trend as the one (Laramide Orogeny) running all the way down east of the Rocky Mountains into the Gulf of Mexico. He had worked the entire trend and had never seen a part of it that is more oil and gas prone than the North Slope. It seems like every well that is drilled there finds some gas and finds some oil. The problem in the past has been economics and the environment, but

he was "pretty confident" that there is a lot more gas to be found on the North Slope.

3:13:21 PM
CHAIR GIESSEL asked if the Foot Hills is a potential area.

MR. SEAMOUNT answered that he believes it is, but the people that really have done a lot of work on it are the USGS, the state DNR and the Alaska Division of Geological and Geophysical Surveys (DGGS).

CHAIR GIESSEL asked if it is possible for a 42 or a 48-inch pipeline to drain the North Slope of gas in 10 or 15 years.

MS. FOERSTER answered that it depends on the pipeline design: how many compressor stations and the operating pressure. It is probably possible that 28 tcf with the right design could be gone in 10 years, but that is a good question for the people who are designing and planning to operate it.

CHAIR GIESSEL asked if it's possible to drain a gas field too quickly so that one can't get the optimal amount of gas like with an oil field.

MS. FOERSTER replied that gas fields act just the opposite of oil fields. She explained there are two basic kinds of gas fields: a pressure depletion gas field - simply, the pressure drops as it gets produced - and water-drive gas fields that have an aquifer underneath the gas and as the pressure is lowered, water comes in. In that kind of field the operator wants to pull it as fast and hard as possible, because it lowers the pressure in the encroached area. Most of the gas fields in Alaska are pressure depletion fields and however it is done it is fine.

CHAIR GIESSEL asked her to comment on the gas in Prudhoe Bay and Point Thomson.

3:16:51 PM
MS. FOERSTER said that timing on the gas is not the issue; it's the timing on getting the gas out so that the oil is protected. The other half of AOGCC's mission in making these decisions is prevention of waste. Taking the gas from an oil or a condensate field before all the oil has been produced will cause some of that oil and condensate to be lost. This is a fact.

She said 2.5 billion barrels of oil is left at Prudhoe Bay. This is about how much oil has come out of the Kuparuk reservoir in

its 34 years of production and Kuparuk is the second largest oil field in North America. "It's not chump change." One doesn't make decisions about 2.5 billion barrels lightly; one is trying to protect 2.5 billion barrels for the citizens of Alaska. She and Dan had lost a lot of sleep worrying about it.

She explained that at Point Thomson before the latest wells were drilled and more data was provided on that reservoir they thought there was a whole lot more than 200 million barrels of condensate, but the current estimate is for 200 million barrels. That is a little less than the oil that has been produced in 50 years from Swanson River. "Again, this is not chump change."

CHAIR GIESSEL recognized Senator Huggins.

MS. FOERSTER said the AOGCC has the task of encouraging that the gas gets produced while also making sure that that oil and condensate isn't wasted or lost forever in the reservoir. "Allowing the gas to be produced before the oil is gone and the condensate is gone will reduce the recovery of the oil and the liquids," she said. "But not allowing the operators and the State of Alaska to take advantage of what might be the only window of opportunity to sell that gas would also be wasteful and certainly wouldn't encourage greater ultimate recovery of that resource." The effects of gas sales on the losses versus the timing and getting the ultimate recovery of that gas had been studied since before she came to the commission in 2005.

3:19:44 PM
SENATOR MICCICHE asked her to talk a little about oil and gas recovery techniques that might increase the production of gas in the later years of the reservoir.

MS. FOERSTER answered that the Prudhoe Bay operators had been doing a good job of implementing those techniques. Prudhoe Bay is a big reservoir with a gas cap and a big healthy thick oil rim underlain by an aquifer. As secondary recovery, the operator has been injecting water into the aquifer at the base and reinjecting gas into the gas cap for pressure maintenance. So, if they pulled out the oil and didn't reinject the water and the gas, then the pressure would drop and the reservoir energy that allows that oil to come to the surface would deplete over time and the "sweep efficiency" of sweeping through all the little pore spaces and rocks to get as much out as possible would be less. The operator has also injected enriched gas into the oil reservoir, itself, an enhanced oil recovery (EOR) technique, to scoop more oil off the rock.

The AOGCC will ensure that those sorts of things and others continue to happen between now and the start of gas sales and even after, so that everything possible is done to accelerate oil production and ensuring the safety of the remaining oil reserves on into gas sales.

She related that the Prudhoe Bay operator tried, and has had good success with, a pilot to test injecting water (which being heavier than both oil and gas, is usually injected at the bottom) into the gas cap to see if when there isn't enough gas to keep the pressure up, water can be used instead - or if it will mix in with the oil, because it's heavier and ruin recoveries of the oil. Because the pilot has been successful, water injection is being expanded.

SENATOR COSTELLO asked if the commission has the ability to revise its ruling if new technology comes to light and where their authority comes from. She also wanted to know when the review would happen.

MS. FOERSTER replied that the commission's authority is in statute and it will keep an eye on developments between now and the start of major gas sales. Some reports and studies are due to the commission at certain points during that time and they will look for very specific performance of both the cycling of the Point Thomson liquids and gas and the continuation of the Prudhoe Bay acceleration of reserves. Based on what is seen, the commission can call a hearing and reconsider; it can say all bets are off.

SENATOR COSTELLO asked if the results from the recycling report don't come back to AOGCC's satisfaction, what recourse they have.

MS. FOERSTER answered that right now ExxonMobil's premise is that full field cycling wouldn't get much more condensate out of the ground than just going straight to gas blowdown, but if the cycling pilot demonstrates that is not true - the pilot operates better than people thought it would, that the condensate yield is richer, or sweep efficiencies are better in the field - then people could say no, you can't sell the gas from Pt. Thomson until you cycle for longer. But the Prudhoe Bay operator has been doing a great job of accelerating oil reserves, so maybe the commission should increase the offtake allowable at Prudhoe Bay and let it do all the heavy lifting until Point Thomson has taken advantage of all the liquids. She said they feel pretty

confident that will not be the case, but the commission has to "leave ourselves a parachute."

3:25:31 PM
MS. FOERSTER said the commission has convinced themselves, after consulting with well-respected world-class consultants, that the quality of the Prudhoe Bay models are much better than anything the AOGCC could do, and they don't have the money to do it, anyhow. It took 50 years for hundreds of brilliant engineers, geologists and geophysicists to put the Prudhoe Bay model together and it's pretty darn good. Nothing would be gained by "gaming it." After looking under the hood, pulling things apart and putting them back together with consultants, staff is convinced they are valid and should be trusted - they are good to use.

AOGCC staff have signed confidentiality agreements and played with the BP and ExxonMobil experts tweaking and playing with things in the model to see what happens, and have come to some good feelings about the best ways to optimize both liquid and gas recovery from Prudhoe Bay and Point Thomson. All the recommendations are based on those studies.

When she first started at the AOGCC Ms. Foerster thought it would be very hard for BP and ExxonMobil to convince them to approve major gas sales from either of those fields and that is still true, but at Pt. Thomson it's on ExxonMobil's back to prove cycling first isn't the best answer for greater ultimate hydrocarbon recovery. She has also been saying that the operators won't get fully behind North Slope gas sales until the timing is right for them, and because of the resource ownership and their technical experience, when the timing is right for them the timing is going to be ripe for the state, too.

At the public hearing on August 27, she said that all four of the Prudhoe Bay owners presented testimony in support of major gas sales from Prudhoe Bay starting in 2025. There were some differences between what ConocoPhillips and Chevron proposed and what BP and ExxonMobil proposed, but those had more to do with commercial agreements. On September 1, the Pt. Thomson owners did something similar. The commission left the records open on both hearings until the middle of September, because the operators had some unanswered questions to get back to the commission on. She said then they closed the record and on October 15 the commission issued the order allowing the 3.6 bcf offtake 2025 for Prudhoe Bay and 1.1 bcf in 2025 from Point Thomson.

3:30:30 PM
In five years, BP must provide a report on their oil recovery acceleration activities and what they have gotten for their efforts.

MS. FOERSTER explained that the commission authorized CO_2 injection for Enhanced Oil Recovery (EOR) purposes based solely on positive study results. They have been charged with coming back with a study on the different places that they were considering injecting the CO_2 that is going to be a byproduct from gas production.

She explained that CO_2 is a commonly used fluid for EOR, but it's not always good. If it helps you it helps a lot, but if it doesn't help it can harm you, so work needs to be done to determine if CO_2 can be an oil recovery enhancer or detractor. Those studies have to be done before injection can be implemented.

The commission was also asked to consider granting approval for CO_2 disposal, and although the AOGCC has authority to grant EPA class 2 (oil field products) disposal, CO_2 that has gone past the custody transfer point and into a plant is no longer a class 2 fluid and therefore outside of AOGCC jurisdiction. So, they couldn't say yes or no.

3:33:25 PM
As part of granting Point Thomson all of their pool rules, Ms. Foerster said the commission granted them an offtake allowable of 1.1 bcf/day, but only after five years of a continuous cycling pilot and no less than one year before start of major gas sales. The ruling has no sunset clause, because the commissioners didn't want to signal concern to lenders. But a bad outcome on any of the three studies could cause reconsideration of their rulings. This is not intended to be a threat to anybody. Rather it's intended to be a promise to the citizens of the State of Alaska that the commission is continuing to keep an eye on this.

SENATOR WIELECHOWSKI asked if there is any loss at Prudhoe Bay from their ruling increase to 3.6 bcf/day.

MS. FOERSTER answered that there will be less oil recovered from Prudhoe Bay because major gas sales start, but it will be a small fraction of what is left in the ground in 2025. Now Prudhoe Bay has 2.5 billion barrels. In 2025 they are hoping for

much less, 1 billion barrels, and it will be a small fraction of that. However, the oil equivalent of 22 tcf/gas is more than all of that 2.5 billion barrels.

SENATOR WIELECHOWSKI asked if they look at the monetary value to the state or btu.

MS. FOERSTER answered that the AOGCC looks at btus, but it varies somewhat from field to field depending upon the quality of the oil and the richness of the gas. The general average equalizer used is 6 mcf/barrel.

MR. SEAMOUNT added that even with the loss of oil at the end of field life, the oil pipeline won't be running, because there won't be enough oil. Just like they do in Texas, people will come in with stripper wells and try to get what's left out. There will be some loss, but total hydrocarbon recovery will be better than not starting now.

MS. FOERSTER continued that there will be losses, but they are acceptable losses if the choice is between stranding 22 tcf/gas and leaving .5 billion barrels in the ground. BP doesn't want to lose the value of the oil, either, and they are doing accelerating EOR.

3:37:09 PM
SENATOR WIELECHOWSKI asked if ExxonMobil still takes the position that it's better to blowdown Pt. Thomson. He requested that she talk about what that means and the model AOGCC uses to analyze how much can be taken off without hurting the state's interest.

CHAIR GIESSEL recognized Senator Kelly.

MS. FOERSTER explained that Point Thomson is primarily a gas condensate that is very complex. It's over-pressured, for one thing - you have to wait if you're drilling muds or you will have blowouts. So, the cost of drilling those wells with those pressure variations are accelerated. The reservoir itself has a gas cap that is condensate-rich with an oil rim underneath. For both of those reasons, Point Thomson is technically an oil field. Before the last three wells were drilled, the picture was very different - another reason the commission is keeping an eye on it.

She explained that the Prudhoe Bay model is very dependable, but the Point Thomson model is based on a handful of wells rather

than a few thousand. So, every time a well is drilled the model will change. Before the three wells were drilled, the model of the reservoir said there was a richer condensate yield than what they think now. It also says that the highly viscous oil rim at the bottom is only 40-50 feet thick instead of 200 feet, as they previously thought. She added that before they didn't have enough wells that penetrated deeply enough to get a grasp on how thick the oil rim was.

As they worry about liquid recovery, they worry first about the oil, because once anything is done to the gas cap it jeopardizes the oil. So, 50 feet of oil in an area as big as Point Thomson isn't chump change, but if the oil is highly viscous and 9,000-10,000 feet deep in over-pressured really expensive wells, producing it isn't economically or technically feasible.

MS. FOERSTER explained in order to get that viscous oil out of the ground, long horizontal wells have to be drilled and then be produced slowly, because a really viscous oil rim with gas above it and water below it - water is more viscous than gas but it flows easily relative to viscous oil - and it would be no time before the oil was gone. Think about a container with an inch of peanut butter in it and a foot of gas above it and a foot of water below it and sticking a straw with some holes in it into the middle of the inch section and start sucking on it, it would probably be about five seconds before all you were getting was air and water. ExxonMobil would be challenged in trying to produce that oil. It would probably cost $50-$100 million to drill one well, and typically an injector and producer pair are drilled to keep the pressure. So, that $100-200 million for a producer/injector for a few barrels a day for a week, a month or two, and then be dead. Would you make that investment?

MS. FOERSTER said an operator can't be made to do something that is going to cost them money and never make them a cent. That is what the current model looks like for the viscous oil. So, the AOGCC is comfortable that with current technology and current costs it can't be done.

SENATOR WIELECHOWSKI asked if she was saying basically that there is no economically recoverable oil at Point Thomson.

MS. FOERSTER repeated that the oil rim at Point Thomson is not economically recoverable - at any price - even $1,000/oil.

3:43:28 PM

Finding no questions, Ms. Foerster went on to talk about the condensate. Before the latest wells were drilled, she said AOGCC had some 1970s vintage drill stem tests (extrapolation from a representative sample of the fluid) that can be used to try to predict recoveries of condensate and were optimistic about recoveries, but now it looks like there is going to be a lot less than that. This is part of the picture. The other part is when doing cycling you are trying to get the liquids out without dropping the pressure, because in a condensate field when the pressure drops below the dew point (every field has its own), the condensates start dropping out in the reservoir. When they start dropping out, two bad things happen: one is that they stay there and two is that they drop out near the well bore so they start decreasing the permeability of gas and oil and start clogging up the pore spaces and reduce well productivity. Point Thomson has lower than expected condensate and it is right at the dew point, so the minute "a puff of gas gets out," it drops. They couldn't ask for anything worse to produce liquids.

A third thing that happens is the permeability of the reservoir and compartmentalization or not of the reservoir affects the sweep efficiency of a cycling project. If permeability is too good, the fluids will go straight from the injector well to the producer well instead of sweeping out in a circular flow. From all that is known now, this model is wrong. Current data indicates that full scale cycling isn't economical and that just by putting in enough producers in the right places a significant portion of the condensate will come out just by blowing it down.

SENATOR WIELECHOWSKI asked if the cycling pilot would work on Point Thomson.

MS. FOERSTER answered no; AOGCC staff participated with BP, ExxonMobil, ConocoPhillips and Chevron in both models and spent a lot of time tweaking the Point Thomson model to optimize the design of the cycling with a world-class consulting firm behind them. Some of the smartest minds in the world worked on it.

3:48:31 PM
SENATOR COGHILL asked what the timeline is for the cycling wells.

MS. FOERSTER answered the hope is to start cycling up some time next year. It was thought that just two wells would be needed for the small-scale cycling project, but now an additional well will be drilled. The cycling will continue until such time as they have major gas sales or until they convince themselves and

the AOGCC that they are losing money. The same wells being used for cycling will be used for production.

SENATOR MICCICHE asked if globally she knew of a low pressure condensate reservoir that has been produced effectively with water flood only, the question being if the gas cap is removed from Point Thomson, is there any hope for future recovery by other enhanced means.

MS. FOERSTER answered no gas reservoir has been produced with water flooding, but there are successful gas cycling projects around the world, but not with as complex and high pressure of a reservoir as Pt. Thomson has. Part of ExxonMobil's cost challenge is the reservoir with close to 10,000 psi pressure would need compressors that could get it up higher than that to push it down, and those aren't cheap.

MS. FOERSTER said there is no gas condensate reservoir in the world that has been produced through gas cycling that has the challenges that this one does, and a lot of the gas they are hoping to sell would be burned up just fueling the project.

CHAIR GIESSEL said a requirement of the Pt. Thomson settlement agreement was to remove the condensates first, and by 2016. The pipeline is in to remove those condensates and ExxonMobil is projecting 10,000 barrels/day.

MS. FOERSTER said she's hearing the same thing. The best answer would be the one ExxonMobil gives.

CHAIR GIESSEL asked if ExxonMobil can't remove gas for commercialization until 2025, based on conservation, what they will do for the next 10 years if the condensate can't be cycled and secured.

MS. FOERSTER said that was their call, but she understood their plan is to cycle until major gas sales start up. The choices are cycle or shut in.

3:54:15 PM
SENATOR COGHILL asked if CO_2 is being used at Prudhoe Bay.

MS. FOERSTER answered that the gas has some CO_2 and all of the gas being produced at Prudhoe Bay that is not being used for fuel is being reinjected into the gas cap. This is the produced gas, but the enriched gas - with some lighter ends of the liquids or the heavier ends of the hydrocarbon gas - goes into

the oil part of the reservoir. CO_2 is sometimes used instead of hydrocarbon gas as an EOR.

SENATOR COGHILL asked if that is happening right now.

MS. FOERSTER answered no; but it happens all over the world in the right reservoirs. It hasn't been proved to work at Prudhoe Bay, yet. All the CO_2 at Prudhoe Bay is being injected into the gas cap where its sole use is for pressure maintenance.

3:55:45 PM
SENATOR WIELECHOWSKI asked if the 200 million barrels of condensate is economically recoverable and if there is a lot more undiscovered condensate there.

MS. FOERSTER answered as the field is delineated, they will learn if it's a little bit bigger or a little bit smaller or something they don't anticipate. Things are still getting found at Prudhoe Bay. A lot more will be known about the field once the production starts.

SENATOR WIELECHOWSKI said he had also heard talk about going from 10,000 barrels/day to 70,000 barrels/day and asked how likely that would be.

MS. FOERSTER responded that would be if they did a full field syphon project and the likelihood is less than 10 percent based on what is known now. The AOGCC would not have granted an offtake if they thought the likely scenario was going to be full field cycling, but they can and will make a change if it is warranted.

SENATOR WIELECHOWSKI asked when the 1.1 bcf/day offtake is allowed to start and how much condensate will be lost.

MS. FOERSTER answered that a tiny bit of that gas would be used for fuel the minute the cycling project is started. She didn't have a good number on the associated losses, but she would get one.

SENATOR COSTELLO asked if AOGCC had ever done its own reservoir modeling and what criteria the commission uses to determine the reservoir modeling is so good.

MS. FOERSTER replied that the Pt. Thomson consultant AOGCC hired actually did build a model based on all available well data, and it pretty closely replicates ExxonMobil's. It's easier to make a

model when there is limited data and no production, so the cost and difficulty of the Point Thomson model was not a concern to AOGCC as the cost and difficulty of the Prudhoe Bay was. To make a model based on thousands of wells and 50 years of production is more challenging and it would cost millions to replicate it. Even if it cost only $1,000, that would be $1,000 that doesn't have to be spent if they are confident that the model is technically valid, and staff have checked all of their assumptions and inputs and did special cases and what-ifs. If that can be done for free, a nickel is too much to spend on their own model.

4:00:28 PM
SENATOR COSTELLO asked if she is aware of any innovation or technology being developing to make reservoir modeling less costly and time consuming.

MS. FOERSTER answered that some things just take time: data needs to be acquired, computers need to have inputs; one has to history match and fact check.

CHAIR GIESSEL asked if the gas pipeline is built sooner than 2025, what the AOGCC would do.

MS. FOERSTER answered that they would reevaluate their decision. This is not a threat but a promise: they have only one chance to do this and they want to do it right.

CHAIR GIESSEL recognized Representatives Hughes and Vazquez.

CHAIR GIESSEL thanked Ms. Foerster for her work and for detailing the decisions.

4:02:45 PM
ADJOURNMENT

CHAIR GIESSEL, finding no further business, adjourned the Senate Resources Standing Committee meeting at 4:02 p.m.