

**ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE**

May 12, 2017

1:04 p.m.

MEMBERS PRESENT

Representative Andy Josephson, Co-Chair
Representative Geran Tarr, Co-Chair
Representative Dean Westlake, Vice Chair
Representative Harriet Drummond
Representative Justin Parish
Representative Chris Birch
Representative DeLena Johnson
Representative George Rauscher
Representative David Talerico

MEMBERS ABSENT

Representative Mike Chenault (alternate)
Representative Chris Tuck (alternate)

COMMITTEE CALENDAR

PRESENTATION: OIL & GAS WELL & PIPELINE SAFETY

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

KRISTIN RYAN, Director
Division of Spill Prevention & Response
Department of Environmental Conservation
Anchorage, Alaska

POSITION STATEMENT: Provided an update on recent pipeline spills and answered questions.

FRANK RICHARDS, PE, Senior Vice President, Program Management
Alaska Gasline Development Corporation
Department of Commerce, Community & Economic Development
Anchorage, Alaska

POSITION STATEMENT: Provided information related to the Alaska Gasline Development Corporation's ongoing work on pipeline design.

KEITH MEYER, PhD, Pipeline Engineering Manager
Alaska Gasline Development Corporation
Department of Commerce, Community & Economic Development
Anchorage, Alaska

POSITION STATEMENT: Provided information related to pipeline safety and response.

GENE THERRIAULT, Director, Government Relations
Alaska Gasline Development Corporation; Team Lead
Interior Energy Project
Alaska Industrial Development and Export Authority
Department of Commerce, Community & Economic Development
Anchorage, Alaska

POSITION STATEMENT: Provided information on future business opportunities for the Alaska Gasline Development Corporation.

ACTION NARRATIVE

[1:04:30 PM](#)

CO-CHAIR GERAN TARR called the House Resources Standing Committee meeting to order at 1:04 p.m. Representatives Tarr, Parish, Talerico, Westlake, Drummond, and Josephson were present at the call to order. Representatives Rauscher, Birch, and Johnson arrived as the meeting was in progress.

PRESENTATION: OIL & GAS WELL & PIPELINE SAFETY

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CO-CHAIR TARR announced that the only order of business would be a presentation detailing oil and gas well and pipeline safety, which was requested by Representative Parish.

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KRISTIN RYAN, director, Division of Spill Prevention & Response, Department of Environmental Conservation (DEC), provided updated information on recent pipeline spills reported by Hilcorp Alaska (Hilcorp) and BP. In Cook Inlet, three incidents were reported by Hilcorp. The first was a natural gas pipeline that ruptured and leaked natural gas into Cook Inlet at a depth of about 75 feet for several weeks; the pipeline has now been repaired and

the cause of the rupture was found to be scouring of the ocean floor as a section of the pipeline rubbed on the subsurface of the ocean. Before the repair, the amount of gas flowing in the pipeline was reduced by one-half, and now the pipeline and affected platforms are in operation at full capacity. The second release of oil was believed to be in a pipeline connecting the Anna platform to the Bruce platform on the west side of Cook Inlet. However, DEC has concluded a large boulder hit the legs of the Anna platform and oil condensate burning in a flare mechanism was released into the environment and observed as sheen. Hilcorp drained the feeder tube connected to the flare and provided evidence that three gallons of oil condensate were released into the environment. After approval by the Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation, and DEC, Hilcorp reopened the pipeline in the presence of PHMSA, DEC, and the U.S. Coast Guard (USCG) without further incident. The third leak in Cook Inlet was an anomaly in a natural gas pipeline within the jurisdiction of PHMSA, and she said she had no further information except that the problem has been resolved.

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REPRESENTATIVE PARISH asked for the approximate dates of the first incident in Cook Inlet.

MS. RYAN said the leak continued from December [2016] to April [2017] and offered to provide the specific dates.

REPRESENTATIVE PARISH related Hilcorp stated the leak ended in the second week of April, and inquired as to how many cubic feet of natural gas were wasted.

MS. RYAN said she would provide that information.

REPRESENTATIVE PARISH said Hilcorp estimated a loss of 26 million [cubic feet of natural gas], and inquired as to the age of the pipelines.

MS. RYAN advised the original infrastructure was installed in the early '60s; however, there have been upgrades and changes made to the pipelines, so she was unsure of the age of specific areas of the pipelines.

REPRESENTATIVE PARISH asked Ms. Ryan if her division had accurate information on which sections of pipeline are original, which have been replaced, and when.

MS. RYAN said no. Her division has an assessment and inventory underway in conjunction with PHMSA, the Cook Inlet Regional Citizens Advisory Council, and certain other state and federal agencies "to get a better picture of the infrastructure from a holistic perspective" Companies provide information when contingency plans are submitted to DEC for approval that include preventing spills and their capacity to respond if one occurs, but the plans do not provide details related to the age of pipelines.

REPRESENTATIVE PARISH asked for the anticipated lifespan of a pipeline in the bottom of Cook Inlet before it fails.

MS. RYAN explained the technology for building pipelines has changed and pipelines are different now. She related the pipelines in Cook Inlet were not expected to operate for "this long a period of time ... this is beyond the life that was originally anticipated."

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REPRESENTATIVE RAUSCHER recalled after the [Exxon Valdez Oil Spill on 3/24/89] double-hulled oil tankers were required, and suggested the use of double-hulled pipelines may be possible in the future.

MS. RYAN further explained that the pipelines being built today are often encased in materials such as concrete. Although not the same as a double-hulled tanker, pipelines today meet the standards nationally recognized as the "best standards." [DEC] has a best available technology requirement that asks industry to consider using the best equipment and technology for new construction. She remarked:

The best available technology process is sort of an iterative process where they evaluate all the different options that they could use to build that pipeline and we work with them to figure out the right and safest method ... that is economically feasible.

REPRESENTATIVE RAUSCHER surmised pipelines in Cook Inlet are built to new and improved regulations.

MS. RYAN added the best available technology contingencies in DEC statute and regulations are "state of the art" and in common use today from a regulatory perspective, "to try to push

industry to use the best technology available to them." Further, it allows some flexibility to determine the best methods.

REPRESENTATIVE PARISH expressed his concern that because of aging infrastructure other pipelines may be in a similar condition as those that have failed. He posited this may be the indication of the beginning of a systemic failure, and questioned how DEC would respond.

MS. RYAN pointed out the state has very different standards for oil pipelines than for natural gas pipelines; in fact, there are no standards for natural gas pipelines. There are many standards for pipelines and infrastructure related to oil. For example, in addition to the best available technology clause [oil producers] are required to have cathodic protection and leak protection technology, so industry monitors pipelines on an ongoing basis to seek leaks before they occur and perform prevention measures. She said aging infrastructure is not a new problem in Cook Inlet or on the North Slope thus DEC is focused on preventing spills from aging infrastructure by leak detection technologies.

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CO-CHAIR JOSEPHSON asked whether Ms. Ryan could inform the committee on the history of why the state regulates the quality and care of oil pipelines but not that of gas pipelines.

MS. RYAN read from AS 46.03.020, DEC generic powers of department authority, as follows [in part]:

... allows the department to adopt standards for petroleum and natural gas pipeline construction, operation, modification, or alternation.

MS. RYAN advised the aforementioned clause creates authority for DEC to set standards for the construction of natural gas pipelines; however, AS 46.04.050 exempts DEC from requiring contingency plans for natural gas pipelines. She explained the logic behind the exemption was that if there is a release of natural gas there is no method to clean it up, and therefore there is no need to document through a contingency plan that a company has the capacity to clean up a spill. Ms. Ryan related several years ago "it was looked at to decide if the state wanted to pursue regulations for natural gas pipeline construction and operation, and it was determined that that was

not in the best interest for the state, because it would require getting primacy from PHMSA, the federal organization that regulates all these lines, and it's sort of an all or nothing opportunity: you either take all the natural gas pipelines in the state from PHMSA and do what they're doing, or you do none. ... I was told at that point the state decided that was a lot of work ... that the work that PHMSA was doing was adequate, and that the state wouldn't be doing it, probably, any differently than PHMSA is doing it now, and declined to, to adopt regulations."

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CO-CHAIR JOSEPHSON questioned whether the Alaska Oil and Gas Conservation Commission (AOGCC), or another agency, could go to Hilcorp or another company and demand that it make an effort to stop a natural gas leak.

MS. RYAN explained AOGCC has authority if a company is wasting a state resource. However, in the aforementioned situation, the resource was not being extracted but was transiting from land to fuel an oil platform, thus AOGCC did not have a role. In a situation where a resource is being extracted and is not managed correctly, AOGCC could step in. [PHMSA] does have the ability to force Hilcorp to contain and control any leak from a natural gas pipeline, and did so. [PHMSA] inspects pipelines, and has requirements that pipelines are constructed and repaired by methods that meet national standards, and the state relies upon PHMSA to regulate natural gas pipelines.

CO-CHAIR JOSEPHSON asked why offshore drilling can be done safely in the Beaufort Sea and the Chukchi Sea, but the [Hilcorp pipeline repair] had to wait until ice was cleared in Cook Inlet.

MS. RYAN pointed out in Cook Inlet the issue was that the divers needed to be tethered to a boat, and because the boat may have needed to move to avoid ice flow, the situation was unsafe for divers. In federal waters, the [Bureau of Safety and Environmental Enforcement (BSEE), U.S. Department of the Interior] regulates oil spill prevention and response activity such as the proposal to drill in the Beaufort and Chukchi seas; in fact, BSEE required a three-way contingency process to close a well - all of which would be functional even with ice cover - before it allowed Shell [oil company] to drill. This is a very different scenario than a natural gas pipeline in Cook Inlet, and a very different regulatory paradigm.

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CO-CHAIR TARR asked if the movement of the large boulder that struck the Anna platform could have been related to seismic activity.

MS. RYAN said it is pretty typical for large boulders to be rolling around on the seafloor of Cook Inlet due to the strong tidal influence that pushes the rocks around. In response to Representative Parish, she said there are 15 platforms in Cook Inlet.

REPRESENTATIVE PARISH asked for the amount of funding available for the eventual removal of platforms.

MS. RYAN deferred the question to the Department of Natural Resources (DNR) because DNR leases the subseafloor to the platforms with requirements for removal.

CO-CHAIR TARR turned the presentation to Representative Parish's question as to whether the legislature could be assured that a large diameter pipeline [under] Cook Inlet would not cause problems, or how to protect the state from problems.

REPRESENTATIVE PARISH stated that he raised the question of pipeline safety because of the loss of tens of millions of cubic feet of natural gas through a pipeline leak. He shared his strong concern about putting another pipeline in a seismically active area that possibly could not be repaired for a long time due to weather.

1:32:50 PM

FRANK RICHARDS, PE, senior vice president, program management, Alaska Gasline Development Corporation (AGDC), Department of Commerce, Community & Economic Development, provided brief background information for Dr. Keith Meyer, pipeline engineering manager, AGDC. Mr. Richards informed the committee AGDC's work on pipeline design is conducted within the regulations and statutory requirements of the Pipeline and Hazardous Materials Safety Administration (PHMSA), U.S. Department of Transportation. The transportation of natural and other gas by pipeline is governed by PHMSA regulation 49 CFR Part 192, which is the regulation that pipelines in the U.S. must meet to progress to operation. As a regulator, PHMSA will ensure AGDC is in compliance with its standards and AGDC has worked with

PHMSA on the Alaska Stand Alone Pipeline (ASAP) and the Alaska LNG Project (Alaska LNG) due to the great concern about pipeline safety specifically related to frost heave or frost settlement to the land crossing from the North Slope to Cook Inlet. Further, the Cook Inlet crossing is also a very challenging environment, but AGDC has a design package that meets all requirements and would put in place safety factors to ensure the pipeline will meet its design lifespan and beyond.

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KEITH MEYER, PhD, pipeline engineering manager, AGDC, said AGDC is in the design phase of the Alaska LNG project which incorporates a Cook Inlet crossing. He related AGDC took over the design of the pipeline from the [Joint Venture Agreement (JVA) between BP, ConocoPhillips Alaska, Inc., and ExxonMobil] and is working with the original contractor for the Cook Inlet crossing, INTECSEA Houston Energy Center II. [AGDC] has incorporated the design into its recent filing with the Federal Energy Regulatory Commission (FERC), especially related to Resource Report 11, which defines pipeline reliability and integrity in general. He explained the pipeline is one of three major components [of the project], along with the gas treatment plant (GTP) and the liquefied natural gas (LNG) plant. Also included in Resource Report 11 is discussion of the Cook Inlet crossing, which is of particular interest to PHMSA, the agency that administers the federal regulations that govern the pipeline: Title 49, CFR Part 192, that sets the minimum federal safety standards for natural gas pipelines. Dr. Meyer further explained there were multi-year analyses of the Cook Inlet crossing that considered alternative locations for the crossing, geophysical and geotechnical metocean surveys, and detailed seismic analysis of faulting and the dynamics of seismic motion. The pipeline is located in areas to avoid significant changes in seafloor topography, areas of extreme current, and to avoid a perpendicular alignment with the direction of the current. Further, AGDC is working with PHMSA to meet federal standards of burial depth at the east and west shore crossings, and to address shallow hazards associated with shore crossings including Arctic hazards such as ice and ice keels, and moderate hazards such as keels, soil scour, and beach erosion. Presentations on the design have been given to PHMSA, and AGDC has received clarification on the requirements related to onshore versus offshore pipelines. He said AGDC's design criteria is extensive, using metocean data and multiyear analyses under the guidelines of best environmental protection practices, and the criteria considers moving boulders, anchors,

vessels, ice keels, seismic events, and seismic faulting. He restated that Title 49, CFR Part 192, are minimum standards; however, AGDC will use approximately 25 percent over minimum standards for pipe wall thickness, along with a protective coating of fusion bonded epoxy, further coated with 3.5 inches of concrete. Dr. Meyer advised AGDC has site-specific and general crossing analyses augmented with metocean data, which is data such as the depth and velocity of currents and changing topography on the seafloor that may affect the pipeline. Further work with INTECSEA will be to review all the analyses to ensure all of the design criteria is sufficient, and to refine the analyses within the PHMSA and FERC review processes. He further explained there are block valves located at each shore crossing, and pads to service the block valves; AGDC has met all of the minimum standards and all the Cook Inlet specific standards. Dr. Meyer advised after [the design phase is complete], AGDC will continue to work with PHMSA for the operational part of design and to follow through with the operation of the pipeline, particularly as to the monitoring of the pipeline during operations. The pipeline is fully piggable using pigs which travel through the pipeline to detect cracks, corrosion, and changes in geometry and wall thickness, among other factors.

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REPRESENTATIVE PARISH inquired as to the anticipated design life of the pipeline.

DR. MEYER responded the desired design life is the same as the length of the lease: 30 years. However, he pointed out the Trans-Alaska Pipeline System (TAPS), after its initial design life transpired, underwent a supplemental environmental impact statement (EIS) and continues to operate. Generally, the life of a well-designed, well-maintained pipeline is nearly indefinite, depending on active operational monitoring and maintenance. He opined with state oversight, Alaska LNG would be very vigilant regarding the operational life of the pipeline.

REPRESENTATIVE PARISH asked how often the pipeline would be pigged.

DR. MEYER said the pipeline would be pigged every year in its early life to ensure there are no anomalies and to respond if any are found; after some time, the frequency of in-line inspections (ILIs) would be increased again to reveal late-life anomalies, as is specified by code. He added that there would

be continuous leak-detection monitoring by the pipeline control system that would shut the valves automatically in the event of a leak, similar to oil pipeline systems.

REPRESENTATIVE PARISH asked for the pipeline's capacity.

MR. RICHARDS said the mainline pipeline is designed to transport three billion feet cubic feet per day.

DR. MEYER added the project is a 42-inch pipeline operating at a pressure of above 2,000 pounds per square inch (PSI), which is a high-pressure pipeline. In further response to Representative Parish, he explained at that pressure, natural gas is a dense gas which would be liquified at the site of the proposed liquefaction plant located on the Kenai Peninsula.

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CO-CHAIR TARR pointed out the existing natural gas pipelines in Cook Inlet are six-inch diameter, and asked how AGDC compensates when using baseline data from much smaller pipelines.

DR. MEYER said AGDC is using INTECSEA from Houston to bring experience gleaned from large diameter pipelines in the [Gulf of Mexico]. He acknowledged there is minimal experiential basis for data in Alaska on large diameter pipelines, and INTECSEA has a lot of experience with pipelines of this size. There is experiential data in the Cook Inlet, such as the metocean data design criteria. He related AGDC and Alaska LNG used local contractors to develop ocean data and to record historical data such as ice events in Cook Inlet.

CO-CHAIR TARR asked whether AGDC is required to build to a certain magnitude of earthquake minimum standards based on historical seismic activity.

DR. MEYER confirmed that AGDC must meet minimum federal standards; however, federal standards are "not that specific," thus each project must develop its own standards for the pipeline. For the onshore pipeline, AGDC researched the probabilistic seismic hazard assessment, the TAPS standards, and - due to seismic events in Interior Alaska - a more recent valuation of seismic activities. Criteria were developed which are subject to oversight and evaluation by FERC and PHMSA; both agencies must agree that the results are the minimum standards specifically for the Alaska LNG pipeline. This would also apply to Cook Inlet, where AGDC reviewed standards such as faulting.

The faults in the bottom of Cook Inlet are very old and are not considered active, however, north of Cook Inlet there are the Lake Clark and Castle Mountain faults which are considered potential hazards to the pipeline and which are addressed by onshore design requirements. Dr. Meyer stressed the project follows industry standards for events within the Holocene Epoch - which covers about 10,000-15,000 years [up to the present] - and if an active fault is found within that time period, the data is included in the design criteria to allow for future movement; for example, the [Denali Fault] was included in the TAPS design criteria. He recalled during the most recent Denali earthquake TAPS performed as designed, and was back in operation within two days. Further, many of the same "designers" are working on Alaska LNG, and are using the same fault crossing criteria and methodology as was used for TAPS.

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REPRESENTATIVE TALERICO recalled seeing a section of pipe that had been replaced in Cook Inlet that was smaller and very different than the pipe described by Dr. Meyer for this project. He observed the pipe planned for the project "is certainly much more substantial than the 50-year-old infrastructure that we have there"

DR. MEYER, although he did not have direct knowledge of the existing pipe, affirmed that in the last half century advances have been made in base metal technology and welding technology, and even more importantly, [improvements have been made] in the emphases on workers' qualifications, oversight, the evaluation of construction practices, as well as construction and operator evaluations that require participation from all parties. He opined "things have changed quite a bit."

REPRESENTATIVE WESTLAKE returned attention to Hilcorp's natural gas leak caused by a three- by ten-foot boulder, and asked whether there is an "active season" when there is more movement [on the seafloor in Cook Inlet].

DR. MEYER was unaware of any patterns other than seasonal ice and the diurnal pattern of the currents.

CO-CHAIR TARR inquired whether the speed of a response to an incident is included in the overall plans.

DR. MEYER said the speed of the response [to an incident] has not been evaluated at this time.

CO-CHAIR TARR expressed her understanding that at this time block valves at shore crossings and [spill detection] sensors [are in the plan] thus there are specific locations where the pipeline could be shut down; undetermined at this time is once [a spill] is contained, how long would transpire to the point of repair.

DR. MEYER clarified that response to an initial venting of the pipeline would be within minutes. He said his previous answer was to the response to fixing the pipeline "anywhere within the venting of the 27 miles between the block valves." He restated AGDC has not evaluated how fast an operational repair team would respond to an incident, but in the FERC filing there is information as to how fast the pipeline system responds to an alert of a venting.

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MR. RICHARDS added the design safety studies for the project reviewed the interaction between [the pipeline] and ice, ice keels, subseafloor boulder movement, and anchor drop and/or drag from large ships, thus the design criteria reflects a 30 percent increase in wall thickness of the pipe from 0.92 inch to 1.25 inch, as well as 3.5 inches of concrete coating. He said these criteria will provide a suitable support to handle both geologic and geotechnical types of impacts - as well as ship impacts on the pipe - and is a very robust design.

DR. MEYER noted AGDC is also tasked by PHMSA to ensure the pipeline is stable and to demonstrate as part of its offshore regulatory requirements submitted by INTECSEA in its report; however, a review of the INTECSEA report has not yet been received from PHMSA as part of its regulatory oversight.

REPRESENTATIVE PARISH asked about the likelihood that a significant break, requiring repairs to the pipeline, would occur during the pipeline's 30-year design life.

DR. MEYER said AGDC feels that is very unlikely as AGDC is exceeding the design standards; AGDC has amassed a vast amount of data and experience through TAPS and through the North Slope Point Thomson and Prudhoe Bay transmission lines. This confidence is based not only on the pipeline design, but also on the knowledge that modern gas pipelines today have a lot of experience in monitoring, and in day-to-day operational facility; in fact, if a problem is coming up along the pipeline

- which is possible - modern operational monitoring can meet and safely prevent a major outage.

REPRESENTATIVE PARISH gave a scenario in which a tanker dropped its anchor on the pipeline, causing a leak in late November or early December, and asked how long it would take to repair.

DR. MEYER remarked:

I'm sorry, as I said earlier, I don't have the information for response teams for that, for that particular scenario, we just haven't gone that far yet in our operational evaluation.

MR. RICHARDS pointed out plans for actual repairs need to be factored into the operational component and have not been identified yet, in terms of risk. Contingencies and mitigations are a work in progress because AGDC has been working on preliminary front-end engineering design (pre-FEED), and will now continue into front-end engineering design (FEED), detailed design, and operational evaluations on how to handle those types of arrangements.

REPRESENTATIVE PARISH, noting that Hilcorp took approximately four months to respond to and repair [a natural gas leak in Cook Inlet], asked whether AGDC could respond more quickly.

DR. MEYER remarked:

With the caveat that I said earlier, we are looking at experience, for example, in the North Sea as well the possibility of contracting, contacting and contracting deep-sea repair groups that would quickly mobilize to Alaska. These are speculation, I don't want to put this on ... as something we're adhering to right now because we are trying to work those things out; nevertheless, this is not a situation that is unheard of around the world, and we are of course ... we would employ best, best technology to, to respond.

2:04:27 PM

GENE THERRIault, director, government relations, AGDC; team lead, Interior Energy Project, Alaska Industrial Development and Export Authority, Department of Commerce, Community & Economic Development, informed the committee he would distribute AGDC's most recent semi-monthly update [document not provided]. He

directed attention to a press release issued by the U.S. Department of Commerce that highlighted some of the agreement between the U.S. administration and the People's Republic of China, including an item expressing a greater desire for LNG exports from the U.S. to China [document not provided]. Currently, AGDC president Keith Meyer is in China at a gas conference presenting the Alaska LNG project, and meeting with possible financiers and customers. Mr. Therriault then referred to a recent letter from the Industrial Energy Consumers of America to U.S. Secretary of Energy [Rick] Perry specifically identifying Alaska's natural gas as being the first natural gas that should be exported. Finally, Mr. Therriault noted that previous attendees of the [Alaska LNG Summit held 3/1/17-3/6/17 in Girdwood, Alaska] are now engaged with AGDC on signing confidentiality agreements in order to gain access to AGDC's data, which he said shows "continued forward momentum, no guarantee that our infrastructure will get built, but a lot of positive things happening"

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REPRESENTATIVE PARISH asked for the minimum internal diameter of a pipe that can be pigged.

DR. MEYER recalled the minimum is four inches; but he pointed out the minimum continues to decrease with advances in technology.

MS. RYAN, turning attention to North Slope infrastructure, said there was an inner annulus mechanical integrity failure that caused a release of crude oil and diesel fuel at wellhead 13, drill pad number 2, owned by BP on the North Slope. The event occurred on 3/30/17, and is in recovery mode. Also occurring was spraying of oil outside of the wellhouse, and some leaking of oil out of the wellhouse related to the inner annulus failure. She said the oil was contained on the well pad and there has not been a release of oil off the pad. [DEC] is working with BP to clean up where possible, although because of the infrastructure on the pad it is not unusual for DEC to allow the company to leave some [oil] in place if there is a plan for final clean up when the facility is closed.

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REPRESENTATIVE PARISH returned to [one of the aforementioned natural gas pipeline leaks] and asked whether it was an eight-

inch pipeline that leaked from December [2016] through April [2017].

MS. RYAN said the Hilcorp natural gas pipeline was eight-inch. In further response to Representative Parish, she said she was unsure when, but the gas pipeline and the companion oil pipeline were pigged. She remarked:

It was tricky to pig it because of a valve that, you know, these pigs not only have to fit through the pipeline, they have to fit through all the valves and there's a right-angle valve going up to the platform leg that made it very difficult to get a pig that would fit into that type of a pipeline. It is pretty amazing how they've been advancing, in the capabilities to pig [pipelines] today.

MS. RYAN offered to provide the exact date of when the pipeline was pigged.

REPRESENTATIVE PARISH expressed his confusion about how pigging a line provides high-quality data on wall thickness, bends, or breaks, but the data needed to repair the leaking pipeline was unclear. He asked how reliable the data is from pigging a line in terms of anticipating problems.

MS. RYAN advised [the data] varies widely depending on the apparatus used; some pigs are "smarter than other pigs." For example, the pig used between the oil [pipeline] and the Bruce platform just pushed the oil through; the term "pig" is a broad term used for almost any type of device put in a pipeline. Further, it is harder for a smaller pig to collect advanced information. In response to Representative Parish, she said it is possible to have a four-inch smart pig.

REPRESENTATIVE PARISH asked whether Hilcorp is routinely using smart pigs in its pipeline.

MS. RYAN said Hilcorp was able to do so within the last six months on its oil pipeline because of the angle of the valve. How often a company can pig a pipeline varies. In further response to Representative Parish, she said she was unsure of Hilcorp's specific plans for the use of smart pigs, but Hilcorp has announced that it plans to "step up" some of its monitoring. There are other types of monitoring that Hilcorp does - such as using sonar to evaluate the pipe from the outside - and other ways to evaluate the integrity of a pipeline.

2:16:36 PM

ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 2:16 p.m.