



BP has strong year in Alaska, with \$830M profit, \$543M in state taxes

BP Exploration (Alaska) had a good year in 2017, with a profit of \$830 million, the company said in a March 29 email.

Taxes and royalties paid to the state of Alaska totaled some \$543 million.

The 2017 profit was the result of an improvement in the price of crude oil, a third year of no production decline at Prudhoe Bay and the revision in the U.S. federal corporate income tax rate.

“On the financial front, I am very proud of the progress that BP Alaska, and indeed the entire Alaska industry, has made in adapting to the lower for longer oil price environment,” said BP Alaska Region President Janet Weiss.



JANET WEISS

Prudhoe Bay production has averaged more than 280,000 barrels per day for three years and the crude oil price improved in fiscal year 2017 to \$54.49 per barrel compared to \$43.27 per barrel in FY 2016.

see **BP FINANCIALS** page 12

Setback for BC LNG opponents

Environmentalists and the green movement got slapped down in a joint British Columbia government-First Nations report for their constant claim that indigenous communities are opposed to fossil fuel projects.

“There have been many positive impacts to First Nations communities related to LNG development, prior to any construction,” said the report. “Much capacity has been created due to these projects. However, expectations have also been raised. Now, First Nations leaders are trying to deal with their constituents’ frustration because of the delays or cancellation of these projects.”

The report’s findings were based on a consensus view from meetings held last fall with aboriginal groups, who believe that LNG projects “will be the most safe, environmentally rigorous, and human-rights compliant projects in the world.”

The authors urged the B.C. government to partner with First Nations to improve communication, information sharing and ongoing engagement on the LNG industry, while proposing that the government should do more to improve investor confidence in the sector.

Karen Ogen-Toews, president of the First Nations LNG Alliance, formed by six First Nations at the forefront of LNG

see **LNG OPPONENTS** page 12

Conoco completes exploration well; Tinmiaq 7 drilled to 4,035 ft TVD

Alaska Oil and Gas Conservation Commission data is showing the first record of a completed winter exploration well this year, ConocoPhillips’ Tinmiaq No. 7. AOGCC records show the well was completed Feb. 22 at a total depth of 4,036 feet, and a true vertical depth of 4,075 feet.

The well is one of four the company has permitted for drilling this winter at the company’s Willow discovery on the western side of Greater Mooses Tooth in the National Petroleum Reserve-Alaska: Tinmiaq 7, Tinmiaq 8, Tinmiaq 9 and West Willow 1.

The company, which planned to use three rigs for exploration drilling this winter, has also permitted two penetrations, Putu 2 and Putu 2A, in the southern Colville River unit and two penetrations, Stony Hill 1 and Stony Hill 1A, south of CD5.

ConocoPhillips drilled the Tinmiaq 2 and Tinmiaq 6 on the western side of Greater Mooses Tooth in 2016, with a 12-hour test at Tinmiaq 2 producing 3,200 barrels per day of 44 degree API well.

see **TINMIAQ WELL** page 11

PIPELINES & DOWNSTREAM

New vessels arrive

First two new tugs and one of the spill response barges are now in Valdez

By **ALAN BAILEY**

Petroleum News

The first three vessels that will form part of Edison Chouest Offshore’s new fleet supporting the Valdez Marine Terminal have arrived in Valdez and are undergoing sea trials and demonstrations, in preparation for the transition of the terminal marine services from Crowley Marine Corp. The transition results from a decision by Alyeska Pipeline Service Co., operator of the trans-Alaska pipeline and the marine terminal, to put the contract for the marine services to competitive bid — in August 2016 Alyeska announced that it was awarding the contract to Edison Chouest.

Each barge will have a radar system and infrared cameras that can detect oil on water, to help steer the barge through an oil slick. And the barge command module is perched high above one end of the deck, for maximum visibility.

The switchover is officially scheduled for July 1. But new Edison Chouest vessels are arriving during the months leading up to the handover and, as they gain regulatory approval, will progressively move into the terminal’s marine operations,

see **NEW VESSELS** page 11

EXPLORATION & PRODUCTION

Oil Search moves forward

Alaska’s newest explorer, developer hiring, expanding office, reprocessing seismic

By **KAY CASHMAN**

Petroleum News

The state’s newest oil and gas player, Oil Search, officially took over Armstrong Energy’s Alaska headquarters in Anchorage on April 1, per Keiran Wulff, the company’s top Alaska executive, and has leased additional space in preparation for hiring 110 people versus its original plan to bring on 50 new employees.

The ASX-listed publicly traded Oil Search with offices in Sydney, Australia, and Port Moresby, Papua New Guinea, still hopes to drill next winter on the North Slope leases it now operates, Wulff told Petroleum News, providing the company can



KEIRAN WULFF

obtain all the necessary permits and approvals.

Oil Search continues to conduct interviews in Anchorage, looking for engineers, geologists and other professionals with North Slope experience.

The company secured Armstrong and its minority partner’s interests at and near the Pikka unit, including adjacent Horseshoe leases, in late October. Per the March 25 issue of Petroleum News, Oil

Search received its final regulatory approval connected to acquiring a controlling interest in the leases on March 15, the final step in assuming operatorship.

In addition to taking over Armstrong’s Suite

see **OIL SEARCH** page 10

PIPELINES & DOWNSTREAM

Alberta hails ‘victory’

Canada’s appeal court rejects suit against Trans Mountain; other verdicts pending

By **GARY PARK**

For Petroleum News

A Canadian court has provided a “definitive victory” and cleared the way for the Trans Mountain pipeline across British Columbia, said Alberta Premier Rachel Notley.

Her assertion of a clear-cut triumph for the project followed a Federal Court of Appeal verdict rejecting the arguments of six First Nations, several environmental organizations and the cities of Vancouver and Burnaby.

The case centered around a National Energy Board hearing process and consultations held by the project proponent Kinder Morgan with groups potentially affected by the project to triple capacity on the Trans Mountain system to 890,000 barrels

While the legal battles continue, the oil sands industry in Alberta is struggling with pipeline bottlenecks and a shortage of rail capacity at a time when Canada’s oil output is forecast to grow by 290,000 bpd this year to 4.95 million bpd.

per day of diluted bitumen.

Based on an NEB recommendation, the Canadian government approved the C\$7.4 billion plan in 2016, triggering widespread opposition in B.C., where almost 200 people have been charged with breaching the terms of a court injunction

see **SUIT REJECTED** page 9

● EXPLORATION & PRODUCTION

ANS February production down 3 percent

North Slope crude averaged 513,836 bpd in February, down from 529,420 bpd in January; Cook Inlet up 2.7% at 16,423 bpd for February

By **KRISTEN NELSON**

Petroleum News

Alaska North Slope crude oil production averaged 513,836 barrels per day in February, down 2.9 percent from a January average of 529,420 bpd, and down 2.5 percent from a February 2017 average of 526,760 bpd.

Production data is from the Alaska Oil and Gas Conservation Commission, which provides volumes by well on a month-delay basis.

The largest month-over-month per-barrel decline was at the BP Exploration (Alaska)-operated Prudhoe Bay field, the Slope's largest. Prudhoe averaged 260,990 bpd in February, down 13,493 bpd (4.9 percent) from a January average of 274,483 bpd, and down 8.9 percent from a February 2017 average of 280,681 bpd.

The largest month-over-month percentage drop was at Caelus Alaska's Oooguruk field, which averaged 10,624 bpd in February, down 7.4 percent (844 bpd) from a January average of 11,468, and down 25.7 per-

cent from a February 2017 average of 14,297 bpd.

Some year-over-year increases

Northstar, operated by Hilcorp Alaska, averaged 8,985 bpd in February, down 5.4 percent, 511 bpd, from a January average of 9,496, but up 56 percent from a 5,753 bpd average in February 2017.

The ConocoPhillips Alaska-operated Colville River field averaged 64,488 bpd in February, down 3.9 percent, 2,601 bpd, from a January average of 67,089 bpd, but up 3.1 percent from 62,550 bpd in February 2017. ConocoPhillips added a pad, CD5, at Colville River in 2015 and based on results from the original 15 wells expanded the development to 23 wells with another 10 wells planned.

The Kuparuk River field, also operated by ConocoPhillips, averaged 120,843 bpd in February, down 0.3 percent, 413 bpd, from a January average of 121,256, but was up 7.42 percent from a February 2017 average of 112,498 bpd.

Two other fields with month-over-month declines

also had year-over-year declines.

Badami, operated by Savant Alaska, a Glacier Oil company, averaged 665 bpd in February, down 5.4 percent from an average of 703 bpd in January, and down 25.1 percent from a February 2017 average of 888.

Endicott, operated by Hilcorp, averaged 6,791 bpd in February, down 2.3 percent, 163 bpd, from a January average of 6,954, and down 12.4 percent from a February 2017 average of 7,755 bpd.

Month-over-month increases

The ExxonMobil Production-operated Point Thomson field, with one well in production, averaged 5,592 bpd in February, up 68 percent, 2,266 bpd, from a January average of 3,326 bpd, and down 19.2 percent from a February 2017 average of 6,919 bpd.

Milne Point, operated by Hilcorp, averaged 20,868 bpd in February, up 1 percent, 207 bpd, from a January average of 20,661 bpd, and up 3.2 percent from a February 2017 average of 20,227 bpd.

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Alaska's source for oil and gas news

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● GOVERNMENT

Walker drops seismic for statewide 9-1-1

By KRISTEN NELSON
Petroleum News



GOV. BILL WALKER

Gov. Bill Walker said April 2 that he is requesting re-allocation of a fiscal year 2019 budget request for monies allowing the Alaska Department of Natural Resources to participate in acquiring seismic data in the 1002 area of the Arctic National Wildlife Refuge.

The \$10 million was in the supplemental budget and the funds request said the monies would allow the state to work with other interested parties to acquire seismic in advance of a proposed federal lease sale.

In a statement on the re-allocation request the governor said: “One in four Alaskans lacks conventional access to 9-1-1 as an emergency number.” In some parts of the state, he said, callers must dial a 1-800 number to reach help and the number varies by region.

“Ensuring Alaskans have the same level of access to emergency services provided to the rest of the country is

foundational to building a Safer Alaska,” Walker said.

In a letter to co-chairs of the House and Senate Finance committees, Office of Management and Budget Director Pat Pitney said the Department of Public Safety accelerated work on the 9-1-1 project and “has developed a solid plan that can be implemented in the next 20 months.”

The capital budget request for the enhanced 9-1-1 system would total \$9.5 million and come from a re-appropriation and redirection of existing fiscal year 2019 budget requests, including \$1.059 million of an existing appropriation to the Department of Public Safety Academy, a one-time \$150,000 request for a feasibility study of the central 9-1-1 center and redirection of \$8.327 million of the \$10 million request for 1002 area seismic data acquisition.

“These funds are not needed for seismic work at this time,” Pitney said.

She said the governor requests redirecting \$1.5 million

of the \$10 million be redirected to the Department of Revenue and the Department of Natural Resources “to speed legal and financial due diligence as it relates to the State’s best interest in the Alaska LNG project.”

Specifically, those monies would support agency work “required to finalize negotiations and inform decisions that ensure the maximum benefits to the state” from the LNG project, including evaluation of royalty elections, gas disposition, lease modifications “and other decisions relating to North Slope natural gas commercialization. The funding will support the evaluations, negotiations, analysis, and findings surrounding these issues; overall benefits analysis of the project to the state, and opportunities for state participation for Legislative consideration.”

Pitney said DNR Commissioner Andy Mack, Revenue Commissioner Sheldon Fisher and Attorney General Jahna Lindemuth would be providing additional information on “the necessity of the modest due diligence funding.” ●

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● ENVIRONMENT & SAFETY

HF radar provides valuable ocean data

Technology can map ocean currents, wave heights and vessels over wide area, to help with spill response and SAR activities

By ALAN BAILEY
Petroleum News

Radar systems that use high frequency radio waves have established a crucial role in monitoring ocean surface conditions and are now considered a key component in the toolkit for responding to an offshore oil spill response, Hank Stascewich from the University of Alaska Fairbanks told the Alaska Oil Spill Technology Symposium on March 29. The technology can also be of significant help in an offshore search and rescue operation, Stascewich said.

Offshore monitoring

HF coastal radar, commonly referred to as CODAR, or Coastal Oceanic Dynamics Applications Radar, uses radio frequencies somewhere between the frequencies of FM and AM radio and is positioned at a coastal site, from where it can monitor huge areas of the offshore. The distance from the radar site that can be monitored depends on the radio frequency used but can go out to more than 180 kilometers. Essentially the salt water of the ocean causes what is referred to as Bragg scattering from the transmitted signal, a phenomenon that results in a signal at half the wavelength of the transmitted signal being returned to the radar receiver. The returned signal enables a measurement of the rate of movement of ocean waves: Any difference between the wave velocity and the theoretical velocity of the waves then represents the speed of the ocean current. By triangulating the data from two different radar stations, it is possible to determine both the speed and direction of the currents across a wide area, Stascewich explained.

Extraction of part of the incoming data also enables accurate determinations of wave heights, and the monitoring of the locations of vessels operating in the area of the radar coverage.

Oil spill response

The prime value of the radar in support of an oil spill response is in predicting the trajectory of an oil slick. In conjunction with meteorological wind data, the ocean current data can enable an estimation of the speed and direction for the spread and movement of a slick. In fact, HF radar sites around the U.S., including Alaska sites, feed data into

the National Oceanic and Atmospheric Administration’s oil spill response computer system, Stascewich said.

In the event of an offshore search and rescue operation, the radar data can enable predictions of the drift movement of, say, a person overboard, thus enabling a significant reduction of the required search area.

HF radar data for Alaska’s Beaufort and Chukchi seas are gathered hourly, with statistical techniques then used to analyze the meaning of the vast amount of data collected. The data provides insights into phenomena such as the influence of winds on ocean mixing patterns, and the relative influence of water from the Arctic and Pacific oceans.

Vessel monitoring

In an era when steadily increasing vessel traffic in the Arctic is a cause for concern, the HF radar data can be used to spot the presence of any vessels that are not transmitting marine identification information. For example, in 2014 an Alaska HF radar

system picked up on the presence of an unidentified Russian naval vessel inside the U.S. exclusive economic zone, Stascewich said.

Although there are many HF radar installations around the coastline of the Lower 48, there are just three stations currently operating around the northwest coast of Alaska, Stascewich said. One challenge in Alaska is the general lack of a power supply at remote coastal locations — an HF radar system uses a lot of power and has to

run continuously. Researchers at UAF developed a power module that uses renewable energy and has been powering an HF radar system at Point Barrow for eight years. The plan now is to design a more compact module that can be shipped by helicopter and can be operational within six hours, ready for deployment in the event of an oil spill, Stascewich said. ●

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● GOVERNMENT

Various oil, gas bills in play in Juneau

By KRISTEN NELSON
Petroleum News

As this legislative session moves toward its 90-day statutory limit at mid-month, various oil and gas related bills are being heard, with Senate Bill 125, extending bond authority for the Alaska Industrial Development and Export Authority for an Interior LNG production and natural gas distribution system, already in the House, showing strong bipartisan support.

SB 125 was sponsored by Senate President Pete Kelly, R-Fairbanks, Sen. Click Bishop, R-Fairbanks, Sen. Donny Olson, D-Golovin, and Rep. Scott Kawasaki, D-Fairbanks. It passed the Senate 19-0 in February and is in House Labor and Commerce, along with the companion House Bill 261, sponsored by Rep. Steve Thompson, R-Fairbanks, and Kawasaki.

AIDEA's bonding authority for the Interior LNG project and distribution system expires June 30; the bills extend that expiration date by five years to June 30, 2023.

HB 331 had a first hearing March 30 in House Resources; a second hearing is scheduled in that committee April 6.

Bonding

SB 176 and HB 331, administration bills to bond for payment of oil and gas tax credits, would pay companies which agree to accept funds from the bonding at a discount to cover the state's costs. SB 176 was passed out of Senate Resources in late March and is now in Senate Finance. A hearing in that committee had not yet been scheduled when this issue of Petroleum News went to press.

HB 331 had a first hearing March 30 in House Resources; a second hearing is scheduled in that committee April 6.

Industry has expressed concern over the discount rates the state is proposing but supports the idea of paying off the credits sooner rather than later.

Revenue said in the fiscal note accompanying the bill that some \$800 million in

tax credits awaited state repurchase at the end of calendar year 2017 and said although most cashable tax credits were repealed by the Legislature in 2017, it will take time for the remaining credits to work their way through the system. The bill allows the state to bond for as much as \$1 billion to pay credits, with that amount to be determined by the number of companies that commit to the discounted purchase by the state.

Updated spill fines

Rep. Andy Josephson, D-Anchorage, co-chair of House Resources, told House Finance March 29 that HB 322 is fundamentally an update of spill fees and penalties and said it grew out of natural gas spills in Cook Inlet last year.

Josephson said he asked Kristin Ryan, director of the Department of Environmental Conservation's Division of Spill Prevention and Response, if there was any authority the division needed, and was told they had what they needed for the gas spills incident, but that spill penalties legislation hadn't changed since the 1970s and 1980s.

Josephson said SPAR has had penalties for decades but those haven't been updated and inflation has severely under-

cut those penalties. The result is that SPAR doesn't have a very big stick, he said.

Spills have continued, but the state's ability to penalize responsible parties has diminished very significantly, Josephson said.

He characterized the bill as mostly an adjustment of fines to 2018 dollar values, but said it also sharply increases penalties for continuing spills to motivate parties to deal with them. Penalties are tied to the consumer price index, so they increase without a requirement for SPAR to come back to the Legislature on that issue, he said.

The bill gives SPAR the ability to level administrative penalties, which means the department wouldn't have to go to court to get those penalties. It also requires trucking companies transporting crude oil to submit contingency plans they prepare for the federal government to DEC.

Asked about the derivation of the bill, Josephson said when he was told penalties could use some updating he and his staff began working on the issue with the assistance of leg legal and a state assistant attorney general. The bill moved out of

see OIL BILLS page 8

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continued from page 2

FEBRUARY OUTPUT

Eni's Nikaitchuq averaged 13,990 bpd in February, up marginally, 6 bpd, from a January average of 13,984 bpd, but down 7.9 percent from a February 2017 average of 15,192 bpd.

Cook Inlet

Cook Inlet crude oil production averaged 16,423 bpd in February, up 2.7 percent, 436 bpd, from a January average of 15,987 bpd, and up 13.2 percent from a February 2017 average of 14,514 bpd.

Hilcorp's Beaver Creek averaged 107 bpd, up 20.2 percent from a January average of 89 bpd, but down 94.2 percent from a February 2017 average of 185 bpd.

Hilcorp's Granite Point averaged 2,844 bpd in February, down 7 percent, 214 bpd, from a January average of 3,058, but up 15.7 percent from a February 2017 average of 2,458 bpd.

BlueCrest's Hansen field, the Cosmopolitan project, averaged 827 bpd in February, up 140 percent, 482 bpd, from a January average of 345 bpd, going from one to two producing wells, and up 451.3 percent from a February 2017 average of 150 bpd.

Hilcorp's McArthur River, Cook Inlet's largest, averaged 5,108 bpd in February, down 3 percent, 158 bpd, from a January average of 5,266 bpd, but up 28

percent from a February 2017 average of 3,991 bpd.

Hilcorp's Middle Ground Shoal averaged 1,539 bpd in February, down 1.9 percent, 29 bpd, from a January average of 1,568, and down 12 percent from a February 2017 average of 1,750 bpd.

The Redoubt Shoal field, operated by Glacier Oil's Cook Inlet Energy, averaged 1,467 bpd in February, up 15.3 percent, 195 bpd, from a January average of 1,272, and up 73.2 percent from a February 2017 average of 847 bpd.

Hilcorp's Swanson River field averaged 1,574 bpd, down 3.1 percent, 50 bpd, from a January average of 1,624 bpd, and down 21.9 percent from a February 2017 average of 2,014 bpd.

Hilcorp's Trading Bay averaged 1,833 bpd in February, up 3 percent, 54 bpd, from a January average of 1,779 bpd, and up 10.4 percent from a February 2017 average of 1,661 bpd.

West McArthur River, operated by Glacier Oil's Cook Inlet Energy, averaged 1,124 bpd in February, up 14 percent, 138 bpd, from a January average of 986 bpd, but down 22.9 percent from a February 2017 average of 1,458 bpd.

ANS crude oil production peaked in 1988 at 2.1 million bpd; Cook Inlet crude oil production peaked in 1970 at more than 227,000 bpd. ●

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OWNER: Petroleum Newspapers of Alaska LLC (PNA)
Petroleum News (ISSN 1544-3612) • Vol. 23, No. 14 • Week of April 8, 2018
Published weekly. Address: 5441 Old Seward, #3, Anchorage, AK 99518
(Please mail ALL correspondence to:
P.O. Box 231647 Anchorage, AK 99523-1647)
Subscription prices in U.S. — \$118.00 1 year, \$216.00 2 years
Canada — \$206.00 1 year, \$375.00 2 years
Overseas (sent air mail) — \$240.00 1 year, \$436.00 2 years
"Periodicals postage paid at Anchorage, AK 99502-9986."
POSTMASTER: Send address changes to Petroleum News, P.O. Box 231647 Anchorage, AK 99523-1647.

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Company gets regulatory approval to operate Nanushuk development



Keiran Wulff, Oil Search's top Alaska executive

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- NEI Fluid Technology
- Nordic Calista
- North Slope Telecom
- Northern Air Cargo
- NRC Alaska
- Nutrien
- Olgoonik Corp.
- Opti Staffing
- PENCO
- Petro Star Lubricants
- PRA (Petrotechnical Resources of Alaska)
- Price Gregory International
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- Tanks-A-Lot
- The Local Pages
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- Volant Products
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- Western Pacific Crane & Equipment

• UTILITIES

Bill proposes Railbelt grid operator

HB 382 would establish a state authority for overseeing management and operation of electric generation and transmission system

By ALAN BAILEY

Petroleum News

On March 29 the House Special Committee on Energy listened to testimony regarding House Bill 382, a bill that would establish a new state authority for overseeing the management and operation of the Alaska Railbelt electricity generation and transmission system. The bill, introduced by the committee's chair, Rep. Adam Wool, D-Fairbanks, would require the Regulatory Commission of Alaska to form the new authority, overseen by a board of directors representing the Railbelt electric utilities, independent power producers, electricity consumers and Railbelt municipalities. The commission and the Alaska Energy Authority would have non-voting membership of the board.

The authority would establish rules for the management of a unified transmission system that would optimize at lowest cost the use of power generation facilities connected to the electrical grid. Other responsibilities would include the establishment of a transparent and universal transmission tariff; nondiscriminatory open access to the transmission system; enforced interconnection standards and protocols; regional transmission and generation planning criteria and protocols; and enforced reliability standards.

The authority would also be responsible for the authorization of development projects for the transmission system, and for the development of long-range

Several years ago the utilities formed the Alaska Railbelt Cooperative Transmission and Electric Co., or ARCTEC, to advance the concept of a system operator for the Railbelt grid.

regional plans for electrical generation and transmission.

A long history

The question of whether and how to unify the management and operation of the Railbelt electrical system has been the subject of debate for many years. Currently six independent utilities and the state of Alaska own and operate different sectors of the system, a system that in total supports fewer electricity consumers than most utilities in the Lower 48. This fragmented ownership leads to a number of issues, including the less-than-optimum usage of the most efficient power generation units, and the pancaking or stacking of power transmission fees for businesses wanting to transmit power across multiple transmission sectors.

The fragmented transmission system ownership renders it difficult to approve investments in projects that benefit multiple utilities. There have been many questions raised over decisions by individual utilities to independently build new generation facilities. And the balkanization of the system makes it challenging to

achieve economic dispatch, the optimum dispatch of the cheapest power on the grid.

Ultimately, the desire is to minimize the cost of electricity for consumers without sacrificing the reliability of supply. There are also questions over how much of the power should be generated from renewable energy sources.

RCA opinion

In 2015 the RCA issued an opinion stating that unification of the electrical grid management and operation should proceed. Since then the commission has been encouraging the utilities to proceed toward unification on a voluntary basis. The utilities have been making moves towards economic dispatch, with three utilities, Chugach Electric Association, Municipal Light & Power and Matanuska Electric Association forming an agreement for the tight pooling of their generation and transmission resources. The utilities have also been working on a plan to form a transmission company to take responsibility for the operation of the whole of the transmission system.

A difficult issue is the formation of a unified or independent system operator to oversee the operation of the entire generation and transmission system. Difficulty arises from questions over the composition of the operator entity's board, and the extent to which the entity should be independent from the utilities. The utilities have argued that, because they have the necessary technical expertise in how the electrical system works, they need involvement in the governing entity. Independent power producers that want to sell power to the system argue for governance that is more independent from the utilities, to ensure a level playing field for all.

HB 382 is obviously an effort to mandate by law a unified operator for the system.

ARCTEC

Several years ago the utilities formed the Alaska Railbelt Cooperative Transmission and Electric Co., or ARCTEC, to advance the concept of a system operator for the Railbelt grid. Currently four of the six Railbelt utilities are ARCTEC members. ARCTEC has proposed the formation of what it refers to as a Railbelt Reliability Council, an

organization that would be an alternative to the system operator envisaged in HB 382. Early this year ARCTEC selected consultancy firm GDS Associates Inc. to act as facilitator for the formation of the Railbelt Reliability Council.

During the March 29 House Energy meeting Seth Brown from GDS Associates reviewed the status of the ARCTEC Railbelt Reliability Council project. Brown said that his company has consulted with a wide range of stakeholders and would complete a report and a memorandum of understanding by the end of April. The RRC, as envisaged, would have a role in enforcing reliability standards, in ensuring an open-access transmission service, and in planning generation and transmission expansion. The organization would not, as it stands, have a role in administering economic dispatch across the Railbelt grid. However, GDS does recommend that the RRC should study the economic dispatch issue, in particular to pin down the potential costs and benefits of this type of power pooling arrangement, Brown said.

The recommended board would include four transmission system owner representatives, a representative from the state attorney general's office, two renewable energy representatives and an unaffiliated director position. The RRC staff would have opportunities to assess the practicalities of board decisions, and go to the commission with any concerns, Brown said. He told the committee that he thinks that there is a good chance that most of the utilities will agree to the RRC proposal.

AEA involvement

Janet Reiser, executive director of the Alaska Energy Authority, told the committee that in AEA's view economic dispatch by an independent entity is a key to the reform of the way in which the Railbelt grid operates. Over the years there have been several attempts at Railbelt grid unification, but no voluntary effort has yet succeeded, she said.

Reiser compared AEA's concept for a unified system operator with the RRC model that GDS is proposing, and with the operator concept in HB 382. Both the AEA and HB 382 concepts involve economic dispatch, while the GDS concept does not. And AEA proposes that the sys-

see **GRID OPERATOR** page 7



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EPA to ease back emissions standards

THE ASSOCIATED PRESS

Environmental regulators announced April 2 they will ease emissions standards for cars and trucks, saying that a timeline put in place by President Barack Obama was not appropriate and set standards “too high.”

The Environmental Protection Agency said it completed a review that will affect vehicles for model years 2022-25 but it did not specify details on new standards, which it said would be forthcoming. Current regulations from the EPA require the fleet of new vehicles to get 36 miles per gallon in real-world driving by 2025. That’s about 10 mpg over the existing standard.

The agency said in its decision that the regulation set under the Obama administration “presents challenges for auto manufacturers due to feasibility and practicability, raises potential concerns related to automobile safety, and results in significant additional costs on consumers, especially low-income consumers.”

The EPA, in partnership with the National Highway Traffic Safety Administration, will work to come up with new standards.

Automakers applauded the decision, arguing that the current requirements would have cost the industry billions of dollars and raised vehicle prices due to the cost of developing the necessary technology.

“This was the right decision, and we support the Administration for pursuing a data-driven effort and a single national program as it works to finalize future standards,” said Gloria Bergquist, vice president, communications and public affairs for the Alliance of Automobile Manufacturers, in a statement. “We appreciate that the Administration is working to find a way to both increase fuel economy standards and keep new vehicles affordable to more Americans.”

Environmentalists, meanwhile, warned the proposed rollbacks will make U.S. cars more expensive to fill up.

“No one in America is eager to buy a car that gets worse gas mileage and spews more pollution from its tailpipe,” said Fred Krupp, president of the Environmental Defense Fund. “Designing and building cleaner, more cost-efficient cars is what helped automakers bounce back from the depths of the recession and will be key to America’s global competitiveness in the years ahead.”

Any change is likely to set up a lengthy

legal showdown with California, which has the power to set its own pollution and gas mileage standards and doesn’t want them to change. About a dozen other states follow California’s rules, and together they account for more than one-third of the vehicles sold in the U.S. Currently the federal and California standards are the same.

Some conservative groups are pressing EPA Administrator Scott Pruitt to get rid of the waiver that allows California to set its own rules. Pruitt said in a statement April 2 that the agency will work with all states, including California, to finalize new standards.

“Cooperative federalism doesn’t mean that one state can dictate standards for the rest of the country,” he said. “EPA will set a national standard for greenhouse gas emissions that allows auto manufacturers to make cars that people both want and can afford — while still expanding environmental and safety benefits of newer cars.”

California Attorney General Xavier Becerra said his team is reviewing the EPA’s determination.

“We’re ready to file suit if needed to protect these critical standards and to fight the Administration’s war on our environment,” Becerra said in a statement. “California didn’t become the sixth-largest economy in the world by spectating.”

A joint statement by the governors of California, Oregon, and Washington, as well as the mayors of Los Angeles, Oakland, San Francisco, Portland and Seattle, also decried the EPA’s decision.

“This move sets us back from years of advancements by the automotive industry put in motion by states that took the lead in setting emission standards,” the statement said. “These standards have cleared the haze and smog from our cities and reversed decades of chronic air pollution problems, while putting more money in consumers’ pockets.”

Sen. Edward J. Markey said the existing standards are “technically feasible and economically achievable,” and added that he would use every legislative tool to block the moves.

“Slashing these standards would amount to turning the keys to our energy policy over to Big Oil and the auto industry,” said the Massachusetts Democrat, who is a member of the Environment and Public Works Committee and chair of the Senate Climate Task Force. ●

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GRID OPERATOR

tem operator organization be housed with the AEA, with AEA providing back-office support. The GDS proposal contains many good ideas and has much alignment with AEA’s views, but it is not clear that all of the utilities will voluntarily agree with the GDS concept, Reiser said

Reiser said that AEA, with its institutional knowledge of Alaska energy issues, is anxious to have an active role in the Railbelt system operator issue. And the state and the AEA board have directed the agency to participate. However, the agency does not see itself as having any kind of enforcement role and wants to help the various stakeholders arrive at a satisfactory arrangement. Reiser pointed out that several years ago AEA had conducted an economic dispatch study for the Railbelt.

Utilities oppose

Four of the Railbelt electric utilities sent a letter to House Energy opposing HB 382 on the grounds that, while the utilities are making significant voluntary progress towards economic dispatch, a common set of reliability standards, the formation of a transmissions company and a Railbelt-wide organizational model, HB 382 represents the views of one, small stakeholder group. MEA, ML&P and Chugach Electric are in the testing phase of their economic

dispatch arrangements, the utilities have signed a memorandum of understanding for a transmission company and the utilities have commissioned GDS to recommend an organizational model, the utilities wrote.

REAP supports

The Renewable Energy Alaska Project, on other hand, has asked that HB 382 be passed, saying that although REAP appreciates the efforts that the utilities have been making through the GDS project, REAP does not believe that voluntary efforts by the utilities will ultimately succeed in meeting grid unification goals. And the omission of economic dispatch from the RRC proposal is a serious flaw, REAP believes.

REAP sees unified operation of the grid, with non-discriminatory access to the system, as a key to successful renewable energy development in the Railbelt.

REAP Executive Director Chris Rose told House Energy that the unified management of the Railbelt grid is a consumer issue that should have been dealt with 10 or 15 years ago. There have been multiple efforts over the years to solve this problem, but none has succeeded, he said. Ultimately success will rest with the Legislature establishing something such as the authority proposed in HB 382, Rose said. ●

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OBITUARY

88 Energy reports death of Paul Basinski

88 Energy said April 5 that Paul Basinski has died due to unexpected complications resulting from a heart transplant operation.

Basinski was founder and CEO of Burgundy Exploration LLC. He was, 88 Energy said, “the concept generator for the HRZ unconventional play that 88E and Burgundy continue to pursue at Project Icewine.”

Basinski began acquiring North Slope acreage in 2012 and in late 2014 88 Energy struck a deal with Burgundy to acquire a majority interest in Burgundy’s large acreage position.

In releases on its Icewine exploration well 88 Energy said internal analysis and modeling indicated Icewine is in a high liquids vapor phase sweet spot “analogous to those encountered in other Tier 1 shale plays e.g. the Eagle Ford” in Texas.

Basinski told Petroleum News after the state’s 2015 lease sale that he had been with Burlington Resources and then with ConocoPhillips after that company acquired Burlington in 2005. He said he’d been working on shale since the mid-1980s and saw there might be a resource in Texas. The issue was to find a sweet spot and get it out of the ground, he said, with the idea that if you could drill into the kitchen, the source of the oil, it could be possible to put together a play.

Basinski said the situation is similar in Alaska where there is the largest field complex in North America — Prudhoe Bay — and none of the source rocks have ever been effectively drilled and stimulated with a horizontal well.

He said Burgundy, in partnership with 88 Energy, is chasing a vapor phase, where “you get a little bit deeper and where the oil is no longer oil in the reservoir, it’s actually a gas. But when you get it to the surface it becomes rich in liquids.” He compared the Icewine target to Eagle Ford but said a play on Alaska’s North Slope would have to be “significantly better” because it has “to be able to support the costs associated with it.”



PAUL BASINSKI

—KRISTEN NELSON

EXPLORATION & PRODUCTION

Conoco agrees to reduced road width

In response to local concerns on the North Slope, ConocoPhillips has agreed to change the design basis for its road upgrade in the Kuparuk River unit from a 35-foot road width to a 32-foot width, ConocoPhillips spokeswoman Natalie Lowman has told Petroleum News.

As previously reported in Petroleum News, the company wants to upgrade about 26 miles of roadway over a five-year period, primarily by increasing the road widths. The upgrades would apply to both main roads and drill site access roads. The width of the total road gravel footprint would be greater than the width of the road itself.

—ALAN BAILEY

A change of name for Aurora Exploration

Aurora Exploration LLC, the Cook Inlet gas producer, has changed its name to Amaroq Resources LLC, the company has announced.

The company was in the news a few months ago because of its purchase of the Nicolai Creek gas field, onshore the west side of Cook Inlet, from Aurora Gas, as part of the fallout from the Aurora Gas bankruptcy. Although having similar names, the companies are completely separate, with different management and different ownership.

Towards the end of 2017 there was a contentious Alaska Oil and Gas Conservation Commission case, in which the commission wanted to hike the surety bonding for the wells in the Nicolai Creek field. At that time, Aurora Exploration said that it intended to change its name, because of confusion and potential misunderstandings about any relationship with Aurora Gas.

“We are excited about the name change; there has been considerable confusion with regard to the Aurora name and the owners of Aurora Exploration felt it was time to rebrand the company,” said Aurora Exploration President and Chief Executive Scott Pfoff on April 4 when announcing the name change. “An Amaroq is a gigantic wolf in Inuit mythology and we respectfully use the name based upon our company’s focus on Alaska resources.”

Pfoff said that Amaroq Resources is continuing a coiled tubing program to boost gas production by cleaning out three wells in the Nicolai Creek field. The company is also trying to raise funds for drilling exploration wells in its Chedatna Lakes and North Alexander prospects on the west side of the Cook Inlet, he said.

—ALAN BAILEY

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OIL BILLS

House Resources in mid-February on a party-line vote.

Ryan told the committee that the legislation would add the ability to include deterrents when considering penalties, something the division can’t currently do. Existing language in statute says “but not punitive” which is removed in the bill. She said punitive is allowed in other environmental areas such as air or water violations — only for oil spill penalties is punitive not allowed.

Increase in penalties

The minimum civil penalty for illegal discharges of less than 18,000 gallons was established in 1976 and never raised. For an initial violation the minimum is \$500 (\$2,118 in 2018 equivalent) with \$1,000 proposed; the maximum was set at \$100,000 (\$423,581 would be the equiv-

The minimum civil penalty for illegal discharges of less than 18,000 gallons was established in 1976 and never raised.

alent) with \$200,000 proposed.

The real increase in this example, as in other areas of the bill, is for each day after the violation: The original was \$5,000 (\$21,179 in 2018 dollars); \$25,000 is proposed.

Civil penalties for crude oil spills of more than 18,000 gallons were set at a minimum for 420,000 or fewer gallons of \$8 per gallon in 1989 (\$15.64), with \$16 proposed; the maximum, for more than 420,000 gallons, was \$12.50 (\$24.44 in 2018 dollars), with \$25 proposed.

The bill also includes produced water as crude oil in calculating civil penalties. ●

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SUIT REJECTED

against protesters at the construction site.

The federal court also ordered British Columbia to pay the legal costs of the appeal.

Notley said the verdict was “another victory for our economy, another victory for our climate plan, (and) another victory for the pipeline.”

Opposition view

Alberta opposition leader Jason Kenney, of the United Conservative Party, said Notley was too hasty to claim outright victory.

“I think her expectation that one court decision will result in oil flowing is a triumph of hope over experience,” he said.

The B.C. government wasted no time effectively endorsing Kenney’s view, with Environment Minister George Heyman declaring his New Democratic Party administration will “continue to explore other legal ways to defend the (environmental and First Nations) interests of British Columbia against this unnecessary project.”

B.C. Premier John Horgan had asked for a legal ruling that would affirm his province’s right to restrict increased volumes of crude from crossing the province and being shipped from the B.C. coast to Asia.

The City of Burnaby announced it will attempt to take its case to the Supreme Court of Canada, a tactic Notley said was “showboating” by Mayor Derek Corrigan.

“If I were a taxpayer in Burnaby, regardless of my position on the pipeline, I would be very irritated to see my mayor throwing good money after bad,” Notley said, speculating that Corrigan has likely been told by lawyers he has no hope of success.

There are a number of pending legal decisions on the pipeline, including a review by the Federal Court of Appeal of the federal cabinet decision to approve the pipeline and a review by the British Columbia court of appeal of the decision by the province’s former government to endorse the pipeline.

Bottlenecks

While the legal battles continue, the oil sands industry in Alberta is struggling with pipeline bottlenecks and a shortage of rail capacity at a time when Canada’s oil output is forecast to grow by 290,000 bpd this year to 4.95 million bpd.

Cenovus Energy, one of the leading producers, said it cut February output by 6 percent from January’s 378,000 bpd, while Syncrude Canada has trimmed its volumes and Canadian Natural Resources has delayed the ramp up of some heavy oil wells.

Cenovus Chief Executive Officer Alex Pourbaix said his company was “taking steps to respond to a critical shortage of export pipeline capacity in Western Canada that is beyond our control and is having a negative impact on our industry and the broader Canadian economy.”

Several analysts say the pipeline constraints and rail backlogs could also further weaken prices for Canada’s heavy crudes, which are expected to trail West Texas Intermediate prices by US\$21.75 per barrel this year and US\$19 in 2019.

However, relief is on the horizon, starting with Enbridge’s plan to replace its aging Line 3 pipeline from Alberta to Superior, Wisconsin, at a cost of C\$8.2 billion and doubling capacity to 760,000 bpd. The project has a scheduled in-ser-

vice date of late 2019.

Also plodding along after more than a decade of legal and political battles is TransCanada’s Keystone XL system to deliver 830,000 bpd of diluted bitumen to the U.S. Gulf Coast refinery hub. The company said it now has 500,000 bpd of shipping commitments, allowing it to start construction in 2019.

Despite the transportation and price setbacks, the Paris-based International Energy Agency said Canadian oil production has risen faster than most countries over the last three years, mostly from the commissioning of oil sands projects, setting Canada up to overhaul Iraq as the world’s fourth largest producer after the United States, Russia and Saudi Arabia. ●

Contact Gary Park through publisher@petroleumnews.com

EXPLORATION & PRODUCTION

US drilling rig count down by 2 to 993

The number of rigs drilling for oil and natural gas in the U.S. decreased by two the week ending March 30 to 993.

That exceeds the 824 rigs that were active this time a year ago.

Houston oilfield services company Baker Hughes reported that 797 rigs drilled for oil (down seven from the previous week) and 194 for gas (up four). Two were listed as miscellaneous (up one).

Among major oil- and gas-producing states, Pennsylvania increased by two rigs and Louisiana and Oklahoma each gained one.

Texas lost three rigs and New Mexico, Ohio and West Virginia each decreased by one.

Alaska, Arkansas, California, Colorado, North Dakota, Utah and Wyoming were unchanged.

The U.S. rig count peaked at 4,530 in 1981. It bottomed out in May of 2016 at 404.

—ASSOCIATED PRESS

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OIL SEARCH

301 in Peterson Towers, Oil Search leased an adjoining suite and per Wulff, “may also take some space on the second floor.”

When asked about planned seismic activities on the acreage the company now operates, Wulff said, “We aren’t undertaking seismic acquisition activities. We are compiling our data base at the current time and will undertake some reprocessing to get a consistent data platform. We may undertake activity next season but this will require confirmation with our partners.”

Where they will drill the question

Initially Armstrong and Oil Search planned to drill two appraisal wells, the Pikka 2 and Pikka 2A sidetrack, at the southern end of the Pikka unit in the winter drilling season that is wrapping up now, tying in their giant Nanushuk oil discoveries to the north with those in the south at the Horseshoe wildcat drilled in 2017 by then-operator Armstrong.

Pikka 2 and 2A drilling was to be conducted east of the village of Nuiqsut from surface acreage owned by Kuukpik Corp., the village corporation for Nuiqsut.

But those plans were cancelled because, among other things, Armstrong and Oil Search secured an information sharing agreement with ConocoPhillips on its Putu 2 well and sidetrack, drilled this winter a short distance from Pikka 2 and 2A.

So even though Wulff, whose official title in Alaska is executive general manager, told PN the company planned to drill next winter it is possible Oil Search will not drill the planned Pikka 2 wells, but rather decide to drill at some or

all of the following locations:

1. North of Putu; depending on those well results.
2. In the Qugruk No. 7 Pikka unit well area, a well drilled in 2014 that has been the hole Armstrong and Repsol (former operator of the acreage) was most concerned about keeping confidential.
3. North of ConocoPhillips’ Stony Hill well, which PN sources say is being production tested now. A Willow lookalike that reportedly holds at least 300 million barrels of recoverable oil in the Nanushuk formation, Stony Hill is almost directly across the Colville River in NPR-A from Armstrong’s successful 2017 wildcat, Horseshoe.

There are many other possibilities, but those are PN’s guesses with the information currently available.

Development plans

Armstrong expected the first development in the Pikka unit to be online no later than 2022 and to produce about 120,000 barrels of oil per day.

The plan under Armstrong had been to develop the project, a multibillion-dollar investment, through the drilling of about 146 wells from three drill sites on the east side of the Colville River.

The major components of the project would include the construction of about 35 miles of pipeline, 25 miles of road and a central processing facility.

The development would primarily target the Nanushuk formation but was also expected to result in production from a reservoir found in Alpine C sands.

Second option exercisable until June 2019

Oil Search told analysts Nov. 1 that it paid \$400 million for a 25.5 percent interest in the Pikka unit and adjacent exploration acreage and 37.5 percent interest in the

Horseshoe block and the Hue shale.

The company has the option, exercisable until June 30, 2019, to purchase all of Armstrong and its minority partner’s remaining interest in the Pikka unit and the Horseshoe block (another 25.5 percent and 37.5 percent respectively) as well as an additional 25.5 percent interest in adjacent exploration acreage and 37.5 percent in the Hue shale.

Repsol continues to hold as much as a 49 percent interest in Pikka and Horseshoe acreage, depending on the lease.

Armstrong’s success with revolutionizing exploration in northern Alaska has opened up more possibilities in previously unexplored or barely explored parts of Arctic Alaska, essentially launching a rethink of the potential for finding oil and gas in the Brookian sequence, the youngest of the major petroleum bearing rock sequences.

In a presentation at the Alaska Geological Society’s annual technical conference in 2016, U.S. Geological Survey geologist Dave Houseknecht, an established expert on Arctic Alaska petroleum systems, presented compelling evidence for looking into this new play, which the agency is now doing with a reassessment of the oil reserves in the National Petroleum Reserve-Alaska.

Essentially, while rocks of middle Cretaceous age, including the Nanushuk formation, along the Beaufort Sea coast west of the central North Slope, have tended to play second fiddle to plays involving some of the older rocks of the region, the new discovery has revealed the possibility of major undiscovered oil resources along a fairway extending perhaps 100 miles west from that recent discovery, he suggested.

Houseknecht characterized the Armstrong/Repsol discovery, with up to 150 feet of net pay sandstone in a 650-foot oil column, as “pretty astounding.” ●

Contact Kay Cashman at publisher@petroleumnews.com

Petroleum
NEWS

Oil Patch Bits

Lynden Air Cargo recognized for humanitarian efforts

As reported in the Plane Talk Newsletter Spring 2018 edition Lynden Air Cargo received the Governor’s North Star Award for its long history of assisting in humanitarian relief and environmental disasters worldwide.

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our employees in the air and on the ground pride themselves on providing safe and reliable service while opening new international markets and opportunities to Alaska. We are also proud of our service in assisting victims of natural disasters and our environmental cleanup response. Wherever Lynden Air Cargo flies, it proudly represents Lynden, but also its home state of Alaska.”

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NEW VESSELS

Mike Day, SERVS manager of the marine transition, said during a media tour of the three newly arrived vessels.

Two tugs and response barge

The vessels that are now in Valdez consist of the Commander, a large, very powerful tug designed for escorting oil tankers to and from the terminal; the Elrington, a smaller general purpose tug; and the OSRB-1, a 400-foot oil spill response barge. Edison Chouest has built these vessels specifically for the Valdez terminal marine services. In total the company is building five new tugs, purpose designed for escorting tankers; four smaller general purpose tugs; and four new barges, purpose built for oil spill response. The company is also going to bring one of its existing general purpose tugs to Valdez and is taking over an existing response barge, equipped to support nearshore spill response operations. Another existing barge is being converted for lightering use.

Day said that two more of the new tugs are on their way and should arrive in about a couple of weeks time. All of the vessels are expected to arrive by the middle of June — everything is on schedule, he said.

The marine services

Alyeska's Ship Escort/Response Vessel System, known as SERVS, manages the marine services, which provide tug assistance for tankers berthing at the Valdez Marine Terminal, while supporting oil spill prevention and contingency plans for the terminal and the tanker operations. The marine services form a vital component of the transportation arrangements for shipping crude oil from Alaska.

Powerful escort tugs are tethered to the sterns of laden tankers departing the Valdez terminal and crossing the more nearshore area of the neighboring Prince William Sound. In the event of a problem a tug can stop a tanker from moving or otherwise assist the vessel. And two tugs always escort tankers across Prince William Sound.

Andres Morales, SERVS director, explained that a powerful tug also stands sentinel at the Hinchinbrook Entrance to Prince William Sound until a tanker is safely 70 miles out into the Gulf of Alaska. And SERVS stages some tugs, response barges and spill response equipment throughout Prince William Sound, as a precaution against the possibility of a tanker running into difficulties. Equipment staged includes a lightering barge, for offloading oil from a tanker, if necessary. SERVS also has more than 400 local fishing vessels under contract, as vessels of opportunity to assist with oil skimming activities, should need arise. And response arrangements must be capable of recovering up to 300,000 barrels of oil in the first 72 hours of a response, Morales said.

Exercises and training

To date the new Commander escort tug has participated in 28 tanker tether exercises, all of which were completed successfully, Day said. Six of the 10 escort tug captains have been involved in these exercises. Two tanker towing exercises have also been successfully completed. The Elrington general purpose tug has conducted four barge deployment exercises, towing the response barge, he said.

Day emphasized that the Edison Chouest crew members are very experienced mariners, with extensive towing experience. However, since July of last year SERVS has been conducting crew



Edison Chouest Offshore's new Challenger tanker escort tug in Port Valdez.



The Elrington general purpose tug moored alongside the OSRB-1 response barge at the SERVS dock in Valdez.



The high-tech bridge of the Commander escort tug has electronic controls that enable the huge vessel to be precisely maneuvered, together with display screens that show maps and other information.

training and education specific to spill prevention and response activities in the Prince William Sound area, and to the characteristics and history of the region. Training includes the specific procedures involved in escorting tankers using the marine terminal. An Edison Chouest tug bridge simulator allows crews to practice various tug operations.

Moreover, every Edison Chouest captain has now spent at least a week in Valdez on board a Crowley escort tug, experiencing tanker escort operations in rough winter weather, Day said.

Custom designs

The new escort tugs have been specifically designed for SERVS. They have twin engines with a total power of 12,300 horsepower, together with an azimuthal drive system that can swivel around 360 degrees, hence enabling a high maneuverability along with high power output. The tug design involves a skeg, a form of keel, at the front, that can provide a resistive

force if the tug is turned away from the direction of travel of the tanker that the tug is hitched to, Morales said.

The new tugs are more powerful than the existing tugs and are maneuverable over a wider range of speeds. Day also commented that the new escort tugs have winch systems at both bow and stern, thus enabling the tugs to perform towing duties as well as acting as tanker escorts. The winches are of a constant tension design and can be adjusted to the required tension level.

Response barge

The new oil spill response barge, specifically designed for the Valdez and Prince William Sound arena, has a long, flat deck, with boom reels at one end, to enable twin lengths of oil containment boom to be inflated on deck, before being slid out into the water. A fishing vessel attaches to the far end of the boom and pulls the boom through the water alongside the barge, to bend the boom into a V shape, with the open end towards the barge's direction of travel. One of the twin lengths of boom can go alongside each side of the barge. Then as a tug tows the barge though an oil slick, oil will be encapsulated by the boom. The boom is of a type that will continue to trap the oil, without spillage, while the barge is in motion, Day said.

Cranes on either side of the barge will lower an oil skimmer into the apex of each boom V, to remove oil from the water and transfer it into tanks inside the barge. Oil can subsequently be offloaded through a pipe system towards the rear of the barge.

More efficient skimmers

The Crucial Inc. skimmers on the new barges use rotating disks of oil attracting material and are much more efficient than the old skimmers on the existing barges,

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TINMIAQ WELL

In 2017 the company announced a discovery of some 300 million barrels of recoverable oil at Willow.

The company has facilities under construction at the Greater Mooses

Tooth 1 pad in NPR-A and plans first oil at the end of the year. Permitting is underway for the Greater Mooses Tooth 2 pad.

—KRISTEN NELSON

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ALAN BAILEY

ALAN BAILEY

ALAN BAILEY

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BP FINANCIALS

The company said its Alaska business is broken out as a requirement of the Prudhoe Bay Royalty Trust, which is traded on the New York Stock Exchange. The BPXA numbers, however, do not take into account the company's costs for the trans-Alaska oil pipeline, the marine shipping business and the development of Alaska LNG.

"All in all, our entire Alaska regional businesses did make a profit of \$118 million in 2017, which is lower than the 20-F reports for the BPXA business by itself," Weiss said. "We also had positive cash flow for the year at about \$619 million following two straight years of losses."

Alaska activities

BP had four vessels supporting operations in Alaska in 2017 at year end, the BP said in its Annual Report and Form 20-F 2017.

In a summary of company activities included in its filing the company said that for the past three years it has "successfully combatted decline at Prudhoe Bay through wellwork and improved operating field efficiencies, with production being largely maintained."

On the facilities side, BP said that at the nine fields it operates in the Greater Prudhoe Bay area, 2017 infra-

structure renewal activities "included compressor replacements, fire and gas system upgrades, safety system upgrades, pipeline renewal, facility piping upgrades and facility-siting projects."

The company also owns significant interests in eight additional North Slope producing fields operated by others, and an interest in the non-operating Liberty prospect.

BP Alaska LNG LLC executed a cooperation agreement with the Alaska Gasline Development Corp. in January 2017 "detailing BPAL's commitment to helping the state further develop Alaska LNG. This agreement has been extended to 30 June 2018," the company said.

Prudhoe, TAPS shares

BP holds a 26 percent working interest share and is the operator at Prudhoe Bay. The company said that since production began at Prudhoe in 1977, 12.5 billion barrels of oil have been recovered, compared to an original recovery estimate of 9.6 billion barrels. BP said an estimated 3 billion additional barrels produced so far have been through "innovations in oilfield technology." Prudhoe remains the third largest oil field in the United States on a proved reserved basis, the company said.

BP Pipelines (Alaska) Inc. owns a 49 percent interest in the trans-Alaska pipeline system, which transports crude oil from the North Slope to Valdez.

Unocal, with a 1.37 percent ownership in TAPS, gave

notice in April 2012 that it intended to withdraw as an owner. "The remaining owners and Unocal have not yet reached agreement regarding the terms for the transfer of Unocal's interest in TAPS," BP said.

BP said the parties involved in TAPS tariff matters at the Federal Energy Regulatory Commission and the Regulatory Commission of Alaska reached an agreement to settle challenges involving TAPS interstate rates for 2009-15 and to establish a mechanism for calculating interstate rate ceilings for TAPS from 2016 through 2021, "as well as subsequent years unless otherwise terminated."

BP said the agreement resolves all challenges at the RCA for intrastate rates from 2008 to the present and establishes intrastate rate ceilings through 30 June 2019.

RCA approval was granted in January 2018 and FERC approval in February, BP said.

"Once all appeal periods have run, if the agreements are approved, the parties will proceed with implementing the settlement agreements, including issuing tariff refunds. Implementation will result in production tax and royalty payments to the State of Alaska while releasing some previously accrued liability provisions within BP Alaska," the company said.

—KRISTEN NELSON

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The deck of the new OSRB-1 response barge is long enough to allow the inflation of complete twin lengths of boom, before sliding the boom into the water.

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NEW VESSELS

Day said. The result will be a higher proportion of oil relative to water transferred from the skimmers into barge tanks, and hence a higher level of recovered oil storage efficiency. Moreover, the new barges have systems that, subject to appropriate permitting, allow water to be decanted from under the oil in the tanks and discharged back in front of the boom at the sides of the vessel.

Each barge will have a radar system and infrared cameras that can detect oil on water, to help steer the barge through an oil slick. And the barge command module is perched high above one end of the deck, for maximum visibility.

The barges also have systems for running salt water across their massive decks, to clear any buildup of snow in winter weather. And the vessels have been designed to have decks almost clear of equipment and piping, with most equipment fitted internally in the hull, an arrangement that maximizes personnel safety. The barges and tugs have standardized designs, for maximum efficiency.

By comparison, the existing barges are

Each barge will have a radar system and infrared cameras that can detect oil on water, to help steer the barge through an oil slick. And the barge command module is perched high above one end of the deck, for maximum visibility.

converted transportation barges, as much as 40 years old, with much equipment fitted on the decks and little standardization between the vessels.

Given that some escort tugs and barges will need to be stationed at remote locations for extended periods of time, the new vessels have comfortable crew quarters, with fully equipped galleys and refrigerated food storage.

Day emphasized that the takeover of the marine services by Edison Chouest is not a reflection of the service that Crowley has been providing. Crowley has been conducting excellent, professional operations for many years, he said. ●

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LNG OPPONENTS

projects, said many aboriginal communities view LNG as an opportunity to improve socio-economic conditions in aboriginal communities through jobs and training.

"Too many people have been told that First Nations oppose LNG development," she said. "That's not true."

One example of what First Nations might be bypassing in the form of economic benefits came in late March when the Canadian government provided C\$1.6 billion for a project to bring reliable power to 16 remote communities in northwestern Ontario in what is billed as Ontario's largest indigenous-led infrastructure project.

Federal Minister of Indigenous Services Jane Philpott said the hydro transmission project will bring dual benefits to 14,000 people: reliable power supplies and the chance to showcase a First Nations-led business.

—GARY PARK

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