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GENERAL INTEREST

10 BP working on multiple options to stop gulf oil spill

BP PLC executives planned to contain the oil spill in the Gulf of Mexico using a small containment structure, which they call a top hat. At presstime last week, the top hat, measuring 4 ft in diameter and 5 ft tall, was on the seabed. A BP spokesman estimated the containment system might be operational by May 14-15.

12 Senators grill industry witnesses at oil spill hearings

Testifying May 11 before two US Senate committees, top executives from BP America Inc., Transocean Ltd., and Halliburton Co. said that full investigations would be required to determine the cause behind the blowout of the Macondo well and subsequent explosion and fire on the Deepwater Horizon semisubmersible rig in the Gulf of Mexico.

15 Oil firms across industry help with oil spill response

Many oil companies offered technical expertise and equipment to BP PLC and the oil spill response team in a cooperative effort to stop the flow from a leaking deepwater well and help mitigate environmental damages.

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GENERAL INTEREST QUICK TAKES

Industry forms forces to address offshore issues

The US oil and gas industry formed two task forces to address short-term and long-term issues involving offshore equipment and operating practices in the wake of the Gulf of Mexico crude oil spill, the American Petroleum Institute announced.

"This tragic incident requires that we redouble our commitment to continually improve safety and response practices," API Pres. Jack N. Gerard said. "Our industry accepts that challenge. We owe it to the workers who were lost and to the others, particularly along the Gulf Coast, bearing the burden of the accident. We also owe it to the nation that has placed its trust in us to responsibly develop oil and gas off its coasts."

Gerard said the offshore equipment task force will bring together equipment manufacturers, industry subsea equipment specialists, and deepwater contractors to focus on maintenance, response, and testing of blowout prevention equipment and remotely operated vehicles. The offshore operating procedures task force, meanwhile, will use offshore operators and service companies' expertise to strengthen practices related to drilling and completing deepwater wells. API looks forward to government participation on both task forces, Gerard said.

"The ultimate goal of these task forces is to improve safety and environmental performance by learning from any gaps identified from this tragedy," he said. In the very near term, they will bring relevant experts together to identify and further reduce risks of offshore operations, while working in conjunction with SWAT teams that BP PLC is assembling and help ensure that all response efforts are coordinated.

Gerard said in the longer run, the task forces will share lessons learned from investigations of the Deepwater Horizon explosion and fire and subsequent oil spill, and update API operating standards and recommended practices on an ongoing basis.

BLM seeks comments on Colorado development

The US Bureau of Land Management is seeking public comments on Antero Resources Corp.'s proposal to develop natural gas at a site 6 miles south of New Castle in western Colorado.

The Denver independent has proposed drilling as many as 284 wells from 16 pads over 5 years beginning this summer under its North Castle Springs master development plan, according to BLM's Colorado River Valley field office in Silt. The US Department of the Interior agency said it is preparing an environmental assessment.

BLM said Antero also proposed construction of as much as 10.6 miles of new and upgraded access roads and 14.1 miles of new and replacement pipelines. The area proposed for development covers about 6,000 acres of federal land, with primary access provided by Garfield County Roads 311 and 335.

Comments on the proposed development will be accepted through May 31, BLM said.

Parnell wants Alaska to join permit effort

Alaska Gov. Sean Parnell (R) asked that the state be allowed to participate in ConocoPhillips's administrative appeal of a denied permit in the National Petroleum Reserve-Alaska.

The US Army Corps of Engineers denied the permit in early February, saying other technologies should be considered in developing the CD-5 project west of the company's producing Alpine field near Prudhoe Bay.

Parnell said the dispute involves ConocoPhillips's proposal for a vehicle and pipeline bridge across the Colville River's Nigliq Channel, which the Arctic Slope Regional Corp., the North Slope Borough, the Native Village of Nuiqsut, the City of Nuiqsut, and the state strongly support. The Army Corps of Engineers would rather see horizontal direction drilling used instead.

The parties said this approach also poses risks including pipeline corrosion, sedimentation, and slugging, along with other potential problems associated with a buried pipeline in the geo-technically unique and environmentally sensitive Nigliq Channel. A bridge would have fewer potential adverse environmental consequences, they maintained.

Parnell said that under the Corps' regulations, the opinions of the state, both as a permitting agency with jurisdiction and as the Nigliq Channel's property owner, are entitled to deference.

EXPLORATION & DEVELOPMENT QUICK TAKES

ADMA-OPCO developing Umm Lulu oil field

Abu Dhabi Marine Operating Co. (ADMA-OPCO) is developing another offshore oil field that will produce at least 100,000 b/d at peak.

It has let a front-end engineering and design (FEED) contract to Fluor Corp. for second-phase development of Umm Lulu field about 30 km off Abu Dhabi.

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US INDUSTRY SCOREBOARD — 5/10

Latest week 4/23	4 wk. average	4 wł yea	k. avg. r ago ¹	Change, %		YTD average ¹	YTD avg. year ago¹	Change, %
Motor gasoline Distillate Jet fuel Residual Other products	9,211 3,571 1,371 492 4,063	8, 3, 1, 3,	931 518 428 659 978	3.1 1.5 -4.0 -25.3 2.1		8,879 3,670 1,348 592 4,431	8,821 3,819 1,389 620 4,117	0.7 -3.9 -3.0 -4.5 7.6
TOTAL DEMAND	18,708	18,	541	1.0		18,920	18,766	0.8
Supply, 1,000 b/d								
Crude production NGL production ² Crude imports Product imports Other supply ³	5,476 2,095 9,434 2,660 1,821	5, 1, 9, 2, 1,	237 925 264 667 767	4.6 8.8 1.8 -0.3 3.1		5,480 2,111 8,887 2,630 1,832	5,235 1,872 9,402 3,009 1,661	4.7 12.8 -5.5 -12.6 10.3
TOTAL SUPPLY	21,486	20,	860	3.0	2	20,940	21,179	-1.1
Refining, 1,000 b/d								
Crude runs to stills Input to crude stills % utilization	14,763 15,209 86.2	14, 14,	.307 .549 32.3	3.2 4.5		14,085 14,425 81.6	14,168 14,470 81.9	-0.6 -0.3
Latest week 4/23 Stocks, 1,000 bbl	La W	test eek	Previo week	us ¹ Char	ıge	Same week year ago ¹	Change	Change, %
Crude oil Motor gasoline Distillate Jet fuel-kerosine Residual	35 223 15 4	7,820 3,685 1,820 4,177 4,885	355,857 224,925 148,883 42,567 44,386	7 1,96 5 -1,24 3 2,93 1 1,61 5 49	i3 .0 7 .6	374,653 212,612 144,105 40,188 36,282	-16,833 11,073 7,715 3,989 8,603	-4.5 5.2 5.4 9.9 23.7
Stock cover (days) ⁴				Chan	ge, '	%	Change,	%
Crude Motor gasoline Distillate Propane		24.2 24.3 42.5 38.4	24.4 24.6 41.6 31.2	4 -0. 5 -1. 5 2. 2 23.	.8 .2 .2 .1	26.2 23.5 39.1 45.8	-7.6 3.4 8.7 -16.2	
Futures prices ⁵ 4/30				Chan	ge		Change	%
Light sweet crude (\$/bb Natural gas, \$/MMbtu) (Ic	84.24 4.13	83.48 4.05	3 0.7 5 0.0	'6 18	48.48 3.46	35.76 0.67	73.8 19.4

¹Based on revised figures. ²Includes adjustments for fuel ethanol and motor gasoline blending components. ³Includes other hydrocarbons and alcohol, refinery processing gain, and unaccounted for crude oil. ⁴Stocks divided by average daily product supplied for the prior 4 weeks. ⁵Weekly average of daily closing futures prices. Sources: Energy Information Administration, Wall Street Journal

BAKER HUGHES INTERNATIONAL RIG COUNT: TOTAL WORLD / TOTAL ONSHORE / TOTAL OFFSHORE



Note: Monthly average count

BAKER HUGHES RIG COUNT: US / CANADA



12/19/08 1/2/09 1/16/09 1/30/09 2/13/09 2/27/09 12/18/09 1/1/10 1/15/10 1/29/10 2/12/10 2/26/10

The first phase is an early-production system for 24,000 b/d of oil.

The second phase will push total production to 105,000 b/d. It will involve six wellhead towers, production facilities, living quarters, infield subsea pipelines, and an export pipeline to Zirku Island in the Persian Gulf.

Fluor said the Umm Lulu project ties into ADMA-OPCO's Satah Al Razboot (SARB) development, which will produce 105,000 b/d and for which it also holds a feed contract.

The work covers design of offshore wellhead facilities, subsea and in-field pipelines, and onshore facilities including receiving, processing, storage, and support equipment.

Pioneer pursuing Eagle Ford joint venture

Pioneer Natural Resources Co., Dallas, said it is pursuing a joint venture in the South Texas Eagle Ford shale play and expects to reach agreement by midyear.

The company's latest completion, its fifth successful well in the shale, made an initial 14.1 MMcfd of gas and 255 b/d of condensate with 5,600 psi wellhead flowing pressure on a $^{24}/_{64}$ -in. choke. Gas is 1,200 btu/Mcf.

The Chesnutt Gas Unit-1 in Karnes County had a 12-stage frac in a 4,100-ft lateral at 13,300 ft true vertical depth. Production is to start in this year's third quarter after completion of a Pioneer-operated condensate separation facility.

Pioneer has identified 1,750 potential development locations on its 310,000 acres, 70% of which are in the play's condensate window. It estimated the play's gross resource potential at more than 11 tcf of gas equivalent.

Pioneer has more than 2,000 sq miles of 3D seismic data, logs from more than 150 operated wells, proprietary core samples, and microseismic results.

It has two rigs drilling horizontal wells in Karnes and Dewitt counties and one well awaiting completion. It plans to hike activity to six or seven rigs by yearend, ten rigs by the end of 2011, and 14 rigs by the end of 2012.

Sinochem further developing Colombia's Capella

Sinochem Corp. and Canacol Energy Ltd., Calgary, will spend \$42 million in 2010 delineating and developing Capella heavy oil field on the Ombu block in Colombia's Caguan-Putumayo basin.

Aside from developing Capella, in which it holds 10% interest, Canacol plans to explore two adjacent contract areas awarded in 2009 in which it has 100% interest. Total acreage exceeds 1.2 million acres.

Canacol, which discovered Capella in July 2008, has drilled six more successful wells in 2008-09. Shooting 185 sq km of 3D seismic at Ombu started in March.

Romero-A1 well, spud Apr. 28 and projected to Mirador at 3,250 ft, is the first of seven wells Canacol will drill at Capella in 2010. The next well, Capella F-10H, will be the field's first horizontal penetration.

The 2010 work program includes drilling four delineation

wells and three development wells, including Romero A1, shooting 3D seismic, starting a steam injection pilot at one well, building a 2,000-b/d early production facility and laying flow lines, upgrading roads and bridges, and drilling a water disposal well.

South Australia strat traps yielding wet gas

Drillsearch Energy Ltd., Sydney, launched an extended production test of the 2008 Brownlow wet gas discovery and plans to similarly test the Canunda wet gas discovery 11 km north of Brownlow in the Cooper basin of South Australia.

After a period at 10 MMcfd with 120 b/d of condensate on a 24/64-in. choke, the choke was opened to 1 in. for a rate of 18 MMcfd from Permian mid-Patchawarra.

The well is in PEL 106, 2 km north of the Middleton wet gas discovery, and 55 km northwest of Moomba, where the condensate will be shipped.

Drillsearch said Brownlow has the potential to be a large stratigraphic trap with three-way dip closure. Beach Energy Ltd., operator of the PEL 106 farmin block with 50% interest, drilled Brownlow as part of farmout obligations now fulfilled.

Drillsearch and Beach hold a large position in a western flank wet gas fairway and have indentified more than 20 prospects on stratigraphic traps that represent a combined best case prospective resource of as much as 200 bcf of sales gas and 8 million bbl of condensate. They plan more drilling as soon as flooding subsides and weather permits.

OMV finds gas at Latif North in Pakistan

OMV AG has made a natural gas discovery with its Latif North-1 well on the Latif exploration license in Pakistan's Sindh province.

The well tested at 44.7 MMscfd of gas from Cretaceous Lower Goru at 3,350 m. It is the best-performing Latif well to date, OMV said.

Latif North-1 is 3 km north of Latif gas field, which is producing a combined 29 MMscfd of gas from the Latif-1 discovery well drilled in 2007 and Latif-2 drilled in 2008. The gas is processed at the OMV-operated Kadanwari processing plant.

Latif North-1 test results indicate a substantial increase of recoverable gas reserves, OMF said. Based on this encouraging result, it said, the field development plan will include the drilling of more wells.

OMV operates more than 525 MMscfd of gas production in Pakistan, of which its net share is 101 MMscfd. It operates Sawan, Miano, Tajjal, and Latif fields and the Sawan and Kadanwari processing plants.

DRILLING & PRODUCTION QUICK TAKES

Marathon starts oil flow from Volund tieback

Marathon Oil Corp. has started oil production from Volund field in the North Sea off Norway.

Volund, in Block 24/9, is a subsea tieback to the floating

NEWSLETTER

production, storage, and offloading vessel at Alveheim field 8 km north. Volund will ramp up to 10,000 b/d until mid-2010, after which it is guaranteed 25,000 b/d of production capacity on the Alvheim FPSO in PL150.

Volund is expected to reach 25,000 b/d with completion in the third quarter of 2010 of two more producing wells now being drilled.

Marathon is Volund operator with 65% working interest, and Lundin Petroleum AB, Stockholm, has 35%. Marathon also operates Alvheim, in which Lundin's interest is 15%.

Development of the Greater Alvheim area continues with Phase 2 drilling at Alvheim commencing later this year and the likely development of the Marihone and Viper discoveries made in 2009, Lundin said. Objective is to keep the Alvheim FPSO at capacity for the foreseeable future.

BPTT to spend \$600 million on gas production

BP Trinidad & Tobago LLC (BPTT) said it will spend \$600 million on a project to produce natural gas from its Serrette platform on the northern section of its Columbus basin acreage.

In late April, BPTT's Serrette platform was installed in 278 ft of water off the east coast of Trinidad and Tobago about 51 km north of its Mango development, which is thought to contain more than 3 tcf of gas.

The platform represents the first development in the northern area of BPTT's Columbus basin acreage and is equipped for future development opportunities in the area.

Serrette is the company's 13th offshore production platform and the fifth of its kind, designed and constructed in Trinidad and Tobago.

The Serrette project was sanctioned in May 2009, has a design capacity of 1 bcfd of gas, and will deliver a peak production of 500 MMscfd. The platform will be a normally unmanned installation, much like its predecessors, and will tie into the Cassia B platform via a preinstalled connection at the Mango platform.

Five development wells are expected to be drilled, and the gas will go to BPTT's national grid and LNG operations. Drilling is expected to commence in the fourth quarter, and production is planned for the first quarter of 2011.

Fluor-Summit based in Trinidad was responsible for the engineering design and the platform was built by the Trinidad Offshore Fabricators Co. (TOFCO) in La Brea, Trinidad.

The jacket and topsides were installed by Heerema Marine Contractors' "HLV Balder." The topsides weighed 1,081 tonnes while the jacket weighed 1,943 tonnes.

BPTT is the largest shareholder in Atlantic LNG, which is the largest exporter of LNG to the US.

ConocoPhillips withdraws from Shah project

ConocoPhillips has withdrawn from another large venture in the Middle East, both of which it said were under review when it announced a strategic trimming of its global operations last November (OGJ, Nov. 16, 2009, p. 68).

It said on Apr. 28 that it would pull out of the joint venture

it entered last July with Abu Dhabi National Oil Co. to develop sour gas reserves in giant Shah field 180 km southwest of Abu Dhabi City.

Earlier, it withdrew from a project with Saudi Aramco to build a 400,000-b/d export refinery at Yanbu, Saudi Arabia (OGJ Online, Apr. 21, 2010).

In the Shah project, ConocoPhillips, 40%, and ADNOC, 60%, formed a company to drill 20 wells and build infrastructure for production of about 1 bscfd of raw gas yielding 1.6 million tonnes/year of NGL, 30,000-40,000 b/d of condesnate, 3.4 million tonnes/year of sulfur, and 500-600 MMscfd of dry gas. Costs were estimated as high as \$10 billion (OGJ, Nov. 16, 2009, p. 33).

The dry gas was to be used in domestic markets or reinjection.

"The Shah gas field will be a world-class project that will develop a key resource for Abu Dhabi and the region, and it was a difficult decision not to participate in a project of this importance," said Ryan Lance, ConocoPhillips senior vice-president, exploration and production international. "We value our relationship with ADNOC and will continue to look for opportunities to work together in the future."

PROCESSING QUICK TAKES

Abu Dhabi Gas awards another Shah contract

Abu Dhabi Gas Development Co. Ltd. awarded a \$1.5 billion engineering, procurement, construction, and precommissioning contract to Samsung Engineering, Seoul, for the gas complex in the 1-bcfd Shah sour-gas development about 112 miles southwest of Abu Dhabi. Completion targets August 2013.

Abu Dhabi Gas Development also selected Samsung Engineering as interface manager and coordinator of the overall \$10 billion Shah gas project.

Earlier this week, ConocoPhillips, which held a 40% interest in the project, announced it was withdrawing from the Shah project (OGJ Online, Apr. 28, 2010).

The project will develop onshore sour gas and condensate reservoirs whose first discovery was in 1966.

Original reserves reach 500-600 million bbl of 30° gravity oil in Cretaceous carbonates at 8,000 ft. The gas-condensate is in the deeper Jurassic Arab formation (OGJ Online, July 10, 2009; OGJ, Aug. 18, 2008, p. 44).

Abu Dhabi Gas Development is one of 15 companies under the aegis of Abu Dhabi National Oil Co. They cover from exploration, production, refining, and gas to petrochemicals.

Mideast ethane cracker starts up

Qatar Petroleum has started up a new ethane cracker at its Ras Laffan industrial site. It will feed the new Qatofin polyethylene plant at Mesaieed that started up in November 2009.

According to Total SA, QP's 22.2% partner in the venture through Total Petrochemicals, the Ras Laffan olefin cracker is the largest based on ethane in the world and can produce 1.3

million tons/year of ethylene. Also a partner in the project is Chevron Phillips Chemical Co.

Feed for the cracker comes from raw natural gas produced from North field. Produced methane feeds the large LNG plants at Ras Laffan; the separated ethane then flows to the new cracker.

Total holds interests in North field through the Dolphin and Qatargas I and II projects, according to the company.

Petrobras to sell refinery in Argentina

Petrobras Energia SA has approved terms of the sale of its small refinery in San Lorenzo, Argentina, to Oil Combustibles SA in a transaction valued at \$110 million.

The refinery has 37,600 b/d of crude capacity, 16,000 b/d of vacuum distillation, and 3,500 b/d of thermal capacity.

The deal covers the refinery, a river unit, and a marketing network including 360 service stations. The reported offer includes \$36 million for the physical assets and about \$74 million in inventories.

TRANSPORTATION QUICK TAKES

Oregon LNG project leaves the field

NorthernStar Natural Gas, Houston, announced May 4 it was suspending development of its Bradwood Landing LNG terminal near Astoria, Ore.

The terminal was to have sent up to 1.3 bcfd into Northwest US markets and was one of three LNG projects proposed for Oregon. Also part of the project was a 36.3-mile pipeline.

In a company announcement, NorthernStar Pres. Paul Soanes cited extended delays in the processing of state and federal permits and the "difficult investment environment." He said, "[The] challenging regulatory environment," in particular, "gives investors pause."

Development work on Bradwood Landing began nearly 6 years ago on the site of the former Bradwood lumber mill with a natural deepwater port on the Columbia River in Clatsop County. The US Coast Guard determined the Columbia River could be made suitable for LNG marine traffic in its decision of Apr. 24, 2009.

The project received approval from the US Federal Energy Regulatory Commission in September 2008 after 3½ years of "scientific and technical review," the company said. On Mar. 20, 2008, the Clatsop County Board of Commissioners approved Bradwood's consolidated land-use application.

Bradwood Landing's departure from the LNG terminal scene in Oregon leaves two other projects facing the same head winds of public opposition.

Oregon LNG would build and operate a terminal with berthing and three full-containment, 160,000-cu m tanks on the Skipanon Peninsula in Warrenton, Ore. With completion targeting early 2013, the terminal will operate as a tolling facility. Oregon Pipeline, an affiliate, plans a 120-mile pipeline connected to a hub in Molalla, Ore.

Jordan Cove Energy Project would build a terminal on an

undeveloped site within the Oregon International Port of Coos Bay that would have normal sendout of 1 bcfd and peak of 1.2 bcfd. Also on site would be storage capacity in two, 160,000-cu m full-containment tanks and NGL recovery capability.

SOCAR to double capacity at Kulevi port

State Oil Co. of the Azerbaijan Republic (SOCAR) will begin a major expansion of its oil export terminal at Kulevi on Georgia's Black Sea coastline, according to a senior executive of the firm.

The expansion is aimed at doubling the port's throughput capacity from the current 10 million tonnes/year to 20 million tpy, possibly by yearend 2011, according to Ilham Nasirov, the managing director for SOCAR of BTC-Azerbaijan.

Nasirov told a conference in Aktau, Kazakhstan's port city on the Caspian Sea, that the expansion includes a single-point mooring buoy to handle tankers as large as 120,000 dwt, new offshore pipelines, a pump station, a control room, and expansion of rail capacity.

Nazirov's announcement follows a report in November 2009 that SOCAR, after increasing the existing capacity for tankers, may begin shipping oil from its export terminal at Kulevi on Georgia's Black Sea coast in 2010.

"Tests are under way now and Kulevi terminal will be able to ship more than 80,000 tonnes of oil in each shipment on large tankers, beginning with crude from Tengiz oil field in Kazakhstan," according to one SOCAR official (OGJ, Nov. 24, 2009).

Nasirov's announcement also follows reports last month that Kulevi Seaport inaugurated negotiations with Chevron Corp. about handling the oil it produces in Kazakhstan.

"We are conducting intense negotiations with Chevron," said Jani Katamadze, manager of Kulevi Seaport. "If the negotiations end positively, Kazakh oil will be transported through the Kulevi oil terminal," said Katamadze, who declined to speculate on the amount of Chevron oil his port might handle.

However, Vagif Aliyev, the head of the SOCAR investment management department and chairman of the Cross Caspian's board, said in February that an oil trans-shipment contract had been signed by TengizChevroil and Cross Caspian.

Yamal LNG awards concept contract

Yamal LNG LLC has awarded a contract to CB&I Lummus for concept development services for the Yamal LNG integrated project to be completed in first-half 2011.

The project consists of the production, treatment, transportation, liquefaction, and shipping of natural gas and NGLs from South Tambey field on the Yamal Peninsula in northwestern Siberia. Reserves in South Tambey field are estimated at more than 1 trillion cu m (35.3 tcf).

CB&I's project scope includes concept development of the 15-16 million tonne/year LNG liquefaction plant, including LNG storage and loading, as well as arctic shipping and ice management, a gas transmission pipeline, central production for gas and condensate treatment, and associated well sites and gas gathering, said the announcement.

Knowing the path ahead

When the Deepwater Horizon semisubmersible rig exploded, caught fire, and then sank while on station at BP PLC's Macondo prospect in 4,993 ft of water 40 miles off Venice, La., triggering an oil leak estimated at 5,000 b/d mere days before the 2010 Offshore Technology Conference (OTC 2010) in Houston, it could not help but have some bearing on the conference's course. And it did.

A topical luncheon entitled 'The Challenges and Rewards in Operating in the World's Offshore Basins," which was to have addressed BP's Thunder Horse and Atlantis fields among other topics, was cancelled. So too was Cameron's annual OTC reception.

But the industry did not duck and cover. "We are coming together at a very sobering time for the offshore energy industry," said Susan Cunningham, OTC 2010 chairman and senior vice-president, exploration, at Noble Energy Inc. "Although we don't yet know what caused the accident, we know that this industry takes safety and environmental stewardship very seriously. That is why when we do learn how this occurred, I know that all of us in the offshore industry will work together to prevent this from happening again anywhere in the world," she said.

Silent moments

Moments of silence occurred in a variety of settings. While introducing Xizhao Yang, president and director of China Offshore Oil Engineering Co. Ltd., at a topical breakfast outlining development strategies for China's offshore segment, the moderator called for a moment of silence and emphasized the need for all in attendance to support both their colleagues in the offshore industry and the agencies which regulate it.

BP presented technical papers on both Thunder Horse and Atlantis, with Jackie Mutschler, vicepresident for research and technology, calling for a minute of silence in memory of the 11 who lost their lives and describing the process of presenting at OTC in light of such events as difficult.

The keynote speaker for the OTC awards luncheon, Noble Energy Chairman and Chief Executive Officer Charles Davidson said, "Today's reality is yesterday's impossibility. Our willingness to take on the 'impossible' has led to immense change and success. Believing that anything is possible is critical to that success." He cited US gas shale plays, Chevron Corp.'s Jack field in the lower tertiary Gulf of Mexico, and Israel's gas field discoveries of the past 18 months as examples of achievements that once seemed impossible.

Innovation buzz

Outside the meeting rooms and luncheons, however, on the convention floor, the overlying hum of activity was palpable. People were doing business and doing so with enthusiasm. Respect was always shown to those who had died and to the need to stem the flow of oil from the well, but even more pronounced on the part of those participating was the excitement they felt regarding the new products, techniques, tools, and methods they'd come to display.

Steel pipe manufacturers touted the virtues of their products in transporting oil and gas through deepwater environments that increasingly included not just long free-spans, rough seabed, and strong currents on the outside of the pipe, but sour, high-temperature, high-pressure product streams on the inside.

Coatings companies explained the innovations they'd made in impeding corrosion on all manner of offshore equipment and infrastructure, from ships' hulls, to platform legs, to piping, and cases holding tools and electronics. Elsewhere, all manner of other widgets from couplings to remote monitoring tools to lifeboats were on display, and between them all bottlenecks of attendees busily exploring it.

Attendance at OTC 2010 reached 72,900, surpassing the 2009 total of 67,700. The sold-out exhibition was the largest in 28 years, totaling more than 568,000 sq ft, up from 557,000 sq ft in 2009.

The root causes of the Deepwater Horizon accident must be investigated and identified if similar events in the future are to be avoided. But at the same time, it's important for the offshore industry as a whole to keep moving forward so that when the lessons of the current tragedy are finally known, it is in a position to implement them with vigor, dedication, and enthusiasm.

Judging by those at work during OTC 2010, the industry already knows this.



CHRISTOPHER E. SMITH Pipeline Editor

The regulatory response

You're seated at a restaurant table when your waiter accidentally stumbles and spills lasagna onto your favorite jacket. How do you respond?

If you're human, your first impulse probably is rage. If you're emotionally developed, you probably suppress the anger in order to attend to the immediate requirements of clean-up. Later, hopefully still holding anger in check, you'll work with the restaurant manager to assess damage to the jacket. If the manager has a proper sense of responsibility, he or she will clean or replace the garment and seek ways to prevent recurrence of the accident.

Do you demand that the manager fire a waiter who made a mistake? Do you want the restaurant to quit serving lasagna or start making the dish without tomato sauce? Answers depend on your maturity and sense of realism.

Model for response

A tragic oil spill in the Gulf of Mexico is massively different from spilled food, of course. The consequences are much more sweeping, much more serious. But responses to the imaginary lasagna spill offer a possibly useful model for responses to a regrettably real oil spill.

To the Deepwater Horizon semisubmersible's fatal explosion and horrible aftermath, a regulatory response is inevitable and appropriate. Everyone can imagine a recurrence of the disaster. Regulation and industry practice must shrink the risk.

The first step, to determine precisely what happened, is under way in legal depositions and congressional hearings. Possibilities fall into three categories: personnel error, mechanical failure, or manifestation of an unanticipated hazard.

Underlying the first two categories are two possible causes: negligence and complacency. To imminent regulation, the distinction is very important.

Negligence in a drilling operation is inexcusable. It's also improbable, especially when the drilling occurs far at sea in deep water. People who work in that environment understand better than anyone else the risks of what they do. Those risks are personal and potentially fatal. While recognition of risk can't eliminate mistakes, it nevertheless provides a powerful deterrent against carelessness. Self-preservation is more compelling than any regulation ever can be.

Complacency is another matter. Before the Deepwater Horizon accident, the offshore producing industry had a solid safety record. Yes, blowouts and spills occurred. But they were infrequent in relation to total activity and usually did little damage. Maybe time without a harsh reminder of what can happen dulled, in some places, the careful edge essential in hazardous work. If so, a painful new reminder is at hand. Regulation can help keep it ever in mind.

Assessments of what happened on the Macondo well will focus on people and equipment. But they should not ignore the possibility of a heretofore unknown peril lurking in the extreme dynamics of deep water. Maybe everyone and everything on the Deepwater Horizon worked correctly, and the accident occurred anyway. If so, the industry and its regulators need to learn more than they know now about deepwater operating conditions. And deepwater operations under way now need to proceed with greatly enhanced caution if they proceed at all.

Responses of Congress and regulators must navigate quickly but carefully through considerations such as these. Anger over an accidental and massive mess will be a strong undercurrent. The urge to inflict punishment and extract revenge will be strong. Amplifying the pressure will be the oil and gas industry's chronic and unfortunate unpopularity.

Context of need

Even worse, but maybe constructively in the long run, regulation will proceed in the context of America's ineluctable requirements for oil and gas. Much of the public has been tricked into construing this need as addiction rather than the economic reality that it is. Too much of it angrily repels any suggestion that America can't will itself away from hydrocarbon energy as long as hydrocarbons retain their overwhelming superiority of scale and cost.

The regulatory response to the gulf spill must not pretend otherwise. Suppressing anger, it must seek ways to respond to a real need, a need as potent as a taste for lasagna and far more important, while helping a vital industry address inescapable hazards.

GENERAL INTEREST

BP working on multiple options to stop gulf oil spill

Paula Dittrick

Senior Staff Writer

BP PLC executives planned to contain the oil spill in the Gulf of Mexico using a small containment structure, which they call a top hat.

At presstime last week, the top hat, measuring 4 ft in diameter and 5 ft tall, was on the seabed. A BP spokesman estimated the containment system might be operational by May 14-15.

Simultaneously, BP worked to stop the flow of oil from a deepwater well off Louisiana by plugging up the blowout preventer in 5,000 ft of water and then sealing the wellhead.

The number of federal scientists

and engineers working in command centers along the Gulf Coast escalated while US President Barack Obama sent Cabinet-level officials to talk with BP executives.

Speaking from Houston on May 12, Department of the Interior Secretary Ken Salazar said, "This is a vital national priority and we cannot and will not rest until BP has capped the well and controlled the spill."

Hundreds of technical experts and operating specialists from various companies and countries worked on multiple options in parallel at BP's Houston offices.

"We continue to fight this very aggressively," BP PLC Chief Executive Tony Hayward told reporters May 10 in Houston. "The learning from this will be very extensive."

As of May 13, BP said it spent \$450 million on spill response efforts at the ocean's surface, subsea containment efforts, relief well drilling, and payments to Louisiana, Alabama, Mississippi, and Florida.

BP and partners hired Transocean Ltd.'s semisubmersible rig, Deepwater Horizon, to drill the Macondo well on Mississippi Canyon Block 252. The Deepwater Horizon exploded Apr. 20, leaving 11 crew members missing and presumed dead. On Apr. 22, the Deepwater Horizon sank (OGJ, May 3, 2010, p. 31).

The oil and gas well is spilling an estimated 5,000 b/d. BP is the operator with 65% interest. Partners are Anadarko Petroleum Corp., 25%, and Mitsui Oil Exploration Co. Ltd., 10%.



Containment options

On May 9, BP set aside a large containment dome that it had hoped to place over a damaged, leaking riser on the seabed because gas hydrates built up in the dome, which then tried to float.

Engineers had hoped the 98-ton dome could capture an estimated

An oil spill containment chamber, called the "top hat," is loaded onto a vessel at Wild Well Control Inc. in Port Fourchon, La. US Coast Guard photo by Petty Officer 3rd Class Patrick Kelley.

85% of the leaking oil and gas, which then was to be pumped to a drillship on the surface (OGJ, May 10, 2010, p. 23).

"We learned primarily that there is a lot more gas involved in this leak than we had believed," Hayward said.

The idea behind the smaller top hat was to prevent the leaking oil and gas from contacting the seawater., which is 30° F. at 5,000 ft.

The top hat involves two possible options, one is the top hat collection device and the second is a riser insertion tube that might be inserted into the damaged Deepwater Horizon riser, said Doug Suttles, chief operating officer of BP Exploration & Production, from Roberta, La., on May 12.

The riser insertion tube would prevent leaking hydrocarbons from contacting seawater and forming hydrates, Suttles said.

All top hat-related equipment was being put in place while engineers and scientists determined the best option, Suttles said. Engineers believe the amount of sea water in the first, large containment dome contributed to the formation of more gas hydrates than had been anticipated.

The US Minerals Management Service approved the use of methanol in conjunction with the top hat to prevent the formation of hydrates. Warm seawater from the surface also is going to be pumped along the riser bringing the collected oil and gas to the surface.

"It will be a little trickier for us, but we will make it work,"

Kent Wells, BP senior vice-president of exploration and production, said on May 10 of the top hat method vs. the larger dome. "There are always some pros and cons to everything we try."

Wells said some pipes will be placed into the seafloor to help secure the top hat containment device.

Top kill technique

In what is known as a "top kill" or a "junk shot," BP planned to first plug the BOP by shooting various items including cut-up tires, ropes with knots, and golf balls into the internal workings of the BOP to seal it.

A pipe from the surface will be hooked to the BOP so that junk can be shot inside it.

"We can give this several shots," if needed, Wells said. "The No. 1 priority is to shut off the flow of oil."

Immediately upon plugging the inside of the BOP, BP plans to use existing choke and kill lines running along the BOP to send heavy fluid at high pressure into the wellhead to push the oil and gas back into the reservoir. Eventually, cement will be sent into the well to seal and permanently abandon the well.

In describing the technique to reporters, Wells noted many unknowns

exist. "We've never had a blowout before at 5,000 ft."

Previously, BP used remotely operated vehicles to retrieve the control pod from the BOP. The control pod's electronics are being refurbished to send electric signals to the choke and kill lines on the BOP stack. Wells said he expects the junk shot can be done within 2 weeks.

"Whatever we try, we want to make sure it's not going to make things worse," Wells said. "We really believe it's going to plug up the BOP. There are a lot of different steps to do. We will put whatever pressure it takes into the well," to stop the flow of oil and gas. Meanwhile, one relief well is being drilled, and a second relief well will be drilled as a backup to the first relief well in case the first relief well were to run into problems.

Drilling of the first relief well started May 2 and is expected to take up to 90 days. It had reached 9,000 ft of its total 18,000 ft as of May 10, Hayward said.

Drilling of the second relief well was scheduled to start on May 14.

In other spill response efforts, BP applied chemical dis-

persants on the subsea oil leaks to help break up the oil so that it can degrade before reaching the surface. Meanwhile, controlled burns are being done on open water to eliminate some of the oil slick before it reaches shore.

Skimming vessels and booms also are being used to prevent much of the oil from reaching shore. Airplanes are spraying chemical dispersants on oil after it reaches the water's surface.

The US Coast Guard on May 12 reported more than 517 vessels were involved in the cleanup response. More than 1.5 million ft of boom was deployed, and about 4 million gal of oily water has been recovered.

Teams had used about 436,250 gal of chemical dispersants to help degrade the spilled oil, and some 13,000 people were involved in the oil spill response.

Leaders of the National Park Ser-

vice and the National Wildlife Refuge system worked from command centers along the Gulf Coast to protect the shoreline.

Oil from the spill has been confirmed washing up on Alabama's Dauphin Island as well as on Chandeleur Islands, a chain of barrier islands off Louisiana.

USCG-MMS joint hearing

USCG and MMS called witnesses during a May 11-12 public hearing starting May 11 in Kenner, La. The hearing concerns a joint investigation by USCG and MMS to identify factors leading to the rig accident and subsequent oil spill.

USCG Comm. Adm. Thad W. Allen, MMS Director S. Elizabeth Birnbaum, Department of Homeland Security Secretary Janet Napolitano, and Interior Secretary Salazar signed an order convening the joint investigation, which is classified as a Coast Guard Marine Board of Investigation.

Hayward said the Marine Board issued a subpoena for the BOP from the seabed.

USCG and MMS share jurisdiction for the investigation of casualties occurring on the Outer Continental Shelf. Upon

C-130 sprays chemical dispersant on the Deepwater Horizon oil spill in the Gulf of Mexico. US Air Force photo by Tech. Sgt. Adrian Cadiz.

A US Air Force





Crewmen guide a containment system onto the deck as the ship prepares to depart. The system was designed to contain the oil discharge before it reached the surface. USCG photo by Petty Officer 3rd Class Patrick Kelley.

completion of the joint investigation, the team will issue a single report simultaneously to both agencies.

Other congressional hearings and investigations into the cause of the accident and spill are ongoing in Washington, DC (see related story, p. 26)

Salazar, Chu visit BP

At Obama's request, Salazar and Secretary of Energy Steven Chu met with BP executives in Houston on May 12.

Chu said, "Department of Energy scientists from the National Laboratories have been working with the operations experts at the BP Command center on ways to determine what is happening inside the BOP atop the damaged wellhead."

Engineers and scientists are using supercomputers to assist with imaging and sampling of the seafloor, measuring pressures in the BOP, and analyzing the riser structure and fluid flows.

Senators grill industry witnesses at oil spill hearings

Nick Snow

Washington Editor

Testifying May 11 before two US Senate committees, top executives from BP America Inc., Transocean Ltd., and Halliburton Co. said that full investigations would be required to determine the cause behind the blowout of the Macondo well and subsequent explosion and fire on the Deepwater Horizon semisubmersible rig in the Gulf of Mexico.

The Senate committees questioned BP America Chairman and Pres. LaMar McKay, Transocean Chief Executive Officer and Pres. Steven L. Newman, and Halliburton Global Business Lines Pres. Tim Probert.

Members of the two Senate committees, ignoring recommendations from witnesses and other US senators to not reach conclusions before investigations of are complete, asked in separate hearings if drilling mud being prematurely replaced with seawater in the wellbore before final cementing was complete may have led to the Apr. 20 rig accident and subsequent oil spill.

Other Energy and Natural Resources Committee and Environment and Public Works Committee members demanded assurances from well operator BP that it intends to pay all of the cleanup costs, and not just the \$75 million limit under federal law before asking to be reimbursed from the oil spill liability fund.

"We are looking at why the blowout preventer did not work because that was to be the fail-safe in case of an accident," McKay said. "The [BOP] is a 450-ton piece of equipment that sits on top of the wellhead during drilling operations. It contains valves that can be closed remotely if pressure causes fluids such as oil or natural gas to enter the well and threaten the drilling rig. By closing this valve, the drilling crew can regain control of the valve."

McKay noted that BOPs are used on virtually every oil and gas well that is drilled, and that they are designed with multiple layers of redundancy and are regularly tested. "All of us urgently want to understand how this vital piece of equipment failed and what measures are required to prevent this from ever happening again," McKay said.

Unusual difference

Newman said the explosion was unusual because it occurred after the well construction process was essentially completed. Drilling had been completed 3 days before and crews were taking steps leading up to setting a cement plug to temporarily seal that well, which BP would have opened later if it chose to put the well into operation.

"At this point, drilling mud was no longer being used as a means of reservoir pressure containment; the cement and the casing were the barriers controlling pressure from the reservoir," Newman said. "Indeed, at the time of the explosion, the rig crew, at the direction of the operator, was in the process of displacing drilling mud and replacing it with seawater," he said.

"For that reason, the one thing we do know is that on the evening of Apr. 20, there was a sudden, catastrophic failure of the cement, the casing, or both," Newman said. "Without a failure of one of those elements, the explosion could not have occurred. It is also clear that the drill crew had very little, if any, time to react. The initial indications of trouble and the subsequent explosions were almost instantaneous."

But Probert noted that while Halliburton, which BP hired for cementing and other services, had completed cementing of the well's ninth and final production string some 20 hr before the blowout, the final cement plug was not set because Transocean, the drilling contractor, displaced drilling fluid inside the riser with lighter sealer prior to the planned placement of the final cement plug, which consequently was not set.

That led Energy and Natural Resources Committee Chairman Jeff Bingaman (D-NM) to ask, in the morning hearing, if replacing drilling fluid with seawater is customary when a deepwater well is drilled. "It is," Probert replied. "It reduces the density and pressure downward on the hydrostatic head."

Several hours later, Environment and Public Works Committee member Tom Udall (D-NM) asked during that committee's hearing if the sequence at this well was different from normal. "It's not unusual to replace certain weight fluids with others. The investigation will determine if this procedure was valid. There are various ways to do cementing procedures," said McKay.

Part of process

"As part of the well abandonment process, the cementing has to be placed and the mud displaced from the riser," Newman added. "I don't have any basis for characterizing what happened as normal or abnormal. I'm not aware of any drivers that would dictate a particular order of these steps."

"I don't believe it was an unusual procedure," said Probert. "The process was consistent with the well plan, which was established. To the best of our knowledge, this process was conducted in this order on previous Gulf of Mexico wells."

In a second round of questions, Udall asked him if a final cement plug had been installed at a Timor Sea well off



Australia's coast which blew out in 2009. Probert said it was not, and the blowout occurred 5 months later.

That attracted the attention of Environment and Public Works Committee Chairwoman Barbara Boxer (D-Calif.), who asked if a final cement plug would have a difference in the Timor Sea or the Gulf of Mexico blowouts. "It's always good to have multiple barriers in place to protect the wellbore, and the final cementing would have been the final barrier," Probert responded.

At the morning hearing, two other witnesses explained how barriers can help control high-pressure wells. "A barrier provides a means by which gas is prevented from entering the wellbore or, if it has already, from continuing to enter and from moving up to the surface," said F.E. Beck, a petroleum engineer and associate professor at Texas A&M University. Numerous drilling barriers can be used, including drilling mud, high-strength steel casing, cement, and BOPs or other mechanical barriers, he indicated.

Crew must respond

Beck also said in the event of a kick—when gas enters a wellbore at high pressure and tries to force its way to the surface—it becomes critical for the drilling crew to flaw-lessly exercise procedures to activate the BOP, remove the kick from the wellbore, and adjust the drilling mud's density to restore the well's balance. "When a kick is recognized, it is critical that the crew respond immediately to the kick and install a barrier, such as closing a [BOP] valve across the wellbore or around the drillstring," Beck said.

"The drilling industry strives to assure multiple barriers remain in place at all times during operations on a well. This reduces the possibility of a blowout caused by sequential loss of barriers," he explained. "However, there remains the potential for human error to create conditions by which barriers are subjected to loads for which they are not designed. The industry has used intensive training as a means of reducing this risk, but unfortunately it has not eliminated the risk."

Elmer P. Dannenberger III, who retired in January as chief of the US Minerals Management Services' offshore regulatory program, told the Energy and Natural Resources Committee that deepwater rigs typically have crews that are experienced and capable and their compliances records tend to be very good. "The blowout record is better for deepwater rigs than for shallow-water units," he said.

When committee member Ronald L. Wyden (D-Ore.) suggested that MMS has not required adequate blowout backup prevention systems offshore, Dannenberger noted that at the BP well, "they were required to have a backup, in this case [a remotely operated vehicle] instead of an acoustic switch. It didn't work."

In his written statement, Dannenberger recommended 10 actions, including streamlining the US Outer Continental Shelf regulatory regime to reduce gaps, overlaps, and confusion; establishing an independent authority to investigate offshore accidents, make assessments, and report trends; thoroughly review BOP performance considerations including redundancy, independent functioning, shearing

Graham: Oil spill hurts climate bill's chances of success

Nick Snow

Washington Editor

The Gulf of Mexico rig accident and oil spill has made prospects for US Senate passage of a compromise climate bill with more offshore oil and gas activity bleak, Sen. Lindsey O. Graham (R-Ala.) conceded.

"When it comes to getting 60 votes for legislation that includes additional oil and gas drilling with revenue sharing, the climb has gotten steeper because of the oil spill," he said on May 7, noting that a compromise he and Sens. John F. Kerry (D-Mass.) and Joseph I. Lieberman (I-Conn.) proposed late last year contained such a provision. Graham quit discussions with them about compromise climate change legislation on Apr. 30 after Senate Majority Leader Harry M. Reid (D-Nev.) would not agree to consider the issue before immigration reform.

Referring to an Apr. 19 letter to their colleagues from Sens. Jeff Bingaman (D-NM), Byron L. Dorgan (D-ND), and John D. Rockefeller IV (D-W.Va.) in which they reiterated their strong opposition to sharing new federal offshore energy revenue with coastal states, Graham continued: "It doesn't take long to conclude that opposition to expanded offshore drilling with revenue sharing has grown among certain Senate Democrats. Some have even declared energy legislation 'dead on arrival' if it contains an expansion of offshore drilling."

He said he respects their views, but added that he has reached a differ-

ent conclusion. "I remain committed to safely expanding offshore drilling because I know oil will be part of our nation's energy plan for years to come," Graham said. "Every barrel we can find in the United States is one less we have to import from [the Organization of Petroleum Exporting Countries]. And today, some of the dollars we spend on imported oil find their way into the hands of terrorists who wish to harm our nation."

He noted that as a senator from a coastal state, he believes it makes sense to determine what happened off Louisiana's coast, enact safety measures to keep it from happening again, and then build a consensus for expanding oil and gas activity on the US Outer Continental Shelf. capability, and backup actuation options; and requiring all OCS operators to have comprehensive safety and environmental management programs. "They need to pay attention to hurricane issues if they operate in the Gulf of Mexico," he suggested.

Presses for commitment

Senators directed more inquiries at the three officials. Energy and Natural Resources Committee member Maria E. Cantwell (D-Wash.) pressed McKay to confirm BP's promise to pay all the spill's costs. "You're stepping up today at a hearing with probably the best advice money can buy behind you, with [public relations] and legal teams, and I'm sure they're saying, 'Let's say that we're going to pay," she said.

"So I want to make sure that we really understand what you're saying you're really going to be committed to today, because the long-term impacts of this are going to be for 20 years and we cannot sustain this kind of behavior or cost. And I want to make sure that we're getting full answers to the coverage that you are really signing up for today," Cantwell continued.

McKay replied, "We are trying to be extremely responsive, expeditious, and meet every responsibility we have as a responsible party, and that means paying all legitimate claims. So that is our intent. I can't speculate on every case, but I can tell you this is not about legal words; this is about getting it done, and getting it done right."

In the afternoon hearing, Boxer expressed further concern, saying, "None of you can assure us that this won't happen again. Your statements to MMS when you wanted quick approval of this project were that there would be no problem even if there was a blowout because of the cleanup technology you have. All of this is falling like a house of cards. If you look at your statements and what is happening, it's very troubling, yet you seem satisfied that you did your best."

McKay, Newman, and Probert each said that they and their companies would continue to work to improve their offshore operations and practices. "I'm never satisfied," McKay added.

Oil firms across industry help with oil spill response

Paula Dittrick

Senior Staff Writer

Many oil companies offered technical expertise and equipment to BP PLC and the oil spill response team in a cooperative effort to stop the flow from a leaking deepwater well and help mitigate environmental damages.

"We are all working together to stop the uncontrolled release of oil in the Gulf of Mexico," said National Ocean Industries Association Pres. Randall Luthi from his office in Washington, DC, on May 7.

"Our member companies want answers as much as anyone as to the cause of this event, and we understand the

Cap-and-trade dead

Graham also declared dead the climate change bill instituting a carbon capand-trade program, which the full US House and Democrats on the Senate Environment and Public Works Committee approved in 2009. "It has been replaced by a new model that focuses on energy independence, job creation, and clean air," he maintained. "I appreciate the work of Sens. Kerry and Lieberman, who have been good allies in trying to move this debate in a new, more-productive direction. I am particularly proud of the efforts we have made in creating a renaissance in nuclear power, which leads to energy security and fosters job creation."

Lieberman and Graham jointly responded that they appreciate Graham's continued commitment to passing comprehensive energy legislation as they said they had planned to roll out their proposal on May 12.

"We are more encouraged today that we can secure the necessary votes to pass this legislation this year in part because the last weeks have given everyone with a stake in this issue a heightened understanding that as a nation, we can no longer wait to solve this problem which threatens our economy, our security, and our environment," they said on May 7. "Our optimism is bolstered because there is a growing and unprecedented bipartisan coalition from the business, national security, faith, and environmental communities that supports our legislation and is energized to work hard and get it passed."

When it comes to improving energy security and reducing pollution, the American public finds the status quo unacceptable, Graham declared. "Many senators from both parties have stated that Congress should set energy and carbon pollution policy, not the [US Environmental Protection Agency]. I could not agree more," he said. "Therefore, we should move forward in a reasoned, thoughtful manner and in a political climate which gives us the best chance at success.

"I believe there could be more than 60 votes for this bipartisan concept in the future," Graham continued. "But there are not nearly 60 votes today and I do not see them materializing until we deal with the uncertainty of the immigration debate and the consequences of the oil spill."

WATCHING GOVERNMENT



Rushing the ethanol ruling

The leading US oil and gas, automotive, and outdoor power equipment trade associations are concerned that the US Environmental Protection Agency might permit ethanol's allowable motor fuels limit to rise without fully considering the consequences.

"As EPA proceeds with important decisions about ethanol and biofuel blend rates, it is imperative that those decisions be made with the end user market in mind," said American Petroleum Institute Pres. Jack N. Gerard, Alliance of Automobile Manufacturers Pres. Dave McCurdy, and Outdoor Power Equipment Institute Pres. Kris Kiser.

"These decisions will have real-world impacts, and we urge EPA to refrain from setting a premature deadline that ignores reliable, scientific data about the effects of higher ethanol blends on emissions, durability, and consumer safety," they said in a May 5 joint statement.

Growth Energy, a biofuels industry group, asked EPA in March 2009 to increase the allowable amount of ethanol in gasoline to 15% from 10%. Moving this "blend wall" would reduce US greenhouse gas emissions by 20 million tonnes/year, create 136,000 jobs, and improve US energy security, it argued.

Decision looms

EPA told the group on Dec. 1 that it expects to make a decision by midyear. API, AAM, and OPEI, however, think that's too soon.

EPA also received comments from several states, environmental organizations, and the US Coast Guard, according to Coleman Jones, biofuels implementation manager for General Motors. "They all counseled that EPA needs to wait and do a thorough job of testing, especially since Orbital Engine Co.'s tests in Australia revealed serious problems," he told OGJ in a May 7 telephone interview.

Australia's Environment Department funded the tests after the ethanol industry there increased the level to 15% without notice and motorists started having problems, he said.

Problems emerge

"Of the seven vehicles tested, Orbital found that three of their systems did not adapt well to the ethanol and two had catalyst performance deterioration," he said. US tests by the Department of Energy and the three industries found similar control system problems in 13 of 25 vehicles, Jones added.

Kiser, who also spoke with OGJ, noted that more than 500 million outdoor engines designed to run on fuels with 10% ethanol could fail at higher levels. "What's needed is robust testing and data, which are not complete," he said.

EPA is considering issuing a partial waiver, allowing an increase in the limit to 12% while tests continue. The agency also doesn't plan to address availability questions, noted Al Jessel, Chevron Corp.'s senior fuels policy advisor, who spoke to OGJ on API's behalf.

"The pressure is going to increase on the oil industry to supply E15 because of the renewable fuel standard," he said. "Refiners and marketers will be in a bind. We will not knowingly supply anyone with fuels that lead to problems." **DGJ** offshore industry will be closely examined by the authorities at the state and national level," Luthi said. NOIA represents the offshore industry.

Transocean Ltd.'s Deepwater Horizon semisubmersible drilled the Macondo well for BP and its partners, Anadarko Petroleum Corp. and Mitsui Oil Exploration Co. Ltd. BP is the operator. An Apr. 20 Deepwater Horizon explosion and fire left 11 crew members missing and presumed dead. The Deepwater Horizon sank on Apr. 22 (OGJ, May 3, 2010, p. 31).

Anadarko has four employees assisting BP's technical teams. Separately, Statoil ASA offered spill assistance as well as its drilling and well expertise.

ExxonMobil Corp. offered a drilling rig as a staging base, two supply vessels, and an underwater vehicle. It also provided technical expertise on blowout preventers, dispersant injection, well construction, and containment options.

In addition, ExxonMobil is identifying, procuring, and manufacturing additional chemical dispersant supplies.

Newfield Exploration Co. sent a support vessel, the Odyssea Diamond, to assist during the rig fire on Apr. 20, and the vessel subsequently towed two damaged lifeboats to Fourchon, La. Additionally, Newfield released the Helix Q4000 semisubmersible intervention vessel to BP on Apr. 30, requiring an early suspension of subsea well intervention operations at Mississippi Canyon Block 506. The Q4000 remains on contract with BP.

Shell Oil Co. offered its technical experts in the areas of subsea wells, environmental science, and emergency response. Shell also has offered a range of equipment including a dynamically positioned vessel with a remotely operated vehicle, a helicopter, an ROV and a containment dome.

ConocoPhillips responded favorably to a request by BP to potentially access an adjacent ConocoPhillips's lease for a relief well, and ConocoPhillips nominated two technical experts to participate in an American Petroleum Institute proposed joint industry government task force. Because it does not have any gulf drilling operations at this time, ConocoPhillips has limited availability to boats or other equipment to offer BP.

Oceaneering International Inc. supported BP with people to work on subsea technology. An Oceaneering vessel was on location with two ROVs and there are two additional ROVs on a third-party vessel that BP has hired to be on location. Oceaneering equipment is providing the video feed from the ocean floor.

Luthi also had many more examples of other companies offering equipment and operational expertise.

Interior proposes split of MMS's safety, leasing duties

Nick Snow | Washington Editor

US Department of the Interior Secretary Ken Salazar proposed dividing the US Minerals Management Service and separating its environmental and safety regulations enforcement from its leasing and royalties collection operations.

"The job of ensuring energy companies are following the law and protecting the safety of their workers and the environment is a big one, and should be independent from other missions of the agency," he told reporters at Interior's headquarters on May 11. "We will responsibly and thoughtfully move to establish independence for this critical mission so that the American people know they have a strong and independent organization holding energy companies accountable and in compliance with the law of the land."

Salazar said the new safety and environment office would have 300 employees, including inspectors and administrators. "How we specifically do it will need to be determined. It won't be easy," he said. "It may require a new assistant secretary for safety and the environment." MMS's fiscal 2010 budget for inspections is \$23 million, he noted.

Salazar said MMS brings the federal treasury \$13 billion/ year, which is an important part of its mission. "Separate and apart should be its environmental and safety function to assure there's no conflict, and to make sure that operations are being conducted properly," he maintained.

He said he would determine prompt administrative steps to begin the process and consult with members of Congress such as US House Natural Resources Committee Chairman Nick J. Rahall (D-W.Va.) and Senate Energy and Natural Resources Committee member Ronald L. Wyden (D-Ore.) who have proposed making MMS a more independent agency with a Senate-confirmed director.

Longer evaluation

Salazar also noted that the Obama administration is preparing oil spill response legislation that will include a proposal to eliminate a congressionally mandated 30-day deadline for MMS to act on exploration plans submitted by oil and gas producers. "That's not enough time," he said. "MMS should have 90 days to complete environmental and safety reviews, as needed. It also would supplement preparation of an environmental impact statement as a 5-year Outer Continental Shelf leasing program is developed and a second EIS for each lease sale."

Salazar's proposal drew some immediate responses. US Rep. Doc Hastings (R-Wash.), the House Natural Resources Committee's ranking minority member, said it deserves consideration. "My first reaction is that such a division of duties would have benefits if it can be done right," he said, adding, "A thoughtful look needs to be taken at how to make certain that American-made energy production can be the safest in the world. Our economy, millions of jobs, and our national security depend on the right answers."

US Rep. Edward J. Markey, who chairs the Energy Independence and Global Warming Select Committee, said, "Secretary Salazar is continuing to positively reform the Interior Department to ensure the protection of both the environment and American taxpayer. Splitting MMS into independent safety and leasing divisions will provide the additional oversight of offshore oil and gas activities our country needs."

US Rep. Lois Capps (D-Calif.), a Natural Resources committee member, said she welcomed Salazar's announcement as an effort to address some conflicts at the agency responsible for managing federal offshore resources. "We have long needed more transparency and accountability at MMS. Today's announcement, however, does not diminish the need for a 'blue-ribbon' commission to investigate the causes, response, and impacts of the BP oil spill," she said.

The American Petroleum Institute issued a statement saying that it remains committed to working with Salazar in achieving safe, technologically sound, and environmentally responsible offshore oil and gas operations. "We have a strong record of working cooperatively with the government to promote safe offshore operations, while maintaining a strong offshore leasing program," it continued. "Both are vitally important to producing the oil and gas American consumers need, and providing the energy and jobs crucial to the economy of the gulf region and the nation, so we look forward to learning the details of the proposal."

Other actions

Salazar said the Obama administration also would seek another \$29 million from Congress for inspections, enforcement, studies, and other activities at DOI. This would include \$20 million for increased inspection of other offshore platforms, engineering studies, and safety regulation enforcement. Another \$7 million would be used for more comprehensive evaluations of policies, procedures, and actions which may be needed in the wake of the Apr. 20 rig accident

GENERAL INTEREST

and subsequent crude oil spill in the g, and \$2 million would go to the US Fish and Wildlife Service, US Geological Survey, or others to conduct general environmental studies.

The secretary also announced that the administration would ask the National Academy of Engineering to conduct an independent, technical investigation to determine the root causes of the explosion and fire at the Deepwater Horizon semisubmersible drilling rig so that steps can be taken to address mechanical failures underlying the accident. He emphasized that the independent NAE analysis and technical investigation will complement—but not replace—the joint investigation which the US Coast Guard and MMS are conducting under their respective government investigative authorities.

Salazar also disputed allegations that MMS has not aggressively enforced existing regulations. "It's an enforcer," he declared. "It has been issuing violation notices, as many as 2,000 over recent time. There will be additional and more robust inspections. We also will learn a lot from reviews which are taking place to make sure this problem we are facing now does not occur again."

Crosco National 801 drilling for Total E&P in Libya



Crosco Integrated Drilling & Well Services Co. Ltd. has reported the ongoing and successful provision of drilling services for Total E&P Libye in Libya. Drilling services are being provided with Crosco 3000 HP drilling rig National 801 (National 1625 UDBE) on wildcat well A1-42/4 in Area 42 on Block 4, Jabal Akhdar Uplift, Cyrenaica Platform. In addition

to the drilling services being provided for Total, Crosco is also providing maintenance and spare-part management services on an offshore Libyan production platform, according to Vlado Lescan, Crosco's Libya general manager. Photo from Crosco.

ESAI review: \$70-90/bbl oil seen as sustainable range for next 2 years

Marilyn Radler

Senior Editor-Economics

In its latest Stockwatch Quarterly Review, Energy Security Analysis Inc. (ESAI), Boston, forecasts that over the next 2 years, the fundamentally sustainable price range for crude is \$70-90/bbl.

ESAI Pres. Sarah Emerson said, "Obviously the price can break out of this range, and we see more potential for a breakout on the upside, but that will require either a supplyside event or signals from outside of the oil patch."

The price forecast is based on six fundamental signals, including that the marginal cost of production outside the Organization of Petroleum Exporting Countries is set by Canadian oil sands. That cost, on a delivered basis, exceeds \$65/bbl. This puts a flexible floor under prices for a period of time, ESAI said.

Another factor cited in the forecast is OPEC spare production capacity, which has climbed as a result of the recession and the organization's subsequent pullback in output. Spare production capacity puts a flexible ceiling on prices.

Third, OPEC's newfound spare capacity strengthens its hand in influencing prices, giving the organization the ability to prevent a large fundamental price rally by putting additional supply on the market. However, OPEC's ability to respond to such a price rally will be hampered by the continued mismatch between OPEC's predominantly sour crude oil and the predominance of low-sulfur petroleum products in the oil market.

The forecast also considered that coming out of the economic downturn, there is still ample refining capacity, and capacity utilization rates are at historic lows. Over the next 2 years, these utilization rates will grow, but there will still be significant spare capacity in the global refining sector, ESAI said.

The fifth fundamental driver behind the price forecast was that over the next 2 years, in a departure from the recent past, light, sweet crude production will rise by roughly 800,000 b/d in 2010 and 2011, according to ESAI. This growth will temper price spikes in the critical West Texas Intermediate and Brent markets.

Finally, even with a weak economy in Europe, slow recovery in the US, and sober assumptions on China, a doubledip recession is almost impossible without an unforeseen exogenous event, ESAI said.

Upside potential

ESAI noted that a potential development that could encourage a breakout to the upside was if oil demand surges beyond expectations in 2 years.

WATCHING THE WORLD

"Some forecasters are anticipating a slightly faster recovery, but ESAI's projections are not overly conservative, therefore, it is unlikely that a demand "surge" would be dramatically higher than the projections presented in this publication. In sum, there is a risk premium in oil prices that forces the sustainable price range to begin at non-OPEC marginal production cost and extend higher," the report said.

"But there is added risk of a breakout above the upper end of the range due to the fact it is harder to sustain supply than sustain demand. This is a reality that stems from growing populations and rising income in developing countries in the Middle East, Asia, and Latin America. This rising tide trumps the impact of weaker demand due to environmental policies and falling populations in mature economies," ESAI said.

Non-OPEC supply

Over the next 2 years, non-OPEC output should enjoy a healthy renaissance, the report said, with Brazil leading the charge in higher production.

ESAI said Brazil should see output grow by 450,000 b/d through 2012, as a series of 100,000 b/d offshore fields come on stream. Over the same period, Columbian output should grow by nearly 250,000 b/d in response to the government's aggressive courting of foreign producers. The US, Canada, Kazahkstan, and China will post increases near 200.000 b/d.

Even with output in Mexico and the North Sea dropping by a combined 1.5 million b/d through 2012, total non-OPEC crude production will still rise by over 600,000 b/d in this time frame, ESAI forecasts.

Including strong OPEC natural gas liquids growth—and higher alternative fuels output-supply growth outside OPEC will reach 2.5 million b/d over this period. This should limit the growth of the call on OPEC to just 1.9 million b/d through 2012. With total OPEC capacity conservatively rising by 1.4 million b/d at the same time, spare capacity should remain at comfortable levels above 5 million b/d, ESIA said. **OGJ**



Diplomacy Editor | Blog at www.ogionline.com

Falkland Islands tensions rise

Predictably enough, tensions between Argentina and the UK again are on the rise after Rockhopper Exploration PLC last week said further tests indicate the oil it discovered near the Falkland Islands can be commercially exploited.

"We are extremely excited by the results of this well," said Samuel Moody, Rockhopper managing director. "While we are presently acquiring additional data. current indications are that we have made the first oil discovery in the North Falkland basin," he said.

Rockhopper said preliminary tests indicate the oil found with the Sea Lion prospect off the Falklands can be moved. Further testing is planned.

Not surprisingly, Rockhopper's find has reignited the long-smoldering row between the UK and Argentina over the islands, which they fought a war over in the 1980s.

The United Nations General Assembly called for the two countries to negotiate sovereignty over the islands following that war, which Britain won. But London consistently rules out any concessions involving the islands, while Buenos Aires still claims sovereignty over them.

'Illegal takeover'

Argentine President Cristina Kirchner has said the UK's oil-drilling operation violates international laws as well as UN resolutions asking that neither side take unilateral actions that could worsen the situation.

Argentina's Foreign Ministry also has rejected what it calls "an illegal takeover of unrenewable natural resources that are the property of the Argentine people."

The ministry said it would "continue denouncing in all international forums this illegal British action, taking necessary measures that comply with international law to keep these illegal actions from happening."

Argentina has had one small diplomatic success in that regard. After learning of British oil prospecting off the islands, Kirchner obtained a strong condemnation and recognition of Argentina's sovereign rights in February during the Latin American & Caribbean Summit in Cancun.

The next international forum is the Latin America-Caribbean-European Union Summit, happening this week in Madrid. Argentina is expected to raise its voice once again.

Treaty of Lisbon

But Kirchner won't be as lucky in Madrid as she was in Cancun. Her main problem is the Treaty of Lisbon, signed by 27 EU member states on Dec. 13, 2007.

Annex Two of that document lists countries and overseas territories now considered to be part of the EU, including the Falkland Islands, South Georgia, the South Sandwich Islands, and the UK's Antarctic territory.

It will be tough for the Argentineans to make headway in a Europe that has already decided who the Falklands belong to.

"This [discovery] will only add fuel to the fire of Argentine claims," said Alan Mendoza of the Henry Jackson Society. "Argentina will say they have rights to the Falklands whether or not there is oil there."

According to Mendoza, Rockhopper's discovery "will likely lead to further confrontations." OGJ

IMPORTS OF CRUDE AND PRODUCTS

	— Distr 4-23 2010	icts 1-4 — 4-16 2010	— Dist 4-23 2010	rict 5 — 4-16 2010 – 1,000 b/	4-23 2010 d	— Total US 4-16 2010	*4-24 2009
Total motor gasoline Mo. gas. blending comp Distillate Residual Jet fuel-kerosine Propane-propylene Other	843 704 252 447 84 100 22	718 565 106 567 91 69 607	142 82 0 7 5 135	38 38 0 53 8 7 12	985 786 252 447 91 105 157	756 603 106 620 99 76 619	841 680 123 386 56 168 366
Total products	2,452	2,723	371	156	2,823	2,879	2,620
Total crude	8,616	8,493	1,065	1,120	9,681	9,613	9,824
Total imports	11,068	11,216	1,436	1,276	12,504	12,492	12,444

*Revised. Source: US Energy Information Administration Data available in OGJ Online Research Center.

PURVIN & GERTZ LNG NETBACKS—APR. 30, 2010

		liquefaction plant							
Receiving	Algeria	Malaysia	Nigeria	Austr. NW Shelf	Qatar	Trinidad			
Daraalana	0.40	E 00	7 5 0	E QC	6.90	7 40			
Everett Islo of Grain	8.42 3.35 3.70	0.98 1.15 1.71	2.96	1.23 1.60	1.70	3.65			
Lake Charles Sodegaura	1.73 5.65	-0.22 8.17	1.49 5.90	-0.05 7.85	0.19 7.08	2.40 4.92			
Zeebrugge	7.04	4.75	6.35	4.63	5.39	6.41			

Definitions, see OGJ Apr. 9, 2007, p. 57. Source: Purvin & Gertz Inc. Data available in OGJ Online Research Center.

CRUDE AND PRODUCT STOCKS

Additional analysis of market trends is avail-
able through OGJ Online, Oil & Gas Journal's
electronic information source, at http://www.
ogionline.com.

OIL& GAS JOURNAL

OGJ CRACK SPREAD

	*4-30-10	*5-1-09 _\$/bbl	Change	Change, %
SPOT PRICES Product value Brent crude Crack spread	94.22 85.84 8.38	56.92 50.04 6.89	37.29 35.80 1.50	65.5 71.5 21.7
FUTURES MARKET F	PRICES			
Product value	96.98	58.91	38.07	64.6
crude Crack spread	84.24 12.75	51.07 7.84	33.17 4.91	64.9 62.6
Product value	96.58	59.66	36.92	61.9
Light sweet crude Crack spread	89.96 6.62	56.45 3.21	33.51 3.41	59.4 106.0

*Average for week ending. Source: Oil & Gas Journal Data available in OGJ Online Research Center.

District -	Crude oil	Motor Total	gasoline —— Blending comp.1	Jet fuel, kerosine —— 1,000 bbl —	Distillate	oils — Residual	Propane- propylene
PADD 1 PADD 2 PADD 3 PADD 3 PADD 4 PADD 5	11,967 91,528 185,125 16,779 52,421	56,377 53,406 73,331 6,952 33,619	40,730 26,072 45,042 2,431 28,195	11,993 7,427 14,868 642 9,247	58,997 28,323 49,369 3,275 11,856	16,790 1,221 22,002 187 4,685	2,787 14,110 16,508 ¹ 640 —
Apr. 23, 2010 Apr. 16, 2010 Apr. 24, 2009²	357,820 355,857 374,653	223,685 224,925 212,612	142,470 143,422 126,734	44,177 42,561 40,188	151,820 148,883 144,105	44,885 44,386 36,282	34,045 30,798 43,119

¹Includes PADD 5. ²Revised. Source: US Energy Information Administration Data available in OGJ Online Research Center.

REFINERY REPORT—APR. 23, 2010

	REFINERY			REFINERY OUTPUT				
District	Gross inputs 1.0	ATIONS Crude oil inputs OO b/d	Total motor gasoline	Jet fuel, kerosine	––––– Fuel Distillate –––– 1.000 b/d ––	oils —— Residual	Propane- propylene	
PADD 1 PADD 2 PADD 3 PADD 3 PADD 4 PADD 5	1,143 3,100 7,971 562 2,865	1,126 3,079 7,658 556 2,537	2,392 2,267 2,623 342 1,581	80 195 781 32 419	421 854 2,111 184 593	70 32 259 7 130	57 273 773 ¹ 71	
Apr. 23, 2010 Apr. 16, 2010 Apr. 24, 2009 ²	15,641 15,110 14,612	14,956 14,678 14,334	9,205 9,396 8,790	1,507 1,440 1,442	4,163 4,057 4,153	498 483 476	1,174 1,173 1,005	
	17,584 Opera	able capacity	89.0% utilizati	on rate				

OGJ GASOLINE PRICES

	Price ex tax 4-28-10	Pump price* 4-28-10 — ¢/gal —	Pump price 4-29-09
(Approx. prices for sr Atlanta	elf-service 243.4 234.9 233.9 228.6 239.9 240.9 227.6 232.1 233.1 234.1 234.1 234.9 235.8	unleaded g 274.8 276.8 275.8 291.8 292.8 273.8 290.8 269.8 269.8 269.8 283.8 284.8 284.8 286.8 282.0	asoline) 204.3 200.4 198.4 205.4 201.4 287.7 190.3 192.5 206.5 209.9 215.5 210.2
Chicago	264.0 231.7 238.2 237.4 235.0 237.1 243.9 239.3 239.4 243.2 232.7 237.2 242.1 237.2 242.1 230.7 237.3 239.3	319.1 278.6 289.0 285.1 272.8 284.8 279.1 290.7 288.8 268.1 282.9 277.8 266.1 280.7 282.8	220.9 204.9 206.9 199.9 194.9 200.9 198.9 204.9 203.9 189.9 197.9 190.9 189.9 195.9 200.1
Albuquerque Birmingham Dallas-Fort Worth Houston Little Rock New Orleans San Antonio PAD III avg	235.2 237.0 238.9 235.8 231.1 236.8 231.7 235.2	272.4 276.3 277.3 274.2 271.3 275.2 270.1 273.8	197.9 195.9 192.9 192.8 195.9 191.9 190.9 190.9 194.0
Cheyenne Denver Salt Lake City PAD IV avg	244.1 249.1 259.6 250.9	276.5 289.5 302.5 289.5	193.6 196.9 191.9 194.1
Los Angeles Phoenix Portland San Diego San Francisco Seattle PAD V avg	239.5 241.9 254.9 251.2 256.8 251.5 249.3	305.3 279.3 298.3 317.0 322.6 307.4 305.0	211.9 200.9 221.9 230.7 235.7 221.9 220.5
Week's avg Apr. avg Mar. avg 2010 to date 2009 to date	239.9 238.9 230.8 272.8 145.6	284.7 283.7 275.6 228.0	204.2 202.3 193.2

*Includes state and federal motor fuel taxes and state sales tax. Local governments may impose additional taxes. Source: Oil & Gas Journal. Data available in OGJ Online Research Center.

REFINED PRODUCT PRICES

4	¢/gal	4	-23-10 ¢/gal
Spot market product	prices		
Motor gasoline (Conventional-regular New York Harbor Gulf Coast Los Angeles Amsterdam-Rotterdam Antwerp (ARA)) 226.25 223.50 235.35 - 225.21	Heating oil No. 2 New York Harbor. Gulf Coast Gas oil ARA Singapore	223.00 220.50 229.85 225.24
Motor gasoline (Reformulated-regular New York Harbor. Gulf Coast Los Angeles	224.05 235.75 231.25 237.35	New York Harbor. Gulf Coast Los Angeles ARA Singapore	186.83 180.43 189.40 188.60 188.03

Source: DOE Weekly Petroleum Status Report. Data available in OGJ Online Research Center.

BAKER HUGHES RIG COUNT

	4-30-10	5-1-09
Alabama	4	4
Alaska	9	4
Arkansas	42	48
California	31	17
Land	30	16
UTISNORE		1
	50	45
-Iorida	2	0
ndiana	2	0
Kansas	20	17
Kentucky	5	- 19
ouisiana	214	135
N. Land	142	75
S. Inland waters	14	5
S. Land	15	11
Offshore	43	44
Maryland	0	0
Michigan	0	0
	12	10
Viontana	6	1
Neuraska	56	24
New York	1	1
North Dakota	99	37
Dhio	7	7
Oklahoma	122	88
Pennsylvania	79	27
South Dakota	1	1
Texas	627	375
Offshore	/	4
Inland waters	20	11
Dist. 2	39	11
Dist. 2	20	27
Dist 4	43	40
Dist 5	77	92
Dist 6	79	62
Dist. 7B.	12	14
Dist. 7C	61	9
Dist. 8	135	40
Dist. 8A	25	11
Dist. 9	34	23
Dist. 10	50	30
Jtah	27	15
West Virginia	22	22
There HI 1. NV 4. VA 2	30	12
Juliels—111-1; 110-4; VA-2	/	
Total US Total Canada	1,483	945 67
Grand total	1 501	1 012
IS Oil rigs	513	196
JS Gas rigs	958	741
Total US offshore	52	51
Fotal US cum. avg. YTD	1,374	1,244

Rotary rigs from spudding in to total depth. Definitions, see OGJ Sept. 18, 2006, p. 42.

Source: Baker Hughes Inc. Data available in OGJ Online Research Center.

SMITH RIG COUNT

Proposed depth, ft	Rig count	4-30-10 Percent footage*	Rig count	5-1-09 Percent footage*
0-2,500 2,501-5,000 7,501-10,000 10,001-12,500 12,501-15,000 15,501-17,500 17,501-20,000 20,001-over Total	137 48 134 272 298 210 208 87 51 1,445	5.1 70.8 22.3 6.6 11.4 1.9 — — 8.7	38 59 117 204 179 184 114 50 38 983	7.8 62.7 17.0 4.4 2.7 — — 7.5
INLAND LAND OFFSHORE	12 1,385 48		9 928 46	

*Rigs employed under footage contracts. Definitions, see OGJ Sept. 18, 2006, p. 42.

Source: Smith International Inc. Data available in OGJ Online Research Center.

OGJ PRODUCTION REPORT

14 00 40 27 4 00

	1,000 b/	-5-1-09 /d ———
(Crude oil and lea	se condensate)	
Alabama	21	21
Alaska	689	653
California	638	634
Colorado	65	65
Florida	5	2
Illinois	26	25
Kansas	109	108
Louisiana	1,451	1,362
Michigan	18	17
Mississippi	64	64
Montana	84	79
New Mexico	164	153
North Dakota	233	197
Oklahoma	178	178
Texas	1,439	1,365
Utah	64	64
Wyoming	144	145
All others	68	68
Total	5,460	5,200
100 Lastinasta 2 Daviased		

GJ estimate. 2Revised. Source: Oil & Gas Journal.

Data available in OGJ Online Research Center.

US CRUDE PRICES

	4-30-10 \$/bbl*
Alaska-North Slope 27°	72.29
South Louisiana Śweet	86.25
California-Midway Sunset 13°	77.45
Lost Hills 30°	85.25
Wyoming Sweet	77.15
East Texas Sweet	82.25
West Texas Sour 34°	77.75
West Texas Intermediate	82.75
Oklahoma Sweet	82.75
Texas Upper Gulf Coast	75.75
Michigan Sour	74.75
Kansas Common	81.50
North Dakota Sweet	73.75

*Current major refiner's posted prices except North Slope lags 2 months. 40° gravity crude unless differing gravity is shown. Source: Oil & Gas Journal.

Data available in OGJ Online Research Center.

WORLD CRUDE PRICES

\$/bbl1	4-23-10
United Kingdom-Brent 38°	84.08
Russia-Urals 32°.	81.63
Saudi Light 34°	82.90
Dubai Fateh 32°.	83.56
Algeria Saharan 44°.	84.17
Nigeria-Bonny Light 37°.	85.82
Indonesia-Minas 34°	90.21
Venezuela-Tia Juana Light 31°	82.42
Mexico-Isthmus 33°.	82.31
OPEC basket	83.77
Total OPEC ²	82.91
Total non-OPEC ²	81.35
Total world ²	82.24
US imports ³	80.29

¹Estimated contract prices. ²Average price (FOB) weighted by estimated export volume. ³Average price (FOB) weighted by estimated import volume.

Source: DOE Weekly Petroleum Status Report. Data available in OGJ Online Research Center.

US NATURAL GAS STORAGE¹

4-23-10	4-10-10	4-23-09	unange,
			/0
727	696	801	-9.2
867	829	704	23.2
318	304	306	3.9
1,912	1,829	1,811	5.6
		Change,	
Feb. 10	Feb. 09	~	
1,696	1,757	-3.5	
	727 867 318 1,912 Feb. 10 1,696	4-23-10 4-16-10 bcf bcf 727 696 867 829 318 304 1,912 1,829 Feb. 10 Feb. 09 1,696 1,757	4-23-10 4-16-10 4-23-00 bcf bcf

¹Working gas. ²At end of period. Source: Energy Information Administration Data available in OGJ Online Research Center.

STATISTICS

WORLDWIDE CRUDE OIL AND GAS PRODUCTION

	Feb. 2010	Jan. 2010	2 month average pro 2010 Crude, 1,000 b/	e Chang duction — 2009 d ————————————————————————————————————	ge vs. previo Volume	ous year <u></u> %	Feb. 2010	Jan. 2010 Gas, bcf	Cum. 2010
Argentina Bolivia	600 40 2,017 2,668 759 470 2,610 122 105 5,499 2,230 84	600 40 1,996 2,456 741 460 2,615 105 5,433 2,220 84	600 40 2,006 2,562 750 465 2,613 119 105 5,466 2,225 84	623 40 1,899 2,641 632 490 2,674 107 110 5,219 2,140 83	-23 	-3.6 5.7 -3.0 18.8 -5.1 -2.3 11.3 -4.3 4.7 4.0 0.4	98.0 38.0 30.0 419.7 35.0 2.0 195.0 10.0 116.6 1,717.0 65.0 5.1	109.0 42.0 32.0 483.1 35.0 2.0 216.0 10.5 124.3 1,872.0 70.0 5.5	207.00 80.00 62.00 902.80 70.00 4.10 20.50 240.87 3,589.00 135.00 10.68
Western Hemisphere	17,203	16,865	17,034	16,656	378	2.3	2,731.4	3,001.5	5,732.85
Austria Denmark France Germany Italy Netherlands Norway Turkey United Kingdom Other Western Europe	18 262 52 83 25 2,038 47 1,295 5	18 249 17 68 87 24 2,060 47 1,384 5	18 255 17 60 85 25 2,049 47 1,339 5	18 280 19 59 84 29 2,228 38 1,451 3	-25 -2 1 -5 -179 8 -111 2	-2.7 -8.8 -10.0 1.5 1.8 -15.5 -8.0 22.2 -7.7 58.9	4.3 24.6 1.5 38.8 20.0 360.0 342.0 	4.4 26.4 2.2 43.4 24.0 400.0 376.8 	8.74 51.02 3.70 82.21 44.00 760.00 718.81 375.26 5.29
Western Europe	3,841	3,958	3,899	4,208	-308	-7.3	974.1	1,074.9	2,049.03
Azerbaijan Croatia Hungary Kazakhstan Romania Russia Other FSU Other Eastern Europe	960 13 15 1,600 80 10,100 450 48	1,000 13 14 1,550 80 10,100 450 49	980 13 1,575 80 10,100 450 49	910 14 1,250 90 9,735 450 46	70 -1 325 -10 365 -3	7.7 -7.0 0.5 26.0 -11.1 3.7 	60.0 5.1 6.2 95.0 17.0 1,800.0 400.0 19.5	75.0 5.8 7.2 110.0 19.0 2,000.0 450.0 21.8	135.00 10.82 13.43 205.00 36.00 3,800.00 850.00 41.33
Eastern Europe and FSU	13,267	13,256	13,261	12,509	752	6.0	2,402.8	2,688.8	5,091.58
Algeria ¹ Angola ¹ Cameroon Congo (former Zaire) Egypt Equatorial Guinea Gabon Libya ¹ Nigeria ¹ Sudan Tunisia Other Africa	1,250 1,950 25 240 680 320 250 1,530 1,980 500 82 221	1,250 1,890 70 25 240 680 320 2,50 1,520 2,000 500 81 221	1,250 1,920 25 240 680 320 250 1,525 1,990 500 82 221	1,260 1,735 78 25 240 665 320 220 1,615 1,830 500 89 221	-10 185 15 30 90 160 7 7 	-0.8 10.7 -10.3 2.3 13.6 -5.6 8.7 -8.3	220.0 6.3 — — 110.0 0.1 0.3 35.0 90.0 — 9.4 8.5	245.0 6.5 	465.00 12.80
Africa	9,099	9,048	9,073	8,799	275	3.1	479.5	527.9	1,007.40
Bahrain Iran ¹ Kuwait ^{1 2} Oman Qatar ¹ Saudi Arabia ^{1 2} Syria United Arab Emirates ¹ Yemen Other Middle East	27 3,740 2,440 2,290 850 820 8,160 370 2,280 280 	26 3,700 2,460 2,290 850 800 8,200 370 2,290 2,80 	27 3,720 2,450 2,290 850 810 8,180 370 2,285 280 —	30 3,745 2,240 2,380 790 765 8,025 385 2,305 2,305 285	-3 -25 210 -90 60 45 155 -15 -20 -5 -5	-11.3 -0.7 9.4 -3.8 7.6 5.9 1.9 -3.9 -0.9 -1.8 -20.5	23.0 260.0 22.0 33.0 40.0 210.0 190.0 16.0 120.0 	25.3 280.0 25.0 37.0 45.0 215.0 18.0 135.0 7.1	48.31 540.00 47.00 85.00 405.00 34.00 255.00
Middle East	21,257	21,266	21,262	20,950	312	1.5	920.5	1,012.4	1,932.92
Australia Brunei India Indonesia Japan Malaysia New Zealand Pakistan Papua New Guinea Thailand Vietnam Other Asia-Pacific	443 180 3,951 703 870 19 730 55 66 30 236 340 43	451 180 3,883 700 860 19 740 40 65 30 233 310 43	447 180 3,917 702 865 19 735 48 66 30 234 325 43	482 157 3,726 626 865 19 740 40 65 40 246 283 42	-35 23 191 76 -5 8 -10 -11 42 1	-7.3 14.9 5.1 12.1 -2.1 -0.7 18.8 0.4 -25.0 -4.6 14.8 1.2	119.8 34.0 267.7 151.0 175.0 10.0 121.5 0.9 72.0 20.0 86.0	129.2 38.0 297.6 144.2 190.0 12.5 135.0 10.0 129.0 1.0 79.0 20.0 94.5	249.00 72.00 565.25 295.20 365.00 255.00 20.00 250.47 1.90 151.00 40.00 180.50
Asia-Pacific	7,665	7,554	7,610	7,332	278	3.8	1,188.9	1,279.9	2,468.82
TOTAL WORLD	72,332	71,946	72,139	70,453	1,686	2.4	8,697.2	9,585.4	18,282.60
OPEC Offshore Europe	29,140 3,616	29,080 3,714	29,110 3,665	28,530 3,979	580 -314	2.0 -7.9	1,253.3 654.9	1,378.5 718.0	2,631.80 1,372.92

¹OPEC member. ²Kuwait and Saudi Arabia production each include half of Neutral Zone. Totals may not add due to rounding. Source: Oil & Gas Journal. Data available in OGJ Online Research Center.

THE EDITOR'S PERSPECTIVE

OCS leasing loses bargaining clout in politics of climate

As a bargaining tool in the politics of climate change, expansion of oil and gas leasing off the US always has raised problems. After the Deepwater Horizon tragedy, even politicians eager to deploy it must be having second thoughts.

Senate sponsors of climate-change legislation are desperate to act. The House has passed a bill that would cap emissions of greenhouse gases and create a broad market for emission allow-

ances.

by **Bob Tippee**, Editor bobt@ogjonline.com

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But many senators are wary. Democrats, especially, have big political problems after voting for unpopular health-care reform legislation. They want no part in

another political brawl months before an election. Many senators, too, recognize that the House bill is political junk, the product of do-or-die deals with affected industries. On climate change, the Senate knows it must start with something much different from what the House passed.

Countering the political mood, Sens. John Kerry (D-Mass.), Lindsey Graham (R-SC), and Joe Lieberman (I-Conn.) have been running a climate-change and energy bill through the political machinery.

They're emphasizing jobs that the measure supposedly would create with generous support for uneconomic forms of energy. They're also frantic. They know that if the Congress doesn't pass something on climate change now, it might not revisit the issue for a while.

So they added expansion of offshore oil and gas leasing to the package hoping to attract support of otherwise wary colleagues.

The tradeoff is demonic. If the climate portions of the Senate bill are like the House version, refiners would stand to suffer. One industry segment thus would benefit politically at the other's grave expense—never a healthy development.

Furthermore, the Senate scheme would retain for at least some industries the cap-and-trade mechanism, a brewery for scandal with which the oil and gas business should not wish to be associated in any way.

Now, however, with spilled oil touching Gulf Coast beaches and river deltas, many senators will have lost whatever taste they had for expanded oil and gas leasing of the Outer Continental Shelf.

Vote bait thus becomes vote repellant. It was the wrong role for OCS leasing in the first place.

MARKET JOURNAL BUSINESS OUTLOOK bright at OTC

Despite the overhanging pall of the tragic Macondo blowout in the Gulf of Mexico, the 2010 Offshore Technology Conference on May 3-6 in Houston was generally upbeat with business better than a year ago and hopes of steady improvement through the rest of the year.

"Overall, inbound orders and activity are improving. Manufacturing companies have not really been able to push pricing higher yet, but business is much healthier than a year ago when the industry's focus was on implementing numerous cost-cutting measures ('survival mode')," said analysts in the Houston office of Raymond James & Associates Inc. "Based on our numerous conversations, the hottest business in the sector is pressure pumping," they said.

by **Sam Fletcher** Senior Writer samf@ogjonline.com

Meanwhile, energy investors are trying to anticipate the likely

impact of possible new regulations on the oil and gas industry and which companies ultimately will be held liable for punitive damages in the congressional outrage over the recent blowout in the gulf, said analysts at Pritchard Capital Partners LLC in New Orleans. Stock valuations of companies active in the gulf in the week ended May 7 "were down approximately 10%, in-line

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with the sector average, suggesting that the oil spill...has been incorporated into valuations for the time being. On a positive note, most exploration and production companies reported either a reduction or no increase in their gas rig count," they said.

US Interior Secretary Ken Salazar's decision to halt issuance of offshore drilling permits for the rest of May will only affect the jack up drilling market—rigs with their blowout preventers on the deck rather than on the seabed as with the deepwater floaters. "Interestingly, the rolling average of permits issued has been above 18/week for the past month, and the 3-week lag will not lead to any floaters stopping turning to the right," said Pritchard Capital analysts. "However, the uncertainty [of] what happens after the end of May and how fast new permits are issued will still weigh on the stocks. We would avoid the mat rig guys with near-term contract rollovers but believe the other gulf jack up guys should not have adverse effects."

Salazar's order extends beyond the gulf and affects permits pending in Alaska. DOI employees can continue to approve drilling plans and work on permits even though the permits will be withheld.

Euro zone crisis

The front-month crude contract fell to an intraday low of \$74.51/bbl on May 7 in the New York market, but rebounded in early trading May 10 after European policymakers came up with a \$962 billion emergency loan aimed at resolving the financial crisis of the euro zone.

Amid fears the European debt crisis will slow a global economic recovery, the June contract for benchmark US light, sweet crudes lost \$2 to close at \$75.11/bbl on May 7 on the New York Mercantile Exchange. The June natural gas contract gained 8.6¢ to \$4.02/MMbtu on NYMEX.

"Even a bullish report from the US Labor Department showing that 290,000 jobs were added to payrolls in April, the biggest payroll jump in 4 years, could not stem the downward slide of crude oil. However, the positive steps taken by the European Union are likely to stem the euro's collapse and will also calm some nerves in the broader market," said Pritchard Capital analysts.

"Oil has climbed off its 12-week lows as fears that the crisis would derail the global economic recovery begin to subside," Raymond James analysts said May 10. "Gas continues to rise after posting a 2% gain [on May 7] despite another bearish storage report released last week."

The price of West Texas Intermediate dropped more than 10% during the first week in May. "Although many comments in the trade press cite the rise in the value of the US dollar as the main factor, we think another financial dynamic has been more important, Standard and Poor's 500 index," said Adam Sieminski, chief energy economist, Deutsche Bank, Washington, DC.

"For the last 6 months, oil was moving up as the dollar strengthened," he said. However, "Starting in March 2009, the relationship between the broad stock market index and oil prices has been remarkably consistent; every 65-70 point gain on the S&P 500 has been worth about \$5/bbl on the crude oil price.

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