ABS has been chosen to provide classification and statutory certification services for the PETRONAS FLNG2 (PFLNG2) Engineering Procurement, Construction, Installation, Commissioning (EPCIC) project. The newbuild floating liquefied natural gas (FLNG) vessel, the second in a series, will be the first to be classed by ABS.

Malaysia’s state-owned PETRONAS announced the final investment decision for its second FLNG facility project in a press release issued in mid-February 2014. In the release, the company publicized that it had issued a letter of award for the EPCIC contract to a consortium comprising JGC Corp., Samsung Heavy Industries (SHI), JGC (Malaysia) Sdn Bhd and Samsung Heavy Industries (M) Sdn Bhd.

The design basis calls for a non-propelled vessel that will be moored via an external turret and will have LNG production capacity of 1.5 million metric tons per year (MTPA). The vessel, which will be built at the SHI shipyard in Korea and towed to East Malaysia for installation, is designed to be moored on site for a minimum of 20 years without drydocking.

Fabrication is to begin at SHI in May 2015, with keel laying expected seven months later in December. The hull launch is planned for April of 2016, and integration is anticipated in July. When completed, the PFLNG2 vessel will work offshore Sabah, Malaysia, in approximately 1,150 m (roughly 3,775 ft) water depth, where it will produce gas from the Rotan gas field beginning in the first quarter of 2018.

The first PETRONAS FLNG vessel, PFLNG1, which is scheduled to reach first production at the end of 2015, will be moored on the Kanowit field offshore Sarawak, also in Malaysia. It is designed to produce 1.2 million MTPA.

PETRONAS has stated that once operational, these two facilities will change the landscape of the LNG business, where liquefaction, production and offloading processes historically have been carried out onshore. With the ability to perform these functions hundreds of kilometers away from shore and closer to the offshore gas fields, these facilities will play a significant role in the company’s efforts to unlock the gas reserves in Malaysia’s remote fields, where the hydrocarbon volumes otherwise would be uneconomical to develop and produce.
China National Offshore Oil Corp. (CNOOC) and Husky Oil China Limited, a subsidiary of Canadian independent Husky Energy, have started gas production from the Liwan field, China’s largest offshore natural gas discovery and first deepwater development, in the South China Sea.

In July 2010, ABS and China Classification Society (CCS) were jointly contracted by CNOOC and Husky as third party agencies to provide certification services for the Liwan 3-1 deepwater development project, with deepwater subsea completion facilities consisting of subsea trees, manifolds and pipelines and with shallow-water facilities consisting of the CEP platform and associated export pipeline to the shore gas receiving plant.

For the deepwater scope of certification, ABS performed all technical review of the detailed design, onshore procurement and offshore installation, hookup and commissioning inspection services. For the shallow-water scope of certification, ABS performed technical review of the basic and detailed design, while CCS provided the statutory mandatory review, fabrication, installation and commissioning inspection services. Design review began in July 2010 and lasted more than three years, with ABS and CCS working together to execute the project.

The Liwan 3-1 field, consisting of nine deepwater wells, is located on Block 29/26 in 1,200 to 1,500 m (3,940 to 5,000 ft) water depth. The $6.5 billion development involved the deepest platform installation requiring the largest floatover installation achieved to date offshore China.

Liwan represents the latest in a series of major cooperative efforts between the two class societies. ABS and CCS also collaborated on the construction of the first LNG carriers built in Hudong Shipyard in China as well as the largest semisubmersible drilling unit, the Hai Yang Shi You 981, built at Waigaoqiao. Both projects were dual classed by ABS and CCS.

AIP Granted for HiLoad DP BR Technology

ABS has granted approval in principle (AIP) for the Remora HiLoad DP BR, a second generation of the HiLoad dynamic positioning (DP) unit that attaches to and keeps conventional tankers in position when loading from offshore installations.

The HiLoad technology, which was developed over 14 years, is based on the HiLoad Attachment System, which enables offloading to any conventional oil or LNG carrier without requiring modifications.

Upon completion of class requirements, the Remora HiLoad DP BR will receive the A1, AMS-NP, DPS-2 and UWILD notations. The functional description, Tanker Loading and Station Keeping System, will be included in the ABS Record in addition to the other class notations.

In mid-2013, Remora AS was contracted by BG Group to perform a FEED study for the next generation of HiLoad DP units. The HiLoad DP BR unit design will include increased engine power and the capability to maneuver vessels larger than Suezmax-size in the Brazil Santos Basin environment.

The HiLoad technology is jointly owned by Remora AS and HiLoad LNG AS, a 100 percent subsidiary of Sevan Marine ASA. Teekay Corp. is the largest owner of both Remora and Sevan Marine.
ABS Evaluates FPI Life Extension

Many floating production installations (FPIs) are approaching the end of their designed service life. Meanwhile, new discoveries and recently proven technologies for oil recovery have been pushing operators to extend oil production in existing fields beyond the originally predicted life. As a result, the demand for extending their service life has continued to grow rapidly together with associated challenges.

To respond to the demand and address the challenges on extending service life of aging floating offshore assets, Bret Montaruli, ABS Vice President of Offshore Technology, and his team recently hosted a week-long workshop in Houston.

Participants from ABS and ABS Group worldwide had extensive and productive discussions on the lessons learned and experience gained from life extension projects, research and development work and joint industry projects, with the goal of developing a methodology for FPI life extension.

ABS’ approach to extend FPI life is to evaluate the condition of the asset, assess the fatigue and strength characteristics of the structures, mooring systems and equipment, implement mitigation and repairs and customize in-service inspection programs or risk-based inspection programs for the extended service.

Based on the outcome of the workshop and the key findings from a variety of life extension studies by the ABS Brazil Offshore Technology Center and other groups, ABS is developing new Guidance Notes for life extension of FPIs to supplement the existing ABS Rules for Building and Classing Floating Production Installations (FPI Rules).

Sharing Solutions to Offshore Challenges

Industry experts from around the world gathered in Houston 5 - 8 May 2014 for the Offshore Technology Conference (OTC) in Reliant Park, setting a record for the highest attendance in 46 years at 108,300.

ABS’ participation at OTC took a number of forms this year, one of which was technical presentations. On Monday, 5 May, Kevin McSweeney of the Safety & Human Factors Group, ABS Corporate Technology, chaired a panel session on “Human Factors in Engineering” in which two papers authored by ABS and ABS Group were presented. And on Thursday, Christina Wang delivered a paper titled, “Structural Integrity Assessment of FPSO Life Extension and Relocation,” authored jointly with Chevron.

Additional technical presentations took place Monday through Wednesday at the ABS booth, where ABS and ABS Group engineers talked about life extension, classification of drilling systems, cybersecurity, structural integrity management, operations in extreme environments, software verification, ABS FLNG experience and maintenance master planning.

Topical lunches sponsored by the two companies included a Monday lunch focusing on deepwater brownfields, presented by Total E&P Angola, a Tuesday event where Shell talked about sustainable deepwater development through innovation, and a Wednesday luncheon that featured GE Oil & Gas taking a look at serving the global energy industry for the future.

ABS also hosted a topical breakfast on Wednesday at which the University of Houston and FMC Technologies presented information on the Global Subsea University Alliance.

This year’s event featured nine panel sessions, 29 executive keynote presentations at luncheons and breakfasts, and 308 technical papers.
New Committee Addresses Equipment Safety

With the creation of the Offshore Equipment Advisory Committee, ABS once again has taken the lead in working with the offshore industry to advance operational safety.

According to Ken Richardson, ABS Executive Vice President, Energy Development, who has been tasked with creating this committee, the objective in forming this group is to cultivate industry expertise that will be applied to developing and modifying ABS Rules and Guides.

“The formation of this committee is one of the ways ABS is taking safety to the next level – leading the industry toward the next generation of safety tools and systems,” Richardson explains. “We are always looking for ways to improve our classification criteria to make them as relevant and helpful as possible. This move will help ABS improve the tools the industry uses to verify operational safety.”

Equipment manufacturers – one of the groups that will be represented on the new committee – see value in participating in focused discussions that will give them a voice in guiding how safety is improved. Their view is that by working together, owners, manufacturers and classification societies can develop new equipment inspection processes that will make certification more efficient while maintaining a strong emphasis on safety.

“By inviting input from industry, ABS can produce the most comprehensive and thoroughly reviewed Rules and effective classification services in the industry.”

Plans are in place for the new committee to meet semi-annually to address relevant technical issues.

Pre-Laid Position Mooring Systems Guide Released

ABS has released criteria to meet offshore industry demand for optional classification notations covering pre-laid position mooring systems and equipment for mobile offshore units. The ABS Guide for the Classification Symbols Pre-Laid Position Mooring Systems and Equipment for Mobile Offshore Units outlines the requirements for the classification of mooring system components carried on board an offshore unit. The P-PL and M-PL notations are available for offshore units that satisfy ABS’ mooring system requirements.

According to ABS Principal Engineer, Singapore Engineering, Mike Kei, the Guide recognizes that a significant portion of the mooring equipment of pre-laid systems – including anchors, piles, chain, cable and buoys – typically are installed and connected on the seabed prior to a mobile offshore unit’s arrival on location. The Guide addresses those items that the mobile offshore unit operator typically carries on board, such as winches/ windlasses and top chain or wire rope.