



Society of Petroleum Engineers

Operating Mature and Very Mature Fields - Operating, Upgrading and Extending the Production Life of Offshore Assets

Super Early Bird Deadline : 21 November 2015
Early Bird Registration : 21 December 2015
Registration Deadline : 21 January 2016

21 - 24 February 2016 | Shangri-La's Tanjung Aru Resort & Spa, Kota Kinabalu, Malaysia

SESSION HIGHLIGHTS:

- Safety, Health, and Environment (SHE) viewpoint of operating mature assets.
- Integrity management of mature assets at the topside, underwater as well as subsurface.
- Maintenance and Operating strategies and equipment obsolescence management to increase reliability and sustaining production.
- Life extension from Cost, Time, Resource and Information Management perspective.
- Identification of new technologies and approaches to effectively and economically maintain mature assets.
- Inspection, repair and integrity management of subsea systems.
- Fabric maintenance advanced coating systems and life extensions.
- Integrity, fatigue, reliability and RBI programs.

WHY SHOULD YOU ATTEND?

- ✓ Broaden awareness on the current challenges faced by mature and very mature asset operators.
- ✓ Learn about various strategies such as modification, upgrading, retrofitting, and cost-effective maintenance options for mature assets.
- ✓ Learn about latest development in integrity management and life extension.
- ✓ Seek new innovative approaches for addressing the challenges of mature assets.
- ✓ Listen to case studies on managing mature assets.
- ✓ Gain insight from previous lessons learnt on mature equipment's success and failures.
- ✓ Build good networking within oil & gas upstream professionals worldwide.

WHO SHOULD ATTEND?

The workshop is developed for oil & gas upstream professionals, operators, service providers, and academic associates that are interested to learn more about what the industry is doing today and planning for tomorrow to address the challenges of operating mature assets. We expect to have participation from asset managers, maintenance engineers, operations engineers, managers and decision-makers in brownfield operations and maintenance. This workshop should appeal to both the experienced professionals wanting to hear of relevant experiences to current projects as well as to young engineers looking for insights into technologies that could contribute and be applicable to their future.



Associated Training Course

The Workshop will be preceded by a Training Course held on 20 - 21 February 2016 on Asset Integrity Management of Offshore Petroleum Production and Process Systems presented by R.M. Chandima Ratnayake, Professor in Mechanical Engineering of University of Stavanger.

For further information on this workshop, please visit www.spe.org/events/16akot



SPE WORKSHOP: OPERATING MATURE AND VERY MATURE FIELDS - OPERATING, UPGRADING AND EXTENDING THE PRODUCTION LIFE OF OFFSHORE ASSETS

Society of Petroleum Engineers

21 – 24 February 2016 | Shangri-La's Tanjung Aru Resort & Spa, Kota Kinabalu, Malaysia

Workshop Description

In today's offshore assets operations, managing mature assets has become part of day-to-day business for most operators. Many of these offshore facilities are still in production despite being at the tail-end or, for some, even beyond their intended designed lives. New subsurface discovery technology and various recovery methods have been the key factors driving the prolonged operation of these mature assets. However, operating mature assets presents a different set of challenges and it is imperative for Operators to find Safe, Effective and Optimum operating, integrity and maintenance management and strategies.

Common issues of operating mature assets include change in operating parameter versus design stage, material degradation, obsolescence of equipment and parts, accidental and extreme events; and higher unplanned downtime. Moreover, there are issues with personnel competencies and training facilities, availability of historical information, readiness of Original Equipment Manufacturer (OEM) and vendor's support.

Current decline in oil prices, posts even greater challenges to extend the lifespan of the mature assets. These include operating and equipment strategies of production sustainment; justifying retrofit work, like-to-like replacement or upgrading projects; allocation of budget and resources for proactive and corrective maintenance activities. Thus, a good balance is crucial to allow economical operations with prudent cost-effective approach in managing and operating mature assets.

Many operating companies have embarked on new strategies, such as assessing the risk of operating the mature assets, exploring modification and minimal foot print options, applying new technologies, as well as continuously reviewing short and longer-term operating and maintenance costs. Various types of asset-integrity management tools are available for this purpose. All in all, effectiveness of operating and managing mature asset will be paramount for offshore field production, as the clock is ticking and with tougher oil and gas price environment.

Workshop Objectives

The objective of the workshop is to understand the issues and challenges associated with continuing operations of mature and very mature assets, to learn and share knowledge and experience to overcome these challenges. Emphasis will be on what is currently being employed for both success and not-so-successful strategies and executions.

TECHNICAL PROGRAMME COMMITTEE

Co-Chairpersons

Ahmad Ramudzan Muda
Head of Production – Bintulu
PETRONAS Carigali

Ahmad Raihan Daud
Integrity Superintendent
ExxonMobil E&P Malaysia Inc.

Workshop Advisor

Saiful Azuan Aziz
General Manager - Development
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Vestigo Petroleum

Committee Members

Abe Nezamian
Director - Asset Integrity Manager
Worley Parsons

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Production Surveillance
PETRONAS Carigali

Faridah Saban
Senior Manager - Engineering Solution
E&P O&M Services

Matina Thammachart
Senior Engineer - Corrosion
PTTEP

PRELIMINARY DAILY ACTIVITIES AND TECHNICAL AGENDA

For updated technical information, visit www.spe.org/events/16akot

Sunday, 21 February 2016

1500	Hotel Check-in
1400 – 1600	Final Programme Committee Meeting
1700 – 1900	SPE Registration/Poster Setup
1800 – 1900	Discussion Leaders and Session Chairpersons/Managers Briefing
1900	Welcome Reception/Dinner

Monday, 22 February 2016

0830 – 1000	Session 1: Introduction/Opening & Keynote Address
1000 – 1030	Group Photo/Coffee Break
1030 – 1230	Session 2: Integrity Management in Mature Asset – Topside This session will focus on the topside sand erosion case histories and effective inspection and mitigation. Session topics and case histories include the review of current technique, practice and location of the inspection and monitoring tools, and the application of the sand erosion simulation model.
1230 – 1330	Luncheon
1330 – 1530	Session 3: Integrity Management in Mature Asset – Underwater This session focuses on growing challenge to operators managing the mature aged subsea production and offshore structures. Ageing is characterised by deterioration, change in operational conditions or accidental damages which, in the severe operational environment offshore, can be significant with serious consequences for installation integrity if not managed adequately and efficiently. Session topics and case histories include the review of current approaches in maximising the availability and productivity of the field, whilst operating safely and with minimal impact on the environment. The session expands to current developed methodologies for the survey, inspection, testing, condition monitoring repair and AIM program of the unit during operating life required that is further to be subjected to regulatory and certification requirements. The AIM program is to address availability, functionality, survivability and durability of the subsea asset and offshore structures regarding the fields intended operational life as part of safety management of the facility.
1530 – 1545	Coffee Break
1545 – 1745	Session 4: Strategising Maintenance towards Reliability of Mature Equipment In the current oil price environment and maturing profile of existing offshore platforms, the ability of operators to run the facility and equipment beyond the original design life while sustaining high reliability is of utmost importance and forms a key part of the strategy to ensure the field continues to produce at a competitive operating cost. In extending the life of a mature facility, one of the key challenges is in the area of equipment maintenance. This session is aimed to discuss the ideas and share examples from relevant case studies and implementation of maintenance strategies on mature equipment to achieve high reliability which would cover the various types of equipment (rotating, static, instrumentation, electrical, etc.) as well as the maintenance processes such as obsolescence and spare part management, operator care and preventive/corrective maintenance program.
1745 – 1830	Poster Session
1900	Group Dinner

Tuesday, 23 February 2016

0830 – 1030	Session 5: Production Optimisation and Novel Approach in Operating Mature Field This session will discuss initiative and technology to improve and maintain production in mature field. Session topics and case studies include operations management to ensure maximum equipment reliability and availability, facility debottlenecking and automations and well stimulations. The session also covers sand control technology and application since in mature field more wells are producing water that causes sand production.
1030 – 1045	Coffee Break
1045 – 1245	Session 6: Surface & Subsurface Integration and Development in Mature Field The focus of the session will be on how to improve and further develop Mature & Very Mature fields to sustain & extend the production life of the field. Session topics and case studies include subsurface and surface modeling to determine the most appropriate well location to tap un-drained reserve, develop bypass reservoir, integration of green field development and brown field facilities, secondary & enhanced oil recovery and facility debottlenecking. The session also covers the development of marginal field near the mature field cost effectively using new or existing technologies.
1245 – 1345	Luncheon

PRELIMINARY DAILY ACTIVITIES AND TECHNICAL AGENDA

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1345 – 1545	Session 7: Outlook of Mature Facilities from Health, Safety, and Environment Perspective Mature fields require more emphasis on HSE as ageing alters the hazard profiles and reduce the safety factor of facilities. Factors such as migration of H ₂ S, CO ₂ and Mercury to surface facility, subsidence of subsurface structures are ageing risks in addition to the topside structural deterioration, materials degradation, congestion and increasing operational load due to additional installation and modification over the years. This session discusses the health, safety and environmental aspects that compromise the mature fields, advancement in protection system, improved risk methodology and latest innovations etc. to combat these issues.
1545 – 1600	Coffee Break
1600 – 1800	Session 8: Realisation of Production Life Extension from Cost, Time, Resource and Information Management In operating Mature & Very Mature fields, different business & operating strategies are required to ensure the operations of the fields remain commercially viable. When production declines & revenue shrinks, Operators are required to exercise stringent cost discipline in order to safeguard assets from value dilution. However, many mature fields are still operating in identical set up and environment since its early peak production time. This session discusses and looks at new paradigms, strategies and success stories in organizational behavior and techniques to reduce cost and increase production including risk profiling strategies, realignment of operating models, information management and technology utilization.
Evening	Dinner on own

Wednesday, 24 February 2016

0830 – 1030	Session 9: Merging New Facilities into the Mature Ones – Challenges and Strategy Operating and sustaining production life of brown fields involves various development projects either to modify, upgrade, or rejuvenate the facilities. This session will focus on what are the current challenges to integrate and merge the new facilities with the existing ones, and how the upstream players overcome them. The challenges covers HSE, technical, infrastructure, transportation, economics, data management, and capability aspects. This session aims to share knowledge on current strategies and technologies applied in various upstream industries.
1030 – 1045	Coffee Break
1045 – 1245	Session 10: Case Study, Simulation, Modeling, Best Practice for Development Project in Mature Field Integrated reservoir characterization, well engineering and facilities engineering are the main elements for a mature field rejuvenation project. In order to get an in-depth characterization of the reservoir, tools such as logs, modelling/visualization software and 3D/4D seismic need to be utilized, thus identifying any bypassed oil/gas. This will lead to the decision between using an improved oil recovery (IOR), enhance oil recovery (EOR) or a combination of IOR/EOR technologies. Design of surface facilities including brownfield retrofit and structural stability require careful modelling to support the incremental oil. This session will discuss a number of mature field case studies, surface modelling, and the success/failure of the different technologies that were implemented.
1245 – 1315	Session 11: Summary and Wrap-up
1315 – 1430	Luncheon
1430 hours	Workshop Concludes

Poster Solicitation and Information

All participants are encouraged to prepare a poster for the Workshop. Posters will be presented at an assigned time and open to frank discussion and presentation of unconfirmed or partial results. Posters will be on display for the entire Workshop period. Presentations on both research and field experience are solicited.

When preparing your poster:

- Avoid commercialism. No mention of trademarks/product name.
- Poster size should be approximately 0.8m x 1.2m (W x H) or size A0 in portrait layout.
- Identify topic by title, presenter, affiliation, address, and phone number.
- Include a brief abstract that summarizes the technology to be addressed.
- Make the display as self-explanatory as possible.
- Place the information sequentially; beginning with the main idea or problem, method used, result, etc. (Draw a plan keeping the size and number of illustrations in mind).
- Keep illustrations simple by using charts, graphs, drawings, and pictures to create interest and visually explain a point.
- Use contrasting colours.
- Use large print for narrative materials. (We suggest a minimum of 24 points or 3" high letters for the title).

Note that the Workshop Programme Committee will review all poster abstracts/materials prior to display, and reserves the right to refuse permission to display any poster considered by the committee to be commercial in nature.

If you are interested in participating, please email your proposed topic with a short abstract (between 200- 300 words) to SPE Event Coordinator, Ruth Dass at rsdass@spe.org by 21 December 2015.



Society of Petroleum Engineers

SPE TRAINING COURSE: ASSET INTEGRITY MANAGEMENT OF OFFSHORE PETROLEUM PRODUCTION AND PROCESS SYSTEMS

20 - 21 February 2016 | Shangri-La's Tanjung Aru Resort & Spa, Kota Kinabalu, Malaysia

TRAINING COURSE

In conjunction with SPE Workshop on Operating Mature and Very Mature Fields - Operating, Upgrading and Extending the Production Life of Offshore Assets

Course Outline

The understanding of Asset Management (AM) is vital in managing corporate assets effectively to gain maximum value, profitability and returns while safeguarding personnel, the community, and the environment. In this context, an Asset Integrity Management (AIM) program provides a backbone and incorporates design, maintenance, inspection, process, operations, and management concepts, since all these disciplines impact the integrity of infrastructure and equipment. This course begins with concepts of AM in the offshore industry (ISO 55000). It then focuses on the concepts of AIM (i.e. design, technical and operation integrity) in safeguarding of operational systems moving along with the approaches to Reliability Centered Maintenance (RCM), Failure Mode Effect and Criticality Analysis (FMECA), Risk Based Maintenance (RBM) and Risk Based Inspection of static process equipment, maintenance planning of rotating equipment, mitigating the challenges caused by human factors, effective project management strategies and etc.

Who Should Attend?

- Engineering AM and AIM personnel
- Technical safety personnel
- Engineers involved in maintenance and modification projects
- Inspection and maintenance analysis and planning personnel
- Project managers and project engineers
- Technical discipline responsible personnel

CEUs

Engineers are responsible for enhancing their professional competence throughout their careers. Licensed, chartered, and/or certified engineers are sometimes required by government entities to provide proof of continued professional development and training. Training credits are defined as Continuing Education Units (CEUs) or Professional Development Hours (PDHs).

Attendees of SPE training courses earn 0.8 CEUs for each day of training. We provide each attendee a certificate upon completion of the training course.



Course Instructor

R.M. Chandima Ratnayake is a Professor in Mechanical Engineering in the University of Stavanger, Norway. He received a B.Sc. in Production Engineering & M.Sc. in Manufacturing Engineering in the University of Peradeniya Sri Lanka and PhD in Offshore Engineering in the University of Stavanger, Norway. He also works as a 'Senior Integrity Management Technical Advisor' with Wood Group Kenny Norway AS. He has also served as a 'Maintenance Engineering Specialist' in ApplySørco, AS, Norway and as a 'Senior Engineer' in Aker Solutions Offshore Partner, Stavanger, Norway. He also served in the capacities of visiting Associate Professor and Assistant Professor from August 2007 to July 2010 in the University of Stavanger, Norway and lecturer to number of universities & educational institutions in Sri Lanka. Presently he lectures: Manufacturing & Production Engineering and Product Development & 3D Modeling for B.Sc. students, Computer Aided Engineering (Integrated operations of production and process systems, RFID and bar code technology and automated systems) for M.Sc. students and two PhD courses (Industrial asset integrity assessment & control and Multi-criteria Decision Analysis) at the Department of Mechanical and Structural Engineering and Materials Science, University of Stavanger, Norway. He also conducts courses for practicing engineers in Oil & Gas industry and manufacturing sector in national and international level. He also has been invited for numerous international level conferences as a speaker within the contexts of Health, Safety & Environmental issues, Sustainability, Maintenance, Criticality Analysis, Risk Based Inspection and Reliability.



TRAINING COURSE

Day One

Asset Integrity Measures/Key Performance Indicators (KPI's)

- Introduction to performance measurement and performance measures
- Performance indicator prioritisation approach(s) for asset integrity assurance
- Current trends

Maintenance performance indicators and measures

- Introduction to guidelines and standards
- Traditional measures used in the oil and gas industry vs. future challenges in remote and harsh environments
- Latest developments

Offshore Asset Integrity Management

- Introduction to concept of offshore Asset Integrity Management (i.e. design, operational and technical integrity)
- Relationship of human factor and technology in asset integrity control
- Cases of asset integrity failures leading to catastrophic accidents

Approaches used for Asset Integrity Management

- Introduction to approaches used for AIM
- Current trends towards AIM
- Cases of Asset Integrity failures

Upcoming Training Courses

Optimal Core Data Preparation for Dynamic Reservoir Simulation - **Singapore**

SPE Foundational Training Series: Basic Petroleum Geology - **Kuala Lumpur, Malaysia**

Introduction to High Pressure High Temperature Field Development - **Kuala Lumpur, Malaysia**

SPE Foundational Training Series: P.R.I.M.E Leadership - **Kuala Lumpur, Malaysia**

Artificial Lift and Production Optimization Solutions - **Bangkok, Thailand**

Day Two

Reliability Centered Maintenance (RCM) and Failure Mode Criticality and Effects Analysis (FMECA)

- Introduction to RCM, regulatory requirements and standards
- Running RCM projects
- Roles and responsibilities, documentation and reports

Maintenance Planning of Rotating Equipment - Topside

- Introduction to standards
- Functional failure analysis and consequence classification
- Current challenges

Integrity Management (Risk Based Approach) of Static Process Equipment - Topside

- Standards and regulatory requirements for IM: risk based inspections
- Integrity assessment and control of topside systems
- Challenges and case studies in inspection planning and execution

Integrity Management (Risk Based Approach) of Subsea Systems

- Standards and regulatory requirements for subsea systems IM
- Integrity assessment and control of subsea systems
- Challenges and case studies: integrity assessment and control

Daily Training Schedule

08:00 - 08:30 a.m. Registration Opens

08:30 - 09:00 a.m. Welcome Coffee and Tea

09:00 - 10:30 a.m. Training Session

10:30 - 10:45 a.m. Coffee Break & Discussion

10:45 - 12:00 p.m. Training Session

12:00 - 01:00 p.m. Lunch Break

01:00 - 03:15 p.m. Training Session

15:15 - 15:30 p.m. Coffee Break & Discussion

15:30 - 17:00 p.m. Training Session



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SPE WORKSHOP: OPERATING MATURE AND VERY MATURE FIELDS - OPERATING, UPGRADING AND EXTENDING THE PRODUCTION LIFE OF OFFSHORE ASSETS

21 – 24 February 2016 | Shangri-La's Tanjung Aru Resort & Spa, Kota Kinabalu, Malaysia

GENERAL INFORMATION

Workshop Venue:

Shangri-La's Tanjung Aru Resort and Spa
20 Jalan Aru, Kota Kinabalu
88100 Sabah, Malaysia
T: +60 88 327 888
F: +60 88 327 878

Documentation:

- Proceedings will not be published; therefore, formal papers and handouts are not expected from speakers.
- Work in progress, new ideas, and interesting projects are sought.
- Note-taking by participants is encouraged. However, to ensure free and open discussions, no formal records will be kept.

Workshop Deliverables:

- The committee will prepare a full report containing highlights of the Workshop discussions. This report will be circulated to all attendees.
- PowerPoint presentation materials will be posted on a specific SPE URL site and made available to attendees after the Workshop. Provision of the materials by discussion leaders will signify their permission for SPE to do so.

Commercialism:

In keeping with the Workshop objectives and the SPE mission, excessive commercialism in posters or presentations will not be permitted. Company logos must be limited to the title slide and used only to indicate the affiliation of the presenter and others involved in the work.

Attendance Certificate:

All attendees will receive an attendance certificate attesting to their participation at the Workshop. This certificate will be provided in exchange for a completed Workshop Attendee Survey Form.

Continuing Education Units:

This Workshop qualifies for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the Workshop.

Transportation/Visa:

Delegates are advised to book their international / domestic airline tickets early from their country/city to Kota Kinabalu, Malaysia. Delegates travelling to Malaysia must be in possession of passports valid for at least six (6) months with proof of onward passage, either return, or through tickets. Contact your local travel agent for information on visa requirements to Malaysia prior to your departure.

Dress Code:

Casual clothing is recommended. The Workshop atmosphere is informal.

Registration Policy:

- Registration fee MUST be paid in advance for attending the Workshop.
- Full fixed fee is charged regardless of the length of time registrant attends the Workshop.
- Fixed fee cannot be prorated or reduced for anyone (Workshop chairpersons, committee members, speakers, discussion leaders, students and registrants).
- Attendees are expected to attend all Workshop sessions and are not permitted to attend on a partial basis.
- No refund will be issued if a registrant fails to show up at the workshop onsite. Refer cancellation policy on registration form.

Notes:

- Registration fee does not include hotel accommodation. However, SPE will provide hotel recommendations upon receipt of your registration.
- Registration fees does not include meal costs for additional family member(s).
- A discount fee of USD200 will be offered to registrants attending both "SPE Workshop on Operating Mature and Very Mature Fields" and SPE Training Course on "Asset Integrity Management of Offshore Petroleum Production and Process Systems"
- If attendance is not sufficient for the Training Course by 5 February 2016, SPE reserves the right to cancel the course.
- Substitutions will not be accepted without prior Programme Committee approval.
- No refund will be issued if a registrant fails to show up at the Workshop and/or Training Course on-site.

Attention Non-members Join Our Worldwide Membership!

Non-member registrants are eligible for one (1) year SPE Membership at no additional cost. To take advantage of this offer, you must fill out the membership application form onsite.

The Society of Petroleum Engineers (SPE) is a not-for-profit organisation. Income from this event will be invested back into SPE to support many other Society programmes. When you attend an SPE event, you help provide even more opportunities for industry professionals to enhance their technical and professional competence. Scholarships, certification, the Distinguished Lecturer programme, and SPE's energy education programme Energy4me are just a few examples of programmes that are supported by SPE.

