Webinar
Talk on "Mechanical Interference Fit Connection (MIFC) for Offshore Pipeline Application"

CPD Hours : 2 CPD Ref No : IEM23/HQ/225/T (w)

Organised by: Oil, Gas and Mining Technical Division

SYNOPSIS

Mechanical Interference fit connection (MIFC) has been considered one of alternative solution in joining method for pipeline application. It has been applied mostly for onshore pipeline application. This joining method offer benefit of faster joining rate, in which for offshore application, it will be the major cost element for installation. However there are more loading condition that need to be mitigated for offshore pipeline compared to onshore pipeline. In Malaysia, this technology was still considered new, and all regulatory requirement for the application is still based on welding.

There are significant difference between welding and this MIFC in term of quality assurance (QA) and quality control (QC) that can be applied, especially for site acceptance criteria. Therefore there was a requirement to demonstrate the design and integrity of the MIFC to meet the conventional requirement for pipeline welding as part of the regulatory requirement for a permit to install (PTI) and permit to operate (PTO).The qualification result shows that the MIFC can meet the minimum requirement and some criteria even exceed the requirement of welding. Subsequently, the joint acceptance criteria envelope has also been developed as acceptance criteria for site joining process. This joining criteria has then been proposed for regulatory purposes for offshore application quality assurance and quality control, in-lieu of the acceptance criteria by welding. Several effort to mitigate the challenges during project execution will also be described.

In this webinar, a case study in mitigating challenges during qualification and application of the MIFC as first offshore pipeline application in Malaysia and approach to qualify the performance of the MIFC joint will be described. It includes design verification using finite element analysis (FEA) as well as validation by full-scale testing. Numerous load cases from joint preparation until the pipeline laid on seabed and subsequently during operation stage will be covered for this qualification. Several challenges and mitigation during the qualification and offshore application will also be presented.

Acceptance by Malaysian Regulatory for PTI/PTO was successfully granted. This enable application for one of the pipeline projects in one of PETRONAS subsidiary. This successful application has become the first application in Malaysia and also considered longest single subsea application using MIFC worldwide, which opens the possibility for replication to other fields and other pipeline operators in Malaysia. Several possible further improvement will also be provided as outcome of the qualification.

Tuesday I 18 July 2023 I 3PM – 5PM

Registration Fee:

Student Member: Free | IEM Member: RM15 | Non-Member: RM70

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SPEAKER'S BIODATA

I Wayan Eka Putra

I Wayan Eka Putra has more than twenty years' experience in consultant, contractors and oil & gas operating company, covers engineering design, procurement, construction/fabrication, operation, inspection, maintenance repair and rehabilitation for oil and gas pipelines.

He is currently Head of Advance Material & Installation, Offshore Pipeline Engineering, in Group Technical Solutions (GTS) PETRONAS, appointed as Technical Authority for Pipeline Projects within PETRONAS, Malaysian and international operation, including Joint Ventures (JV).

In addition, he is also Discipline Resource Person (DRP) for Offshore Pipeline and Geotechnical Skill Group, regular trainer at Institute Technology PETRONAS (INSTEP) for conducting various Level 1 & 2 Pipeline Engineering Skill Group trainings.

He is also responsible to update or develop new for PETRONAS Technical Standards (PTS), PETRONAS Technical Guideline (PTG), and PETRONAS in-house pipeline engineering software. He is key person for qualification, and development of new technology for pipeline in PETRONAS.

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