Guidance for the avoidance of vibration-induced fatigue failure in subsea systems

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GUIDELINES FOR THE AVOIDANCE OF VIBRATION-INDUCED FATIGUE FAILURE IN SUBSEA SYSTEMS

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FOREWORD

Development of this publication was commissioned by the Energy Institute (EI) as part of its STAC Technical programme.

Existing guidance on vibration in piping systems (*Guidelines for the avoidance of vibration-induced fatigue in process pipework*, 2nd edition, 2008) is aimed at topsides and onshore piping systems. Given the unique challenges associated with subsea systems it was identified that separate guidance was warranted.

The objectives associated with the development of this document were therefore:

- To identify good design practice and hence ensure a robust design.
- To extend the screening methodologies to include additional excitation mechanisms, and reduce the conservatism in certain methods.
- To provide additional guidance on detailed fatigue assessment approaches.
- To provide guidance on vibration-monitoring methods for use subsea, and the use of monitoring data.

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