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(54) Title (EN): METHOD OF TESTING AN UNBONDED FLEXIBLE PIPELINE

(54) Title (FR): PROCÉDÉ DE TEST D'UN PIPELINE FLEXIBLE NON RACCORDÉ

(57) Abstract:

(EN): A method of testing an unbonded flexible pipeline comprising a polymer pressure sheath, the method comprising at least the steps of: (a) transmitting an electromagnetic signal along the polymer pressure sheath; (b) seeking one or more reflected signals; and (c) analysing the or each reflected signal to determine one or more characteristics of the electrical permittivity of the polymer pressure sheath. In this way, a non-invasive electromagnetic signal can be generated to be passed along the polymer pressure sheath of the pipeline, and any reflected signals can be interpreted and analysed to ascertain any change in the dielectric properties of the polymer pressure sheath, in particular the presence or existence of one or more discontinuities such as cracks or holes, in advance of possible failure, in particular catastrophic failure, of the polymer pressure sheath. Characteristics of the reflected signal(s) can include distance, extent, etc. of discontinuities along the pipeline. This invention can be applied both to new pipelines during their manufacture and/or instalment, as well as existing pipelines being in situ or in service, thereby providing a single method for analysing all forms of pipelines.

(FR): L'invention concerne un procédé de test d'un pipeline flexible non raccordé comprenant une gaine de pression polymère, ce procédé comprenant au moins les étapes consistant à : (a) envoyer un signal électromagnétique le long de la gaine de pression polymère; (b) rechercher un ou plusieurs signaux réfléchis, et (c) analyser le signal ou chaque signal réfléchi afin de déterminer au moins une caractéristique de la permittivité électrique de la gaine de pression polymère. De cette façon, un signal électromagnétique non invasif peut être généré pour le faire passer le long de la gaine de pression polymère du pipeline, et tout signal réfléchi peut être interprété et analysé de façon à s'assurer de tout changement dans les propriétés diélectriques de la gaine

de pression polymère, notamment la présence ou l'existence d'au moins une discontinuité, telle que des fissures ou des trous, avant une éventuelle avarie, notamment une rupture catastrophique, de la gaine de pression polymère. Les caractéristiques du signal réfléchi ou des signaux réfléchis peuvent être la distance, l'extension, etc., des discontinuités le long du pipeline. Cette invention peut s'appliquer à la fois à de nouveaux pipelines en cours de fabrication et/ou d'installation, ainsi qu'à des pipelines existants in situ ou en service, ce qui permet de proposer un procédé unique d'analyse de toutes les formes de pipelines.

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