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ISOPE STRAIN-BASED DESIGN SYMPOSIUM

37. SBD I: Materials for SBD (V. 4)
Tuesday June 21 08:00 Room 7
Chair: B Newbury, ExxonMobil Development Co, USA
Co-Chair: E Tsuru, Nippon Steel Corp, Japan

Effect of Mechanical Properties on Tensile Strain Limit for Leak of High-Pressure Pipe with Surface Crack
M Ohata, Osaka Univ; S Igi, JFE Steel; Y Takada, Osaka Univ; T Sakimoto, S Endo, JFE Stee; F Minami, Osaka Univ, Japan

Metallurgical Design and Microstructure for High Deformability of X100 Linepipe Steel
H Igari, H Nakamura, S Okaguchi, Sumitomo Metal Industries, Japan

Development and Mass Production of X60 High Deformable Line Pipe Suitable for Strain-Based Design
T Hara, Y Shinohara, N Doi, M Taro, Nippon Steel, Japan

Evaluation of High Strain Line Pipe Material
HY Chen, LK Ji, China National Petroleum, China

45. SBD II: Modeling in SBD (V. 4)
Tuesday June 21 10:30 Room 7
Chair: G Mannucci, Centro Sviluppo Materiali, Italy
Co-Chair: E Østby, SINTEF, Norway

Small-Scale Testing of the Effect of Embedded Defect Position in the Thickness Direction of an X65 UOE Pipe
E Østby, B Nyhus, SINTEF; C Thaulow, NTNU, Norway

Possibilities and Restrictions of Finite Element Modelling in Strain-based Design
SMM Hertele, M Verstraete, W De Waele, R Denys, Ghent Univ, Belgium

An Efficient FE-Based Probabilistic Model for Ductile Fracture Assessment of Pipelines with Surface Defects
A Sandvik, Statoil; E Østby, SINTEF; E Berg, LIKfr; C Thaulow, NTNU, Norway
Application of Digital Image Correlation in Testing of Weldments
MA Verstraete, W De Waele, RM Denys, S Herteli, Univ of Gent, Belgium

Effects of Cross-sectional Strain Distribution on the Critical Buckling Strain of Energy Pipelines
A Fathi, JJR Cheng, Univ of Alberta, Canada

Advanced Continuum Modeling to Determine Offshore Arctic Pipeline Strain Demand Due to Ice-Gouging
SP Lele, JM Hamilton, M Panico, H Arslan, ExxonMobil Upstream Research, USA

Shear Generated Fracture in Predicting Oil Leak in the BP Accident
KN Kofiani, T Wierzbicki, K Evangelos, MIT, USA

55. SBD III: Full Scale Testing in SBD (V. 4)

Tuesday June 21 14:00 Room 7
Chair: E Østby, SINTEF, Norway
Co-Chair: B Newbury, ExxonMobil Development Co, USA

Full Scale Bend Testing of Strain Based Designed High Grade Buried Gas Pipeline
G Mannucci, A Lucci, Centro Sviluppo Materials; CM Spinelli, ENI Gas & Power; A Baldi, G Mascia,
Univ of Cagliari, Italy

Material Guideline on Turning Point between Wrinkle and Rupture Developed under Bending
E Tsuru, Y Shinohara, Y Nagata, J Agata, Nippon Steel, Japan

Tensile Strain Capacity of 48” OD X80 Pipeline in Full-scale Bending Test with High Internal Pressure
S Igi, T Sakimoto, N Suzuki, R Muraoka, JFE Steel, Japan

Full-Scale Bending Test of 48” X80 Line Pipes
H Tajika, N Suzuki, JFE Steel, Japan

Effect of Full Scale Pipe Bending Test Method on Deformability Results of SAW Pipes
H Shitamoto, M Hamada, Y Nishii, I Takeuchi, Sumitomo Metal Industries, Japan

65. SBD IV: Fracture Mechanics in SBD (V. 4)

Tuesday June 21 16:20 Room 7
Chair: E Tsuru, Nippon Steel Corp, USA
Co-Chair: D McColskey, NIST, USA

Strain Rate Effect on Upper-Shelf Toughness for Pipeline Strain-Based Design
L De Pari, WH Van Geertruyden, N Zettlemoyer, ExxonMobil Development, USA

Evaluation for Fracture Toughness in Welded X80 Linepipes
Y Shinohara, E Tsuru, T Haru, Nippon Steel, Japan

Constraint-Based Assessment of CTOD Toughness Requirement for High-Strain Line
F Minami, Y Takashima, M Ohata, Osaka Univ., Japan

A New Assessment Approach for ECA of Clad and Lined Pipes Based on Shell and Line-Spring Finite Elements
E Østby, SINTEF; E Berg, LINKftr; B Nyhus, SINTEF; C Thaulow, NTNU; E Østby, SINTEF

DNV’s Strain-Based Fracture Assessment Approach for Pipeline Girth Welds
SL Bjerke, S Wastberg, Det Norske Veritas, Norway

A Multi-Tiered Procedure for Engineering Critical Assessment of Strain-Based Pipelines
DP Fairchild, M Macia, S Kibey, V Krishnan, F Bardi, H Tang, ExxonMobil Upstream Research, USA

Crystal Plasticity Modeling of the Local Crack Tip Stress Field
A Kane, E Østby, SINTEF Materials and Chemistry, Norway