

**ISOPE-2007
CALL FOR PAPERS**

The 17th International Offshore and Polar Engineering Conference
Lisbon, Portugal, July 1-6, 2007

Symposium on Strain-Based Design (SBD) of Pipelines

Strain-based design (SBD) generally refers to pipeline designs expected to have longitudinal strains greater than 0.5%. SBD encompasses both strain demand (applied strain) and strain capacity (strain limit). At least two limit states are associated with SBD: *tensile rupture* and *compressive buckling*. SBD in recent years has been driven primarily by the need to construct pipelines in the arctic regions, deep-water offshore, and other areas with high probability of large ground movements. While the tensile strain capacity is mostly controlled by the capacity of the girth welds, the compressive strain capacity can be strongly affected by a number of geometric factors and material properties. Complicating the matter further, the strain demands often have large uncertainties. There are no standards or codified procedures that adequately address SBD of pipelines. The resolution of this complex problem requires a multi-disciplinary approach by scientists and engineers from the academia, industry, and regulatory authorities. This symposium is the first forum dedicated to all aspects of science, technology, and applications of SBD of pipelines. It provides a unique and un-paralleled opportunity for discussions of recent advances in this important technology area.

Suggested Technical Topics:

- **Pipeline projects using SBD**
- **Linepipe specifications for SBD**
- **Metallurgical design of steels for SBD**
- **Estimating applied strains from ground movements and displacement-controlled loading**
- **Soil/fluid/pipe interactions**
- **Material testing methods**
 - **Small scale low constraint tests**
 - **Structural scale tests**
 - **Full scale validation tests**
 - **Reliability and consistency of testing methods**
- **Use of high strength micro-alloyed TMCP steels**
 - **Welding**
 - **Balance of strength and toughness**
 - **HAZ softening**
- **Development of weld defect assessment procedures (ECA)**
 - **Welding essential variables and procedure qualification tests**
 - **Weld property specifications**
 - **Defect assessment models**
 - **Material response under cyclic strains and dynamic loading**
- **Emerging issues for SBD, e.g., effects of bi-axial loading**
- **Technology transfer and code adoption**

Symposium Organizing Committee:

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Key Dates:

- **Abstracts Due: November 17, 2006**
- **Manuscript for Review: Jan. 15, 2007**
- **Final Papers Due: March 24, 2007**

Interested authors should send abstracts to one of the organizing committee members or submit online www.isopec.org. Please identify the contact author's address, phone and fax numbers, and e-mail address: Primary topic as SBD.